POSITIVELY AWARE

HIV TREATMENT, PREVENTION, AND SUPPORT FROM **TPAN**

MARCH + APRIL 2017

PICKING A REGIMEN
How to select the right medication for you

THE ART OF TREATING HIV
Recommendations and the benefits of antiretroviral therapy

KNOW WHERE TO LOOK
Getting help to pay for your meds

THE 21ST ANNUAL HIV DRUG GUIDE

SPECIAL PULL-OUT

HIV DRUG CHART
ID'ing your med

THERE'S SOMETHING EVERYONE CAN DO.

Here are two resources that can help.

STOP THE VIRUS.

Watch videos, find a testing location,
and reset what you know about HIV.

HelpStopTheVirus.com

YouTube.com/HelpStopTheVirus

HIV ANSWERS

Get the answers you need,
privately, on your phone.

HIVanswers.com/app

Ask a healthcare provider about all the ways you can help prevent HIV.

GILEAD

SHOULD HIV PREVENTION MATTER TO ME?

I AM LIVING WITH HIV.

I AM HIV NEGATIVE.

YES!

See how we can all help stop the virus in our bodies and communities.

STOP THE VIRUS.

Christopher M. Nguyen, PharmD, AAHIVP

THE PHARMACIST

Chris is an HIV and hepatitis C specialty pharmacist with Duane Reade/Walgreens in New York City. He currently practices at GMHC, where he works directly with clients on HIV-related issues such as adherence and medication management, and provides consults for local practitioners on drug interactions, dosing adjustments, and HIV and HCV regimen selections. He also helps train Duane Reade pharmacists working in HIV Specialty Network locations in New York, and is a CME speaker and Pharmacist Champion for the New York State Depart Ment of Health's Clinical Education Initiative. Chris received his Doctor of Pharmacy degree at the University of California, San Francisco, where he currently serves as volunteer faculty, and is credentialed by the American Academy of HIV Medicine as an HIV Pharmacist.

David Malebranche, MD, MPH

THE DOCTOR

Dr. Malebranche is a board certified Internal Medicine physician, researcher, and public health activist with expertise in HIV and sexually transmitted infection (STI) prevention and treatment, racial disparities research, and LGBT health. He has published over 50 articles in medical/public health journals and is known as a dynamic speaker worldwide. In 2015 he authored a memoir about the lessons he learned from his father entitled *Standing on His Shoulders*, and he can also be seen in the Greater Than AIDS campaign "Ask the HIV Doc" series on YouTube. Dr. Malebranche currently resides in Atlanta, Georgia.

Matt Sharp

THE ACTIVIST

Matt Sharp was diagnosed with HIV in 1988, and has a 25-year history advocating for AIDS treatment. In San Francisco he was a member of ACT UP Golden Gate, and outreach coordinator for clinical trials at San Francisco General Hospital. In 2000 he moved to Chicago, where he was Education and Advocacy Director at Test Positive Aware Network.

Matt is a founding member of ATAC (AIDS Treatment Activists Coalition), and was Director of Treatment and Education at Project Inform from 2009–2011. He recently helped to coordinate the HIV Cure-related Clinical Research Workshop sponsored by the Office for AIDS Research, and is now an international consultant providing written and training services to HIV service providers, non-profit organizations, and the pharmaceutical industry. He is helping to shape national mobilization of long-term AIDS survivors with The Reunion Project in cities across the country. His evidence-based report, *The Unintended Consequences of AIDS Survival*, was released on World AIDS Day 2016.

Enid Vázquez

THE ASSOCIATE EDITOR

POSITIVELY AWARE Associate Editor Enid Vázquez earned her B.A. in journalism from the University of Wisconsin-Madison. She became interested in health reporting because of the importance it has on people's lives. Enid considers herself privileged to be working on behalf of people living with HIV/AIDS, which she sees as a condition fueled as much by societal discrimination as by a virus. As such, it makes her reporting socio-political as well as medical. She enjoys medical updates that help extend not just life, but improve quality of life, for readers. Enid has a special interest in sexual violence and sexual freedom, and in serving the sex trade worker and transgender communities.

NGUYEN: JENNIFER POTTHEISER MALECRANCHE: TINNETTA BELL SHARP: DUANE CRAMER VÁZQUEZ: PETER SEROCKI

BEST FOOT FORWARD

ALTHOUGH LaWanda Gresham tested HIV-positive in 1996, it wasn't until 10 years later that the Los Angeles resident began successful treatment.

"My life is much different now. I have a wonderful doctor at the UCLA Care Clinic who takes great care of me," Gresham said.

In addition to the two women's HIV support groups she belongs to, Gresham is a community advocate, volunteering at several organizations as a public speaker and peer educator.

Graham's drive to raise awareness of HIV, especially among older people, prompted her to take part in the 2012 documentary film *Even Me*, which focused on the lives of several people over age 50 who were living with HIV.

"I stand in the gap for those who are living with HIV/AIDS and for those who are not," Graham said. "I educate others using myself as the example of living a spirit-filled life."

Thomas Davis learned he was HIV-positive in 2013 during the final semester for his BFA at L.A.'s American Musical and Dramatic Academy Performing Arts Dance Theater. Finding few, if any, other stories about gay men of color speaking out about their experiences, Davis decided to tell his own story in a video. He then became involved with various community organizations, learning more about HIV prevention while combatting stigma.

Davis has since served as a youth ambassador for the Human Rights Campaign. For National Youth HIV/AIDS Awareness Day, Davis created Positive Transformation, an educational event that brings together local artists and organizations. He is the community coordinator for UCLA's Adolescent Trials Network.

Throughout all his work, Davis has made it a point to be candid yet encouraging about his experience.

"Living with HIV has shown me that you can't control what has happened to you," said Davis, "but you can control where you go from here." —**RICK GUASCO**

ABOUT THE LOCATION: The William Grant Still Arts Center is located in Los Angeles' historic West Adams district, and is named after the acclaimed African American composer, who lived in the neighborhood and wrote more than 150 works, including five symphonies and eight operas. **Louis Carr's cover photography** features a mural by Los Angeles artist **AiseBorn**.

SPECIAL THANKS to the City of Los Angeles and the William Grant Still Arts Center. Location shooting was made possible through the cooperation of Ami Motevalli, the center's director; Dale Guy Madison, education coordinator; and Sofia Gabaldon, office manager.

POSITIVELY AWARE
JOURNALISM. INTEGRITY. HOPE.

Jeff Berry
EDITOR-IN-CHIEF
@PAeditor
"Whether you just tested positive, or are a long-timer like me, I encourage you to try to take your adversity and mold it into a strength."

Enid Vázquez
ASSOCIATE EDITOR
@enidvazquezpa
"I hope people find some of the help they need from this drug guide."

Rick Guasco
CREATIVE DIRECTOR
@rickguasco
"They say that information is power; I believe that information is hope. Empowered by the information you need, tomorrow can be better."

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ON THE COVER AND ON THIS SPREAD: Thomas Davis and LaWanda Gresham, photographed by Louis Carr at the William Grant Still Arts Center, Los Angeles.

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VOLUME 27 NUMBER 2

IN EVERY ISSUE

FEATURES

THE 21ST ANNUAL POSITIVELY AWARE

HIV DRUG GUIDE

A 'REUNION' IN SOUTH FLORIDA

Long-term survivors gather to share stories of resilience

JOIN THE CONVERSATION

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All letters, email, online posts, etc. are treated as letters to the editor unless otherwise instructed. We reserve the right to edit for length, style, or clarity. Let us know if you prefer not to have your name or city mentioned.

The Reunion Project South Florida for HIV long-term survivors took place January 27–29 at The Pride Center and World AIDS Museum in Ft. Lauderdale, Florida.

Over 100 people attended the main event on Saturday, with a keynote address on strengthening emotional resilience by David Fawcett, PhD, LCSW, and additional breakout sessions on mindfulness techniques, addressing isolation, and the unique healthcare needs of HIV long-term survivors.

Following are just a few of the comments from participants. For more information and to learn more about upcoming events, go to tpan.com/reunion-project. The Reunion Project is made possible by support from Bristol Myers-Squibb and TPAN.

—**JEFF BERRY**

Thank you for a fabulous conference with other long-term survivors who are thriving with HIV. The World AIDS museum was also incredible. You guys rock.

—**VALERIE WOJCIECHOWICZ**

Taking part in The Reunion Project over the weekend renewed my faith that as long as we work collectively—rather than scattered solo efforts—we will experience the real reward of being in this community, inviting others to opt to be *with* us, rather than going it alone.

—**MICHAEL VARGA**
NORCROSS, GEORGIA

Thanks to all the staff of the Reunion Project for bringing this program to Fort Lauderdale, and to all the men and women who opened their hearts and made this such a rich and moving day.

—**DAVID FAWCETT, PHD, LCSW**
FT. LAUDERDALE
david-fawcett.com

Thanks for a cathartic experience this weekend. Some of the reawakening was painful, but what a wonderfully safe space to process. I hadn't realized how many of those decade-old wounds were there.

—**JOHNNY WAITT**
FT. LAUDERDALE

The weekend in Ft. Lauderdale was just what I needed. Thanks to your group and TPAN and the local facilitators for a memorable and healing experience. I have been changed for the better.

—**HARRY C.S. WINGFIELD**
DAVENPORT, FLORIDA

YOU MADE A DIFFERENCE

Dear Enid, Back in 1998, you helped save my life. Doctors couldn't figure out what was wrong with me, my MRIs were like none they'd seen. I called POSITIVELY AWARE, and was referred to you. You told me about Dr. Justin McArthur of Johns Hopkins, head of neurology and doing brain research in HIV patients. He consulted with my doctors, and I even traveled to Baltimore once to see him. Not only am I alive today, but in 2006, I won Housing Works' Keith D. Cylar Award for HIV Advocacy. God sent me to you, and spared me for a reason. Thank you!

Enid Vázquez replies: Thank you for such a powerful and beautiful note. I am so grateful that I was able help. The world has much to be grateful for with your good health and survival!

IN THE EYE OF THE STORM

Just read the first chapter of Ross Slotten's book. I felt as though he was walking into my hospital room, or I was on his shoulder watching and reading his mind. Do you know when it'll be published? He was my very first HIV doc and was so kind and knowledgeable.

—**GREG KNEPPER**
VIA EMAIL

Do you know if the journals that Dr. Ross Slotten kept have been published ("In the Eye of the Storm," January+February 2017)? Ross was my late partner Randy Treff's doctor. I will never forget how good he was in caring for Randy—and for me.

—**BERNARD BROMMEL**
FOUNDING TPAN BOARD MEMBER
VIA EMAIL

Associate Editor Enid Vázquez replies: The book has not yet been published. We, too, eagerly await to see it.

PHOTO: CHRIS KNIGHT

EDITOR'S NOTE
JEFF BERRY

Growing pains

These are uncertain times we live in. When daily messages of hopelessness and despair fill your newsfeed, there may be a temptation to shut down and tune out, or to return to old, self-destructive behaviors in an effort to cope.

If you just tested positive, you might be thinking it's the last straw. But I need you need to know...you will be okay. You're going to be okay.

If you're a long-term survivor of HIV, you've come a long way, baby. Don't give up now. We've come too far to be defeated this easily.

Lately I've been reading up on something called post-traumatic growth. Research shows that many people who face trauma, adversity, or other life challenges actually report positive benefits, becoming stronger and having a more meaningful life in the wake of tragedy or a life-altering experience. We've seen this played out time and time again in HIV, where people turn their life around, and find meaning in their lives by helping others.

There are numerous instances of life after testing positive that are uplifting and inspiring. Take Magic Johnson, for example. He used his diagnosis to raise awareness about HIV, how it's transmitted (and more importantly how it's ***not*** transmitted), while providing hope to many of us living with HIV that we can still live a full, happy, and healthy life. AIDS activist the Rev. Rae Lewis-Thornton is another inspirational figure, someone who has been living with AIDS since the 1980s, yet uses her remarkable journey and life story to help inform others, especially youth, about HIV and AIDS.

HIV stigma still remains a stubborn issue, unfortunately. Dr. David Malebranche's article on page 16 illustrates why it's important to understand the many layers of stigma, if we are ever truly going to put a dent in the alarming number of new infections taking place in many of our disadvantaged and dis-empowered communities.

So whether you just tested positive, or are a long-timer like me, I encourage you to try to take your adversity and mold it into a strength. The 21st Annual POSITIVELY AWARE HIV Drug Guide could be your first step toward a new, more meaningful life, by helping you to become informed about HIV treatment so that you can advocate for your own health, or the health of someone you care about.

The HIV treatment landscape continues to evolve. For those who are newly or recently diagnosed, one pill once a day with few or no side effects is pretty much a given these days (see our 2017 HIV Drug Chart in the center of this issue). But it wasn't long ago that we had to take handfuls of pills several times a day, with horrible side effects like diarrhea, bone loss, kidney stones, or worse, along with lots of restrictions and qualifications on when and how to dose our meds.

When all is said and done, though, the future of HIV treatment looks bright, with more effective and more tolerable medications (no more "me-too" drugs); long-acting injectables (two shots once a month?); two-drug single-tablet regimens (less really is more!); and new co-formulations of existing medications (everything old is new again), all on the near horizon (see page 62). Drugs that attack HIV using different targets and new delivery methods could help those with resistance or who are struggling with adherence, but challenges remain—read Dr. Joel Gallant's "State of the ART" on page 11. The availability of generics could alter the landscape even further, with new generic single-tablet regimens coming soon to a pharmacy near you. If there's any doubt, read about the benefits of treatment in Dr. Chris Nguyen's "The Art of Treating HIV" on page 23.

Speaking of evolution, in an effort to make POSITIVELY AWARE better for everyone, please take a moment to take our 2017 Reader Survey on page 67. We definitely want to hear from you, and value your opinion. It only takes a minute, and it's free!

Thank you to everyone involved in the monumental effort involved in the making of the 2017 POSITIVELY AWARE HIV Drug Guide, including the amazing Chris Nguyen, PharmD; the always-remarkable Dr. David Malebranche; Matt Sharp (you're our hero!); our dear friend Dr. Joel Gallant; the meticulous Jason Lancaster for your eagle eyes; photographer Louis "Kengi" Carr for the beauty and inspiration you bring; Project Inform's Andrew Reynolds (our HCV rock star); Tim Horn and the Fair Pricing Coalition; NASTAD's always dependable Britten Pund; Drew Halbur at Howard Brown Health Center in Chicago; Kim and Mike at Fry Communications; and of course, last but not least, the genius of Creative Director Rick Guasco, who through his magic somehow makes it all work, and the extraordinary prowess of Associate Editor Enid Vázquez—we couldn't do this without you.

Take care of yourself, and each other.

Research shows that many people who face trauma, adversity, or other life challenges actually report positive benefits, becoming stronger and having a more meaningful life in the wake of tragedy or a life-altering experience.

@PAeditor

WHAT IS PREZCOBIX®?

- PREZCOBIX® is a prescription HIV-1 (Human Immunodeficiency Virus 1) medicine used with other antiretroviral medicines to treat HIV-1 infection in adults. HIV is the virus that causes AIDS (Acquired Immune Deficiency Syndrome). PREZCOBIX® contains the prescription medicines PREZISTA® (darunavir) and TYBOST® (cobicistat).
- It is not known if PREZCOBIX® is safe and effective in children under 18 years of age.
- **When used with other antiretroviral medicines to treat HIV-1 infection, PREZCOBIX® may help:**
  - reduce the amount of HIV-1 in your blood. This is called "viral load."
  - increase the number of CD4+ (T) cells in your blood that help fight off other infections.
- PREZCOBIX® is always taken in combination with other HIV medications for the treatment of HIV-1 infection in adults. PREZCOBIX® should be taken once daily with food.
- PREZCOBIX® does not cure HIV-1 infection or AIDS, and you may still experience illnesses associated with HIV-1 infection. You must keep taking HIV-1 medicines to control HIV-1 infection and decrease HIV-related illnesses.
- Ask your healthcare provider if you have any questions on how to prevent passing HIV to other people.
- **Please read the Important Safety Information below and talk to your healthcare provider to learn if PREZCOBIX® is right for you.**

IMPORTANT SAFETY INFORMATION

What is the most important information I should know about PREZCOBIX®?

- **PREZCOBIX® may cause liver problems.** Some people taking PREZCOBIX® may develop liver problems which may be life-threatening. Your healthcare provider should do blood tests before and during your treatment with PREZCOBIX®.
  - Chronic hepatitis B or C infection may increase your chance of developing liver problems. Your healthcare provider should check your blood tests more often.
  - Signs and symptoms of liver problems include dark (tea-colored) urine, yellowing of your skin or whites of your eyes, pale-colored stools (bowel movements), nausea, vomiting, pain or tenderness on your right side below your ribs, or loss of appetite. Tell your healthcare provider if you develop any of these symptoms.
- **PREZCOBIX® may cause severe or life-threatening skin reactions or rash.** Sometimes these skin reactions and skin rashes can become severe and require treatment in a hospital. Call your healthcare provider right away if you develop a rash.
  - **Stop taking PREZCOBIX®** and call your healthcare provider right away if you develop any skin changes with symptoms such as fever, tiredness, muscle or joint pain, blisters or skin lesions, mouth sores or ulcers, red or inflamed eyes like "pink eye" (conjunctivitis).
- **PREZCOBIX,® when taken with certain other medicines, can cause new or worse kidney problems, including kidney failure.** Your healthcare provider should check your kidneys before you start and while you are taking PREZCOBIX®.

Who should not take PREZCOBIX®?

- **Do not take PREZCOBIX®** with any of the following medicines: alfuzosin (Uroxatral®), carbamazepine (Carbatrol®, Epitol®, Equetro®, Tegretol®, Tegretol-XR®, Teril®), cisapride (Propulsid®), colchicine (Colcrys®, Mitigare®, if you have liver or kidney problems), dronedarone (Multaq®), elbasvir and grazoprevir (Zepatier®), dihydroergotamine (D.H.E.45®, Migranal®), ergotamine tartrate (Cafergot®, Ergomar®, Ergostat®, Medihaler®, Migergot®, Wigraine®, Wigrettes®), methylergonovine (Methergine®), lovastatin or a product that contains lovastatin (Altoprev®, Advicor®, Mevacor®), lurasidone (Latuda®), oral midazolam (Versed®), phenobarbital (Luminal®), phenytoin (Dilantin®, Dilantin-125®, Phenytek®), pimozide (Orap®), ranolazine (Ranexa®), rifampin (Rifadin®, Rifater®, Rifamate®, Rimactane®), sildenafil (Revatio®) when used for pulmonary arterial hypertension (PAH), simvastatin or a product that contains simvastatin (Simcor®, Vytorin®, Zocor®), St. John's Wort (*Hypericum perforatum*) or a product that contains St. John's Wort, or triazolam (Halcion®).
- Serious problems can happen if you take any of these medicines with PREZCOBIX.®

What should I tell my healthcare provider before taking PREZCOBIX®?

- **About all health problems.** Tell your healthcare provider if you have liver problems, including hepatitis B or hepatitis C, have kidney problems, are allergic to sulfa (sulfonamide), have diabetes, have hemophilia, or have any other medical condition, are pregnant, breastfeeding, or plan to become pregnant or breastfeed. Tell your healthcare provider if you become pregnant while taking PREZCOBIX.®
- **About all medicines you take.** Tell your healthcare provider about all the medicines you take, including prescription and over-the-counter medicines, vitamins, and herbal supplements. Some medicines interact with PREZCOBIX.® **Keep a list of your medicines to show your healthcare provider and pharmacist. Do not start taking a new medicine without telling your healthcare provider.** Your healthcare provider can tell you if it is safe to take PREZCOBIX® with other medicines.

What are the possible side effects of PREZCOBIX®?

- **The most common side effects of darunavir, one of the medicines in PREZCOBIX,® include** diarrhea, nausea, rash, headache, stomach area (abdominal) pain, and vomiting.
- **Other possible side effects include:**
  - **High blood sugar, diabetes or worsening diabetes, and increased bleeding in people with hemophilia** have been reported in patients taking protease inhibitor medicines, including PREZCOBIX.®
  - **Changes in body fat can happen in people who take HIV-1 medicines.** The exact cause and long term health effects of these changes are not known.
  - **Changes in your immune system** (Immune Reconstitution Syndrome) can happen when you start taking HIV medicines. Your immune system may get stronger and begin to fight infections that have been hidden in your body for a long time.

These are not all of the possible side effects of PREZCOBIX.® For more information, ask your healthcare provider.

Tell your healthcare provider if you have any side effect that bothers you or that does not go away.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch or call 1-800-FDA-1088. You may also report side effects to Janssen Products, LP at 1-800-JANSSEN (1-800-526-7736).

Please read accompanying Important Brief Summary for PREZCOBIX®.

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Janssen Therapeutics, Division of Janssen Products, LP

janssen Infectious Diseases

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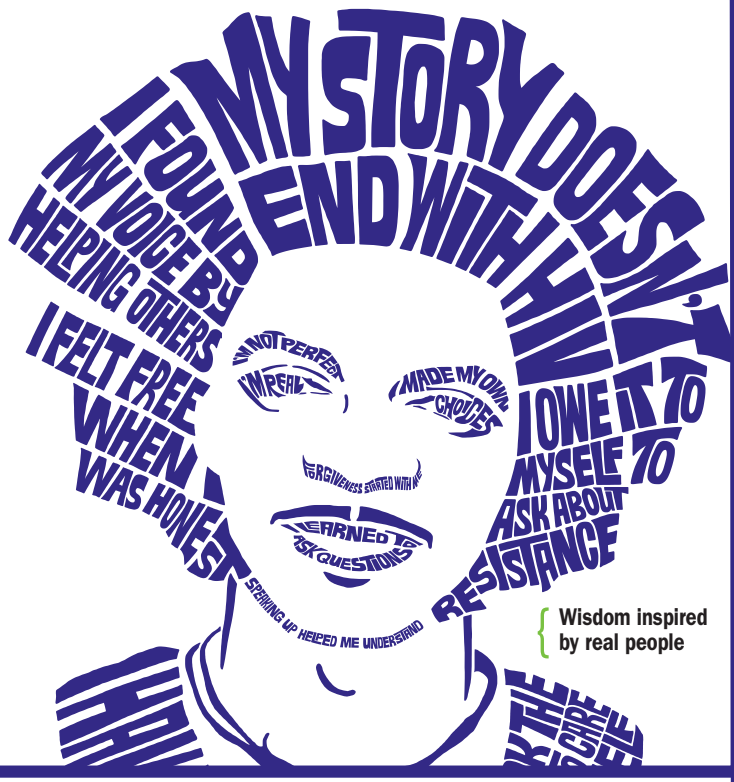


Wisdom inspired by real people

ASK YOUR DOCTOR ABOUT DRUG RESISTANCE AND ONCE-DAILY* PREZCOBIX®

"I'M TAKING STEPS TO HELP MY TOMORROW."

When deciding on an HIV treatment, think long term. Everyone is at risk of developing drug resistance. **Once-Daily* PREZCOBIX® has a high genetic barrier to resistance,** which may help.

*PREZCOBIX® is taken in combination with other HIV medications for the treatment of HIV-1 infection in adults.

ONCE-DAILY*

PREZCOBIX®
(darunavir 800 mg/
cobicistat 150 mg) tablets

PREZCOBIX.com

PREZCOBIX®
(darunavir 800 mg/
cobicistat 150 mg) tablets

"**Learning is part of my journey.** Asking questions helps me feel more confident."

PREZCOBIX® (prez-koe-bix)

(darunavir and cobicistat) tablets

What is PREZCOBIX® used for?

PREZCOBIX® is a prescription HIV-1 (Human Immunodeficiency Virus 1) medicine used with other antiretroviral medicines to treat HIV-1 infection in adults. HIV is the virus that causes AIDS (Acquired Immune Deficiency Syndrome). PREZCOBIX® contains prescription medicines PREZISTA® (darunavir) and TYBOST® (cobicistat). PREZCOBIX® does not cure HIV-1 infection or AIDS. You must keep taking HIV-1 medicines to control HIV-1 infection and decrease HIV-related illnesses.

What are the most serious warnings about PREZCOBIX®?

- **PREZCOBIX® may cause liver problems which may be life-threatening. Tell your healthcare provider right away if you have any symptoms such as:**
  - Dark (tea-colored) urine
  - Yellowing of your skin or the whites of your eyes
  - Pale-colored stools (bowel movements)
  - Nausea
  - Vomiting
  - Pain or tenderness on your right side below your ribs
  - Loss of appetite
- **PREZCOBIX® may cause severe or life-threatening skin reactions or rashes. Stop taking PREZCOBIX® and call your healthcare provider right away if you develop any skin changes with symptoms below:**
  - Fever
  - Tiredness
  - Muscle or joint pain
  - Blisters or skin lesions
  - Mouth sores or ulcers
  - Red or inflamed eyes, like "pink eye" (conjunctivitis)
- **PREZCOBIX® when taken with some other medications, can cause new or worse kidney problems, including kidney failure.**

What do I need to tell my healthcare provider?

Tell your healthcare provider if you:

- Have liver problems, including hepatitis B or hepatitis C
- Have kidney problems
- Are allergic to sulfa (sulfonamide)
- Have diabetes
- Have hemophilia
- Have any other medical condition
- Are pregnant or plan to become pregnant. (It is not known if PREZCOBIX® will harm your unborn baby. Tell your healthcare provider if you become pregnant while taking PREZCOBIX®.)
- Are breastfeeding or plan to breastfeed. Do not breastfeed if you take PREZCOBIX® because it is unknown if PREZCOBIX® can pass into your breast milk. You should not breastfeed if you have HIV-1 because of the risk of passing HIV to your baby.

Tell your healthcare provider about all the medicines you take, including prescription and over-the-counter medicines, vitamins, and herbal supplements. Some medications may prevent PREZCOBIX® from working or cause increased side effects. **Do not start taking a new medicine without telling your healthcare provider.**

Who should not take PREZCOBIX®?

- **Do not take PREZCOBIX®** with any of the following medicines: alfuzosin (Uroxatral®), carbamazepine (Carbatrol®, Epitol®, Equetro®, Tegretol®, Tegretol-XR®, Teril®), cisapride (Propulsid®), colchicine (Colcrys,® Mitigare,® if you have liver or kidney problems), dronedarone (Multaq®), elbasvir and grazoprevir (Zepatier®), dihydroergotamine (D.H.E.45® Migranal®), ergotamine tartrate (Cafergot,® Ergomar,® Ergostat,® Medihaler,® Migergot,® Wigraine,® Wigrettes®), methylergonovine (Methergine®), lovastatin or a product that contains lovastatin (Altoprev,® Advicor,® Mevacor®), lurasidone (Latuda®), oral midazolam (Versed®), phenobarbital (Luminal®), phenytoin (Dilantin®, Dilantin-125®, Phenytek®), pimozide (Orap®), ranolazine (Ranexa®), rifampin (Rifadin,® Rifater,® Rifamate,® Rimactane®), sildenafil (Revatio®) when used for pulmonary arterial hypertension (PAH), simvastatin or a product that contains simvastatin (Simcor,® Vytorin,® Zocor®), St. John's Wort *(Hypericum perforatum)* or a product that contains St. John's Wort, or triazolam (Halcion®).
- Serious problems can happen if you take any of these medicines with PREZCOBIX®

What are the possible side effects of PREZCOBIX®?

PREZCOBIX® may cause serious side effects including:

- Diabetes and high blood sugar
- Changes in body fat can happen in people taking HIV-1 medications
- Immune system changes (Immune Reconstitution Syndrome) can happen in people who start HIV-1 medications
- Increased bleeding can occur in people with hemophilia who are taking PREZCOBIX®

The most common side effects are:

- Diarrhea
- Nausea
- Rash
- Headache
- Stomach area (abdominal) pain
- Vomiting

These are not all of the possible side effects of PREZCOBIX®. For more information, ask your healthcare provider.

What should I know about this Brief Summary?

This information is not complete. To get more information:

- Talk to your healthcare provider or pharmacist
- Visit ***www.PREZCOBIX.com*** to read over the FDA-approved product labeling and patient information
- Call to report side effects either to the FDA at 1-800-FDA-1088 or to Janssen Products, LP at 1-800-JANSSEN (1-800-526-7736).

STATE OF THE ART

Expert guidance on choosing a drug regimen

BY **JOEL GALLANT, MD, MPH**

Antiretroviral therapy (ART) continues to get better, safer and easier, and we'll see new developments in 2017. In this article, I'll discuss my choices for initial therapy, options for simplification and switching, new drugs in the pipeline, and some experimental ART strategies.

INITIAL THERAPY

Although there are many options for first-line therapy, in actual practice we use just a few. Recognizing this fact, the International Antiviral Society-USA (IAS-USA) took a minimalist approach last year, including only four regimens in the "recommended" category: Genvoya, Triumeq, Isentress + Descovy, and Tivicay + Descovy. All four are integrase inhibitor-based regimens, and all but one (Triumeq) contain TAF, the new version of tenofovir. The guidelines from the U.S. Department of Health and Human Services (DHHS) recommend either TAF or TDF, the original version of tenofovir, and still include one protease inhibitor (PI)-based option: Prezista + Norvir. In trial after trial, the integrase inhibitors are either as good as or better than older regimens, with clear safety and tolerability advantages. Once again, neither group included a non-nucleoside reverse transcriptase inhibitor (NNRTI) in their list of recommended combinations. In discussing initial options, let's start with the single-tablet regimens (STRs). If taking one pill a day is important to you, you'll probably be choosing between Genvoya and Triumeq.

Genvoya, which includes the integrase inhibitor elvitegravir, is similar to Stribild except that it contains TAF rather than TDF. TAF gets more tenofovir into cells with lower levels in the blood. As a result, we haven't seen any kidney or bone toxicity so far, though it will take time to know whether TAF is *completely* safe from a kidney and bone standpoint or just safer than TDF. Genvoya contains cobicistat, a booster that, like Norvir, interacts with many other medications. In particular, be aware that it interacts with fluticasone, including Flonase, a widely used nasal steroid spray now available without a prescription.

Triumeq is another effective STR. Like Genvoya, it combines an integrase inhibitor (dolutegravir) with abacavir (ABC) and lamivudine (3TC), the two ingredients of Epzicom. Unlike Genvoya, it doesn't need a booster, which means fewer drug interactions. Dolutegravir has a higher barrier to resistance than the other two integrase inhibitors. Resistance is uncommon with any integrase inhibitor, and extremely unlikely to happen if you're taking your meds, but so far we haven't seen *any* resistance when dolutegravir-based regimens are used for initial therapy. There's still debate about whether the ABC in Triumeq increases the risk of heart attack. Current guidelines recommend avoiding it if you have heart disease or several risk factors for heart disease. Pre-screening for ABC hypersensitivity with an HLA-B*5701 test is necessary before starting Triumeq.

If taking an STR isn't a priority, here are two other regimens you could consider.

Tivicay plus Descovy: The problem with the two STRs I discuss above is that each involves a minor compromise. Triumeq has dolutegravir (Tivicay), everyone's favorite integrase inhibitor, but it requires taking abacavir (ABC), which has some disadvantages over tenofovir, especially now that TAF is available. Genvoya contains emtricitabine (FTC) and TAF, everyone's favorite nucleoside backbone, but requires the cobicistat booster, which has drug interactions. If you want to avoid any compromise, you could take the two-pill combination of Tivicay + Descovy. When I ask my HIV colleagues what they would take if they were HIV-positive, this is the one they most often mention.

Prezcobix plus Descovy: PIs used to be the drugs known for their high pill burden and nasty side effects, but that's no longer the case. Two PIs, darunavir and atazanavir, are now co-formulated with the cobicistat booster (Prezcobix and Evotaz, respectively), which means you can take a PI-based regimen with just two pills per day. Although these PIs have a few more side effects than integrase inhibitors, they're still well tolerated and don't have all the metabolic toxicity we saw with the older PIs. Of the two, darunavir (either as Prezista/Norvir or Prezcobix) is preferred over atazanavir (either Reyataz/Norvir or Evotaz) because of its better toxicity and tolerability profile. It's almost impossible to become resistant to PIs, even with poor adherence. I sometimes choose them when adherence is uncertain: in patients with substance abuse or mental health issues, those who miss a lot of clinic appointments, or those with no prior experience taking chronic medications. There's always the option of switching to an STR later, once it's clear that nonadherence isn't a problem. In fact, the combination of the drugs in Prezcobix and Descovy is being developed as an STR. Dolutegravir-based regimens, including Triumeq, look like they have the same resistance advantage and are generally better tolerated. Although we don't have as many years of experience with dolutegravir as we do with PIs, we haven't seen resistance yet.

SWITCHING

We're seeing a lot of data from "switch studies" these days. Drug companies obviously want you to switch from older drugs to their newer ones. But while people on older regimens sometimes worry if their combination is no longer "recommended," the guidelines make it clear that what's not recommended for someone starting therapy may be fine for someone who's already taking it without problems. Let's talk about when and why you might consider switching from a regimen that's working...assuming you have

an undetectable viral load on your current regimen and no resistance to any of the drugs you'll be switching to.

Complera: Odefsey is gradually replacing Complera because it contains TAF instead of TDF. Neither is on the recommended list for initial therapy because they're less effective at high viral loads and low CD4 counts and you have to take them with a meal, avoiding acid-reducing drugs. Still, Odefsey is well tolerated and effective if you take it correctly. If you're on Complera, there's no reason not to make the switch.

Stribild: Similarly, I can't think of a reason not to switch from Stribild to the TAF-containing version, Genvoya.

Truvada: At the moment, there's no reason not to switch from Truvada to the TAF-based version, Descovy (in combination with a third agent). That could change when generic TDF becomes available and the price goes down, but for now, there's no increase in cost with the switch.

Atripla: I no longer start this regimen because of its neuropsychiatric side effects. Most of my patients who experienced those effects (sleep problems, disturbing dreams, depression, dizziness, or "cloudy thinking") already switched to something else a long time ago, leaving just a handful who either tolerate it well or love the vivid dreams. However, there will never be a TAF-containing version of Atripla. This is a new reason for people to consider switching, usually to one of the other STRs. Those who look forward to their wild efavirenz dreams every night can keep them by switching to Descovy + Sustiva.

Prezista/Norvir: If you're taking it once a day, there's no reason not to switch to Prezcobix to reduce the number of pills you take. If you're taking it twice a day because of darunavir resistance, Prezcobix is not an option.

Reyataz/Norvir: Similarly, there's no reason not to switch to Evotaz to reduce pill burden.

Viramune: For toxicity reasons, Viramune is no longer recommended for initial therapy. But since almost all Viramune toxicity occurs in the first few weeks to months of treatment, it's not necessary to switch if you've been doing well on it for years unless you'd prefer to be on an STR.

CLASS IS IN SESSION:

HIV medications fall into one of five drug classes. These are the drugs commonly prescribed today, and where you will find them in the HIV Drug Guide.

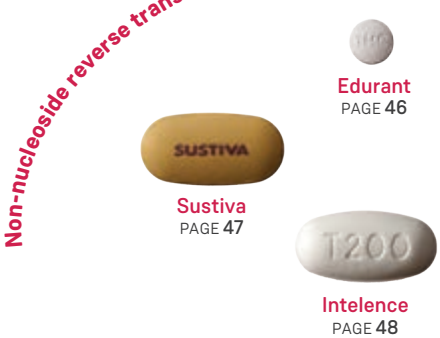
Single-tablet regimens

Protease inhibitors

Nucleoside reverse transcriptase inhibitors ("Nukes")

PK enhancer

Non-nucleoside reverse transcriptase inhibitors ("Non-nukes")



Integrase inhibitors

Entry inhibitor

FILE PHOTOS BY JOSHUA THORNE, CHRIS KNIGHT, JOHN GRESS

Older nucleoside analogs: No one should be taking didanosine (ddI, Videx) or stavudine (d4T, Zerit) anymore. In fact, they're finally being taken off the market for that reason. I can't think of a reason to use zidovudine (AZT, Retrovir, also found in Combivir and Trizivir) either.

Older protease inhibitors: There's little reason to use any PI other than the two I've already mentioned, but if you're a creature of habit, you're happy with what you're taking, have no diarrhea, have no problems with lipids or blood sugar, and you don't mind the extra pills, you could choose to stay the course.

TREATMENT-EXPERIENCED PATIENTS

Before talking about new drugs, let's discuss some simplification options for treatment-experienced people taking what were once called "salvage regimens." A recent study showed that in some treatment-experienced people with drug resistance, switching to a two-pill combination of Genvoya and Prezista was better than staying on the existing, multi-pill combination. This regimen isn't for everyone: People who enrolled in the study could have no integrase mutations, no darunavir mutations, and no more than 3 thymidine analog mutations (TAMs). An unstudied regimen that might also work in some situations would be Triumeq plus Prezcobix, though if you have drug resistance there are advantages of the FTC/TAF backbone in Genvoya over the ABC/3TC backbone in Triumeq. Some providers are also using rilpivirine to replace etravirine (Intelence) in order to simplify complex regimens. This is an untested strategy, but it allows the use of Odefsey (rilpivirine plus FTC/TAF) in combination with a protease inhibitor, integrase inhibitor, or both. A very small study suggested that the two-pill combination of Tivicay plus Edurant could be considered in treatment-experienced patients without resistance to either drug; the same is presumably true for the two-pill, three-class combination of Tivicay plus Odefsey.

At double the usual dose, Tivicay is active against some virus that's resistant to Isentress and elvitegravir, the integrase inhibitor in Stribild and Genvoya. But the more mutations you have, the less likely you are to respond to Tivicay, so don't stay on other integrase inhibitors if they're not keeping your viral load suppressed. Integrase genotypes will tell you whether Tivicay still has activity.

INVESTIGATIONAL AGENTS

Doravirine, an investigational non-nucleoside reverse transcriptase inhibitor (NNRTI), has activity against common mutations that cause resistance to the existing NNRTIs (Viramune, Sustiva, and sometimes even Intelence and Edurant).

Bictegravir, an investigational integrase inhibitor, is being studied in an STR that also contains FTC and TAF.

Entry inhibitors. Two drugs that block entry of the virus into the CD4 cell look promising for people who have run out of other options. Fostemsavir blocks entry of the virus into the cell by interfering with the attachment of the virus to the CD4 receptor. Ibalizumab is a monoclonal antibody given by intravenous infusion that binds directly to the CD4 receptor.

Long-acting agents. The combination of the integrase inhibitor cabotegravir and a long-acting version of rilpivirine (Edurant) is being given by monthly intramuscular injection in clinical trials, and cabotegravir is also being studied as an injectable PrEP agent. MK-8591 is a long-acting nucleoside reverse transcriptase translocation inhibitor (NRTTI) that has the potential for either oral or injectable dosing. This approach won't be right for everyone, though. One concern about long-acting agents is the danger of missing doses. For example, skipping a monthly injection of cabotegravir/rilpivirine could result in a month of gradually declining drug levels and the potential for two-class drug resistance. Also, if you're already taking pills for other conditions anyway, and you're seeing your provider just twice a year, coming in for monthly injections in order to decrease your daily pill burden by one or two tablets might not seem like a lousy trade-off.

NEW STRATEGIES

A hot new trend in HIV therapy is immediate initiation or "rapid start," where ART is started right away, sometimes on the day of diagnosis. This approach is appealing not only because of the health and prevention benefits of ART, but also because people who are on treatment are more likely to remain engaged in care than those who are just told to come back for more clinic visits. Only certain regimens can be started without lab results. My short list would include Genvoya, Tivicay + Descovy, or Prezcobix + Descovy. Triumeq and other ABC-containing regimens are out because you need the HLA-B*5701 test first. TDF-based regimens require information on kidney function. You shouldn't start NNRTI-based regimens (e.g. Atripla, Odefsey) without a baseline resistance test, and you need to know the baseline viral load and CD4 count before starting rilpivirine (Complera or Odefsey).

Another strategy being studied involves two-drug regimens instead of the three-drug approach we've been using for the last 20 years. I've discussed the long-acting cabotegravir + rilpivirine (Edurant) studies (which enroll people whose viral load is already suppressed on standard therapy). The two-drug combination of oral Tivicay + Edurant is also being evaluated. There are two ongoing trials of Tivicay + 3TC (lamivudine), which is attractive mainly because of the low cost of the generic 3TC component. Some researchers have so much confidence in Tivicay that they've been giving it by itself ("monotherapy"). I don't recommend that approach, since we've already seen integrase resistance emerge with Tivicay monotherapy, which we've never seen when Tivicay is combined with other drugs. PA

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PHOTO COURTESY OF JOEL GALLANT

Standard practice

DHHS HIV **treatment guidelines** for first-time therapy

KEY TO ACRONYMS

3TC: lamivudine
ABC: abacavir
ARV: antiretroviral
ATV/COBI: cobicistat-boosted atazanavir
ATV/r: ritonavir-boosted atazanavir
CrCl: creatinine clearance
DRV/COBI: cobicistat-boosted darunavir
DRV/r: ritonavir-boosted darunavir
DTG: dolutegravir
EFV: efavirenz
EVG/COBI/FTC/TDF: elvitegravir/cobicistat/emtricitabine/tenofovir DF
EVG/COBI/FTC/TAF: elvitegravir/cobicistat/ emtricitabine/tenofovir alafenamide
FTC: emtricitabine
INSTI: integrase strand transfer inhibitor
NNRTI: non-nucleoside reverse transcriptase inhibitor
NRTI: nucleoside reverse transcriptase inhibitor
PI: protease inhibitor
RAL: raltegravir
RPV: rilpivirine
RTV: ritonavir
TAF: tenofovir alafenamide
TDF: tenofovir disoproxil fumarate

A regimen should be individualized on the basis of virologic efficacy (suppression of viral load to less than 50 copies per mL), toxicity, pill burden, dosing frequency, drug-drug interaction potential, resistance testing results, comorbid conditions (such as kidney disease, hepatitis B or C, etc.), and cost. More details including the strength of each recommendation and those for pregnant women are in the documents from the U.S. Department of Health and Human Services (DHHS) online. AIDSinfo has mobile applications that allow access to federally approved HIV/AIDS treatment and research information and are offered free of charge, including a Guidelines app, at aidsinfo.nih.gov/apps.

Most patients new to antiretroviral therapy

should start on one of six regimens, based on two types of combination regimens:

INSTI-based regimen:
One INSTI drug with two NRTIs

PI-based regimen:
One boosted protease inhibitor and two NRTIs

Recommended regimen options

INSTI-based
(IN ALPHABETICAL ORDER)

Genvoya (EVG/COBI/FTC/TAF)[2]

Isentress (RAL) + either **Descovy** (FTC/TAF) or **Truvada** (FTC/TDF)[1]

Stribild (EVG/COBI/FTC/TDF)[3]

Tivicay (DTG) + either **Descovy** (FTC/TAF) or **Truvada** (FTC/TDF)[1]

Triumeq (DTG/ABC/3TC)[4]

PI-based
Boosted **Prezista** (DRV/r) + either **Descovy** (FTC/TAF) or **Truvada** (FTC/TDF)[1]

* **Panel on Antiretroviral Guidelines for Adults and Adolescents.** Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Department of Health and Human Services. Available at aidsinfo.nih.gov/contentfiles/lvguidelines/AdultandAdolescentGL.pdf. Accessed January 13, 2017, page F-3, Table 6.

Alternative regimen options

Regimens that are effective and tolerable, but that have potential disadvantages when compared with the recommended regimens listed above, have limitations for use in certain patient populations, or have less supporting data from randomized clinical trials. An alternative regimen may be the preferred regimen for some patients

NNRTI-based regimen:
(IN ALPHABETICAL ORDER)

Atripla (EFV/FTC/TDF)[1]

Complera (RPV/FTC/TDF)[1,5]

Odefsey (RPV/FTC/TAF)[1,5]

Sustiva (EFV) + **Descovy** (FTC/TAF)[1]

PI-based regimen:
(IN ALPHABETICAL ORDER)

Evotaz (ATV/COBI) + either **Descovy** (FTC/TAF) or **Truvada** (FTC/TDF)[1]

Prezcobix (DRV/COBI) + either **Descovy** (FTC/TAF) or **Truvada** (FTC/TDF)[1,3]

Boosted **Prezista** (DRV/r or DRV/COBI) + **Epzicom** (ABC/3TC)[1,3,4]

Boosted **Reyataz** (ATV/r) + either **Descovy** (FTC/TAF) or **Truvada** (FTC/TDF)[1]

Other antiretroviral regimen options

Regimens that, in comparison with Recommended and Alternative regimens, may have reduced virologic activity, limited supporting data from large comparative clinical trials, or other factors such as greater toxicities, higher pill burden, drug interaction potential, or limitations for use in certain patient populations.

INSTI-based regimen
Isentress (RAL) + **Epzicom** (ABC/3TC)[1,4]

NNRTI-based regimen
Sustiva (EFV) + **Epzicom** (ABC/3TC)[1,4,6]

PI-based regimen
Boosted **Reyataz** (ATV/COBI or ATV/r) + **Epzicom** (ABC/3TC)[1,4,6]

THESE COMBINATIONS are among those available as co-formulated fixed-dose combinations:

ABC/3TC
Epzicom

ATV/COBI
Evotaz

DRV/COBI
Prezcobix

DTG/ABC/3TC
Triumeq

EFV/FTC/TDF
Atripla

EVG/COBI/FTC/TAF
Genvoya

EVG/COBI/FTC/TDF
Stribild

FTC/TAF
Descovy

FTC/TDF
Truvada

RPV/FTC/TAF
Odefsey

RPV/FTC/TDF
Complera

FOOTNOTES

1 3TC may be substituted for FTC, or vice versa.
2 Only for patients with pre-antiretroviral therapy CrCl ≥30 mL/min
3 Only for patients with pre-antiretroviral therapy CrCl ≥70 mL/min
4 Only for patients who are HLA-B*5701 negative
5 Only for patients with pre-treatment HIV RNA <100,000 copies/mL and CD4 cell count >200 cells/mm^3
6 Only for patients who are HLA-B*5701 negative and with pre-treatment HIV RNA <100,000 copies/mL

TO SPEAK OR NOT TO SPEAK

HIV stigma and the consequences of silence

BY **DAVID MALEBRANCHE, MD, MPH**

Stigma. A mark of disgrace or infamy. A stain or reproach, as on one's reputation.

HIV stigma has been a part of the social context of this epidemic since the first mention of it in the CDC's *Morbidity and Mortality Report* in 1981. Over the years, it has morphed and mutated into different forms, yet can still exact similar impact and harm to its intended victim.

The casual mention of a friend bearing a suspicious lesion on his skin that could be Kaposi's sarcoma.

The nonchalant whisper of a warning that someone you're trying to date just bought a "Home In Virginia."

The double and triple-gloving of medical staff just to touch a patient living with HIV.

The insistent referral to HIV-positive patients as "HIV-infected" rather than "someone living with HIV."

The exaggerated incarceration sentence that exceeds what one would get for murder for non-disclosure of HIV status in a consensual sexual encounter.

The social media rampage of judgmental speculation when a celebrity dies or someone photographs their "dramatic" weight loss.

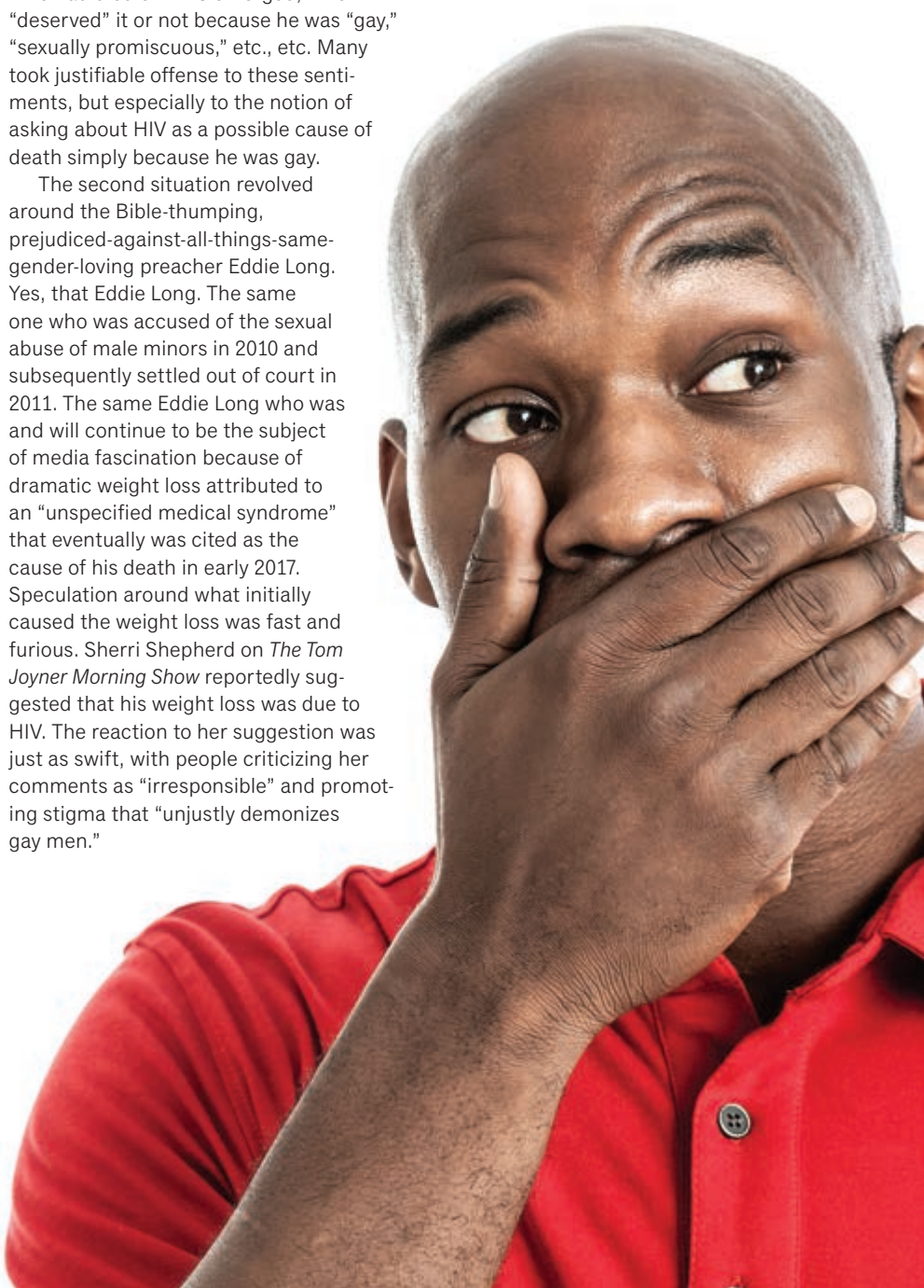
The stigma of carrying an HIV diagnosis can infiltrate into many areas of one's life. It can prevent one from getting tested in the first place for fear of confirmation. It may keep one from disclosing their status for fear of rejection by sexual partners, friends, families, or loved ones. It could influence how one navigates employment situations for fear of not getting or losing a job. It can even prevent one from accessing life-saving treatment because it makes the diagnosis all too real.

Indeed, HIV stigma is a curious and insidious thing.

I have recently witnessed two separate social media situations where HIV stigma reared its ugly head. The first surrounded the death of George Michael, the 1980s pop superstar who was equally known for his musical prowess as his brushes with the law for "lewd acts" in public bathrooms. When news of his transition became public, the speculation around if he had died of AIDS emerged, if he "deserved" it or not because he was "gay," "sexually promiscuous," etc., etc. Many took justifiable offense to these sentiments, but especially to the notion of asking about HIV as a possible cause of death simply because he was gay.

The second situation revolved around the Bible-thumping, prejudiced-against-all-things-same-gender-loving preacher Eddie Long. Yes, that Eddie Long. The same one who was accused of the sexual abuse of male minors in 2010 and subsequently settled out of court in 2011. The same Eddie Long who was and will continue to be the subject of media fascination because of dramatic weight loss attributed to an "unspecified medical syndrome" that eventually was cited as the cause of his death in early 2017. Speculation around what initially caused the weight loss was fast and furious. Sherri Shepherd on *The Tom Joyner Morning Show* reportedly suggested that his weight loss was due to HIV. The reaction to her suggestion was just as swift, with people criticizing her comments as "irresponsible" and promoting stigma that "unjustly demonizes gay men."

As a proud member of Generation X, I was torn over Sherri Shepherd's comments when considering how the mention of HIV was the truest definition of stigmatizing when applied to known (George Michael) and presumed (Eddie Long) "gay" public figures during health crises and death. I remember the days when people



HIV stigma can be society-approved,
self-inflicted, or perpetrated by bystanders with ill motivations. It can be a metaphorical cancer that eats away at us slowly.

avoided mentioning HIV when someone gay died, but the reality of it being the actual cause weighed heavy on our minds. Obituaries would say someone died of "pneumonia" or "meningitis"—yet we all know for what condition those were code words. As the HIV epidemic continued over the years, there was a push to "normalize" conversations around HIV in an effort to make people more comfortable bringing up the subject with loved ones without the threat of stigma. This never happened because the societal stigma perpetuated against folks living with HIV never fully went away.

As a clinician experienced in HIV treatment, I couldn't help but put medical logic to the cases of George Michael and Eddie Long. George Michael had pneumonia and heart failure, both of which can be complications of HIV, and he had been busted twice for public sexual activity. Not inquiring about HIV as a potential contributor could be likened to medical malpractice. Eddie Long was a preacher at a megachurch, accused of sexually molesting several young men and then settling out of court. He publicly promoted an anti-same-gender-loving agenda. If this man came into my office suffering from significant weight loss, HIV (along with cancer, diabetes, auto-immune disorders, etc.) would certainly be part of my differential diagnosis. Clinical offices are certainly not the same venues as social media spaces, but not mentioning the elephant in the room can be dangerous in both settings.

PHOTO: ISTOCKPHOTO

Is it more stigmatizing to verbally bring up the topic of HIV when considering a person's unknown health condition than to stay silent out of political correctness until they die?

The question is layered, but I suspect the answer lies in the intentions of the person who raises the issue of HIV in these contexts. Is their goal to smear the name of the deceased or living with "undisclosed" illness with the certain stigma associated with the mere mention of HIV? Or is the intent to bring HIV into the conversation so perhaps others dealing with similar issues may choose to get tested or seek treatment?

I don't claim to know what's in the heart of Sherri Shepherd when she casually mentions HIV as a possible contributor to Eddie Long's weight loss and subsequent death, or the hundreds of social media trolls who suggest that George Michael died of a big disease with a little name. I don't know if their intentions were to exploit society's fear and judgment surrounding those living with HIV or merely to "keep it real" and say what everyone is already thinking. What I do know is what's in my heart, and I thought about HIV both when hearing of George Michael's passing and seeing Eddie Long's pictures. If I didn't mention it for fear of being accused of stigmatizing gay men and HIV, could I be actually contributing to the culture of secrecy surrounding HIV that drives some of this stigma in the first place?

In 2013 I lost a dear friend and mentee from HIV. He had just turned 30 years old. I had no idea he was struggling with the burden of discovering he was HIV-positive while in the throes of his own education and public health work around sexual health. He told me of his status in 2012 by calling me on the phone and telling me he thought he had Kaposi's sarcoma, and that he had ignored it when he found out for fear that people, including me, would be "disappointed" in him. There's not a day that passes that I don't think about him and wonder if I contributed to this stigma he experienced by not checking in on him more frequently, to see if he was taking care of himself and getting tested.

In 2015 I lost another friend and brother who disclosed to me he was HIV-positive just prior to doctors putting him on a breathing machine for a severe case of Pneumocystis pneumonia. He never got off the ventilator and I watched him transition in a hospice center two weeks later. I subsequently discovered that he had been dealing with a series of ailments prior to the pneumonia that he was desperately trying to cover up. Many members of his family suspected it could have been HIV, but no one brought it up for fear of alienating him. He died under the weight of the internalized stigma of HIV, and how acknowledging his HIV status would change the life he knew. His family, meanwhile, sat idly by and compounded this stigma by avoiding the topic altogether and confirming his suspicion that this was not a topic to be discussed. He died not knowing that they would have been okay with his diagnosis. They would have loved and supported him as only a family can do in those circumstances. His cousin told me she would have accompanied him to his clinic visits if he needed the support.

Stigma can be many things. A mark of disgrace or infamy. A stain or reproach, as on one's reputation. HIV stigma can be society-approved, self-inflicted, or perpetrated by bystanders with ill motivations. It can be a metaphorical cancer that eats away at us slowly. Bringing up the topic of HIV has the potential to exacerbate or alleviate this stigma, depending on the intentions of the communicator and how the other party receives it. Be mindful of how and the spirit in which you bring the topic to light. All I know is that I don't wanna return to the days when silence was the only option. PA

DAVID J. MALEBRANCHE, MD, MPH, is a board certified Internal Medicine physician, researcher, and public health activist, and authored the memoir *Standing on His Shoulders*. He provides the doctor's comments found in the drug pages of the HIV Drug Guide.

GETTING THE MOST OUT OF YOUR DRUG GUIDE

Understanding HIV treatment doesn't need to be difficult. Below are tips to help give you the knowledge you need to work with your providers to make empowered, informed choices about your treatment. Medications that are included in the **21st Annual HIV Drug Guide** are the most commonly used drugs in the U.S. that are FDA approved.

There are several changes to this year's HIV Drug Guide that will improve your experience and the way that you use this guide.

DRUG ORDER

When we started this guide 21 years ago, we listed drugs in the order they were approved. There have been several variations since then in how drugs have been listed in the guide as new treatments and new classes of drugs became available. Today, with so many good options out there, we highlight those drugs that are the best options and list them first, followed by commonly prescribed drugs in the five drug classes in alphabetical order. To quickly find your drug, go to page 24. Older drugs that are no longer used or infrequently prescribed are available only online at positivelyaware.com, and the pages for these rarely used drugs are no longer being updated. This includes some of the oldest HIV drugs that either have intolerable side effects or for which there are better options now available.

RECOMMENDATIONS FOR USE

The Department of Health and Human Services (DHHS) and the International AIDS Society-USA (IAS-USA) both publish recommendations for the use of HIV antiretroviral drugs. These recommendations focus on drug regimens more than single medications, but are essential tools that help providers and individuals choose a regimen that's best suited for them. We include information on some of these recommendations on page 14, and at the top of each drug page, as well as the pullout drug chart. DHHS and IAS-USA guidelines are very similar in their recommendations, so for consistency we reference only the DHHS guidelines. For the entire list of recommendations go to aidsinfo.nih.gov or ias-usa.org/guidelines.

DRUG CLASSES AND CO-FORMULATIONS

A **fixed-dose combination** (FDC) combines two or more drugs in one tablet, such as Prezcobix (darunavir/cobicistat). A **single-tablet regimen** (STR) contains drugs from different classes and is a complete regimen in one pill, such as Triumeq (dolutegravir/lamivudine/abacavir). Atripla, Complera, Genvoya, Odefsey, Stribild, and Triumeq are the six single-tablet regimens that are currently available.

When a drug is a co-formulation (combination) of different drugs, the generic names will be separated by slashes—for example, Genvoya is the co-formulation of elvitegravir/cobicistat/emtricitabine/TAF.

Remember that anti-HIV drugs should always be taken in combination using two or more drug classes (for example, an integrase inhibitor plus two non-nukes). While they are not a drug class, single-tablet regimens (STRs) are in their own category. STRs are widely used for first-time treatment and for their convenience, but they are not for everybody. Those who are treatment-experienced or have multi-drug resistance, may not be able to use these STRs and will still have to combine two to three or more single agents from different drug classes, the old-fashioned way.

There are also several non-HIV drugs that are commonly used by people with HIV, which are included in this guide. In addition, there is a Truvada for PrEP (pre-exposure prophylaxis, for prevention) page in this issue.

DRUG NAMES

When a drug is in development and before it's approved, it's first given a **"generic" name** (such as dolutegravir), which health care providers may identify it with even after approval. Once it is approved, it's given its **brand name** (Tivicay is the brand name of dolutegravir), which most people know it by. At medical conferences and in publications you will often see three-character abbreviations used (DTG in the case of dolutegravir). A good rule of thumb is, **brand names are capitalized and generic names are lower case**. Within each drug's page, you will see the drug referred to by any or all of its names. All of each drug's names appear at the top of its page and also on the pullout drug chart, so if you're confused, look them up there!

DRUG PRICE AND ACCESS

The **Average Wholesale Price** (AWP) is a way to compare costs of drugs. It is not necessarily what you would pay if you had to pay the full retail price.

HIV drugs are not cheap, and figuring out how to pay for them can be a challenge. Luckily, there are programs that can help cover all or part of the costs of these medications. Of course many of us take drugs for conditions other than HIV, so in our drug co-pay and patient assistance program chart (see page 63) we include information on drugs used to treat HIV as well as several other non-HIV drugs commonly used in people with HIV.

NAVIGATING YOUR TREATMENT

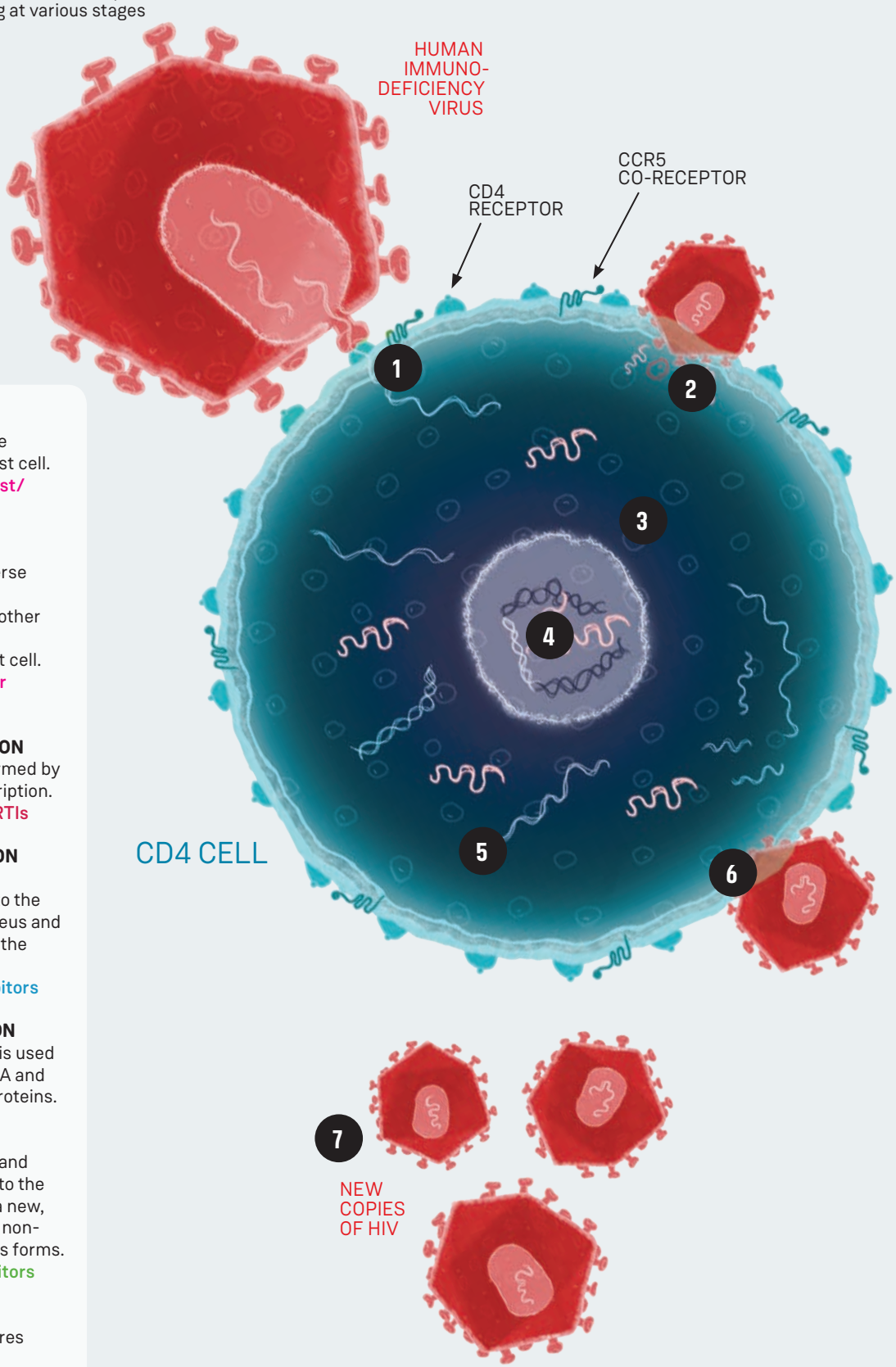
There is a wealth of information available about HIV and the drugs used to treat it. Knowing where to look and understanding some of the basics will help you sort through it all, giving you peace of mind and the knowledge you need to live a better, healthier life with HIV.

FIND IT ONLINE FAST

You can easily read about each drug online by typing the drug's name after our URL. For example, find the Drug Guide's page for Odefsey by typing positivelyaware.com/odefsey.

HIV LIFE CYCLE

Different drug classes interrupt the virus from replicating at various stages



1: BINDING
HIV binds to the surface of a host cell.
CCR5 antagonist/ Entry inhibitor

2: FUSION
HIV's RNA reverse transcriptase, integrase, and other viral proteins fuse to the host cell.
Fusion inhibitor

3: REVERSE TRANSCRIPTION
Viral DNA is formed by reverse transcription.
NRTIs and NNRTIs

4: INTEGRATION
Viral DNA is transported into the host cell's nucleus and integrates into the host's DNA.
Integrase inhibitors

5: REPLICATION
New viral RNA is used as genomic RNA and to make viral proteins.

6: ASSEMBLY
New viral RNA and proteins move to the cell's surface; a new, immature (and non-infectious) virus forms.
Protease inhibitors

7: BUDDING
The virus matures (and becomes infectious) by protease releasing individual proteins.

SOURCE: PUBLIC HEALTH LIBRARY/CDC ILLUSTRATION BY ABBEY DENLINGER

Descovy®
emtricitabine 200mg/
tenofovir alafenamide 25mg tablets

YOU MATTER AND SO DOES YOUR HEALTH

That's why starting and staying on HIV-1 treatment is so important.

What is DESCOVY®?

DESCOVY is a prescription medicine that is used together with other HIV-1 medicines to treat HIV-1 in people 12 years and older. DESCOVY is not for use to help reduce the risk of getting HIV-1 infection. DESCOVY combines 2 medicines into 1 pill taken once a day. Because DESCOVY by itself is not a complete treatment for HIV-1, it must be used together with other HIV-1 medicines.

DESCOVY does not cure HIV-1 infection or AIDS.

To control HIV-1 infection and decrease HIV-related illnesses, you must keep taking DESCOVY. Ask your healthcare provider if you have questions about how to reduce the risk of passing HIV-1 to others. Always practice safer sex and use condoms to lower the chance of sexual contact with body fluids. Never reuse or share needles or other items that have body fluids on them.

IMPORTANT SAFETY INFORMATION

What is the most important information I should know about DESCOVY?

DESCOVY may cause serious side effects:

- **Buildup of an acid in your blood (lactic acidosis),** which is a serious medical emergency. Symptoms of lactic acidosis include feeling very weak or tired, unusual muscle pain, trouble breathing, stomach pain with nausea or vomiting, feeling cold (especially in your arms and legs), feeling dizzy or lightheaded, and/or a fast or irregular heartbeat.
- **Serious liver problems.** The liver may become large and fatty. Symptoms of liver problems include your skin or the white part of your eyes turning yellow (jaundice); dark "tea-colored" urine; light-colored bowel movements (stools); loss of appetite; nausea; and/or pain, aching, or tenderness on the right side of your stomach area.
- **You may be more likely to get lactic acidosis or serious liver problems** if you are female, very overweight, or have been taking DESCOVY for a long time. In some cases, lactic acidosis and serious liver problems have led to death. Call your healthcare provider right away if you have any symptoms of these conditions.
- **Worsening of hepatitis B (HBV) infection.** DESCOVY is not approved to treat HBV. If you have both HIV-1 and HBV and stop taking DESCOVY, your HBV may suddenly get worse. Do not stop taking DESCOVY without first talking to your healthcare provider, as they will need to monitor your health.

What are the other possible side effects of DESCOVY?

Serious side effects of DESCOVY may also include:

- **Changes in body fat,** which can happen in people taking HIV-1 medicines.
- **Changes in your immune system.** Your immune system may get stronger and begin to fight infections. Tell your healthcare provider if you have any new symptoms after you start taking DESCOVY.
- **Kidney problems, including kidney failure.** Your healthcare provider should do blood and urine tests to check your kidneys. Your healthcare provider may tell you to stop taking DESCOVY if you develop new or worse kidney problems.
- **Bone problems,** such as bone pain, softening, or thinning, which may lead to fractures. Your healthcare provider may do tests to check your bones.

The most common side effect of DESCOVY is nausea. Tell your healthcare provider if you have any side effects that bother you or don't go away.

What should I tell my healthcare provider before taking DESCOVY?

- **All your health problems.** Be sure to tell your healthcare provider if you have or have had any kidney, bone, or liver problems, including hepatitis virus infection.
- **All the medicines you take,** including prescription and over-the-counter medicines, vitamins, and herbal supplements. Other medicines may affect how DESCOVY works. Keep a list of all your medicines and show it to your healthcare provider and pharmacist. Ask your healthcare provider if it is safe to take DESCOVY with all of your other medicines.
- **If you are pregnant** or plan to become pregnant. It is not known if DESCOVY can harm your unborn baby. Tell your healthcare provider if you become pregnant while taking DESCOVY.
- **If you are breastfeeding** (nursing) or plan to breastfeed. Do not breastfeed. HIV-1 can be passed to the baby in breast milk.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch, or call 1-800-FDA-1088.

Please see Important Facts about DESCOVY, including important warnings, on the following page.

Ask your healthcare provider if an HIV-1 treatment that contains DESCOVY® is right for you.

GILEAD

Descovy®
emtricitabine 200mg/
tenofovir alafenamide 25mg tablets

(des-KOH-vee)

IMPORTANT FACTS

This is only a brief summary of important information about DESCOVY® and does not replace talking to your healthcare provider about your condition and your treatment.

MOST IMPORTANT INFORMATION ABOUT DESCOVY

DESCOVY may cause serious side effects, including:

- **Buildup of lactic acid in your blood (lactic acidosis)**, which is a serious medical emergency that can lead to death. Call your healthcare provider right away if you have any of these symptoms: feeling very weak or tired, unusual muscle pain, trouble breathing, stomach pain with nausea or vomiting, feeling cold (especially in your arms and legs), feeling dizzy or lightheaded, and/or a fast or irregular heartbeat.
- **Severe liver problems,** which in some cases can lead to death. Call your healthcare provider right away if you have any of these symptoms: your skin or the white part of your eyes turns yellow (jaundice); dark "tea-colored" urine; loss of appetite; light-colored bowel movements (stools); nausea; and/or pain, aching, or tenderness on the right side of your stomach area.
- **Worsening of hepatitis B (HBV) infection.** DESCOVY is not approved to treat HBV. If you have both HIV-1 and HBV, your HBV may suddenly get worse if you stop taking DESCOVY. Do not stop taking DESCOVY without first talking to your healthcare provider, as they will need to check your health regularly for several months.

You may be more likely to get lactic acidosis or severe liver problems if you are female, very overweight, or have been taking DESCOVY or a similar medicine for a long time.

ABOUT DESCOVY

- DESCOVY is a prescription medicine that is used together with other HIV-1 medicines to treat HIV-1 in people 12 years of age and older. DESCOVY is **not** for use to help reduce the risk of getting HIV-1 infection.
- **DESCOVY does not cure HIV-1 or AIDS**. Ask your healthcare provider about how to prevent passing HIV-1 to others.

HOW TO TAKE DESCOVY

- DESCOVY is a one pill, once a day HIV-1 medicine that is taken with other HIV-1 medicines.
- Take DESCOVY with or without food.

POSSIBLE SIDE EFFECTS OF DESCOVY

DESCOVY can cause serious side effects, including:

- Those in the "Most Important Information About DESCOVY" section.
- Changes in body fat.
- Changes in your immune system.
- New or worse kidney problems, including kidney failure.
- Bone problems.

The most common side effect of DESCOVY is nausea.

These are not all the possible side effects of DESCOVY. Tell your healthcare provider right away if you have any new symptoms while taking DESCOVY.

Your healthcare provider will need to do tests to monitor your health before and during treatment with DESCOVY.

BEFORE TAKING DESCOVY

Tell your healthcare provider if you:

- Have or had any kidney, bone, or liver problems, including hepatitis infection.
- Have any other medical condition.
- Are pregnant or plan to become pregnant.
- Are breastfeeding (nursing) or plan to breastfeed. Do not breastfeed if you have HIV-1 because of the risk of passing HIV-1 to your baby.

Tell your healthcare provider about all the medicines you take:

- Keep a list that includes all prescription and over-the-counter medicines, vitamins, and herbal supplements, and show it to your healthcare provider and pharmacist.
- Ask your healthcare provider or pharmacist about medicines that should not be taken with DESCOVY.

GET MORE INFORMATION

- This is only a brief summary of important information about DESCOVY. Talk to your healthcare provider or pharmacist to learn more.
- Go to DESCOVY.com or call 1-800-GILEAD-5
- If you need help paying for your medicine, visit DESCOVY.com for program information.

GILEAD

The art of treating HIV

A look at the benefits of antiretroviral therapy and recommendations

BY **CHRIS M. NGUYEN, PHARMD, AAHIVP**

Without HIV medications, known as antiretroviral therapy (ART), most people living with HIV will go on to develop severe depletion of their CD4 (T-cells), leading to AIDS-related illnesses and premature death. The recommendations on when to start someone on ART and what to treat with has changed over the years due to both availability of strong evidence and potent drug options with minimal side effects.

The Department of Health and Human Services (DHHS) makes guidelines and recommendations on when to treat and what to treat with. Historically, individuals newly diagnosed with HIV present to care already with low CD4 count, and we started ART based on his or her CD4 level.

However, we know that durable viral suppression (being undetectable) using ART improves immune function, reduces the risk for complications and illnesses, and prolongs life. Furthermore, starting someone on ART early while their CD4 is still high better preserves the immune system and allows for more robust CD4 recovery. How well your CD4 bounces back is directly related to your CD4 level when ART is started. That is to say, the higher your CD4 is at the start of treatment, the better CD4 preservation and improvement you will see. Many people who start ART when their CD4 is too low do not see significant CD4 improvements at all, even years after they've been on treatment. For these reasons, individuals vulnerable to HIV infection should get tested regularly and be connected to care as soon as possible if a positive diagnosis is made.

TREATMENT FOR ALL

The DHHS panel has recommended starting ART in all individuals, regardless of CD4 count at diagnosis, since 2012. However, the strength of the recommendation differed based on a person's CD4 level because at that time, we didn't have enough evidence to make a strong recommendation to start ART in people with CD4 above 500 cells/mm3. Recently, results from two large randomized controlled trials (the strongest type of study) definitively demonstrate the benefits of starting ART in those with high CD4 count.

The START and TEMPRANO studies randomized HIV-positive participants to two groups: one group received ART immediately when their CD4 count was still high (more than 500 cells/mm3), and ART was delayed in the second group until their CD4 level dropped. In both studies, there was about a 50% reduction in morbidity and mortality (AIDS and non-AIDS related illnesses or serious events, and death) among individuals who received ART immediately versus those who deferred treatment. The results from these studies allowed the panel to make strong recommendations to start ART in all individuals with HIV regardless of CD4 count.

REDUCING TRANSMISSION

Beyond the benefits to the individual living with HIV, viral suppression using ART significantly reduces the risk of transmission to HIV-negative partners.

The HPTN 052 study of serodiscordant couples (when one partner is HIV-negative and the other HIV-positive) showed a 96% reduction in risk of HIV transmission when the HIV-positive partner is on treatment. Most of the couples in the study were heterosexual.

In the PARTNER study, which included a good number of MSM serodiscordant couples, investigators found no cases of transmission. However, it does not mean that transmission cannot occur, especially for the most risky act (condomless receptive anal intercourse with ejaculation); but the investigators concluded that the risk is very low.

The PARTNER 2 study is underway which will hopefully give more precise estimates of transmission risk in the MSM population. Even though the results of these studies are dramatic, safer sex methods should be practiced, and additional information regarding HIV transmission can be found at aidsinfo.nih.gov.

STARTING THERAPY

The decision to initiate ART should be a conversation between you and your provider, taking into account the known benefits of starting early. The DHHS panel noted that the decision should always include consideration of an individual's other medical conditions and his or her willingness and readiness to initiate therapy. The success of ART is highly dependent on adherence to therapy.

The newer regimens, those recommended by the panel, are well tolerated in general. However, each person may react differently to the same medicine, and some side effects are more common than others. While taking medications, discuss any physical changes or new symptoms with your doctor and pharmacist. Some side effects can be managed or controlled, while others require intervention or medication changes. Some side effects are rare.

One potential reaction when someone starts ART is known as immune reconstitution inflammatory syndrome (IRIS), which may occur as the immune system regains strength and viral load drops following initiation of therapy. Low CD4 at the start of treatment is a risk factor for IRIS, another reason why you should start early. Symptoms of illnesses such as shingles and tuberculosis should be reported to a health care provider immediately. See drug page or package insert for more information.

Start here

HIV drugs are grouped into the following categories—plus, one category for select non-HIV drugs. Drugs listed as ONLINE can be found at positivelyaware.com.

- **STR** — SINGLE-TABLET REGIMEN
- **INSTI** — INTEGRASE STRAND TRANSFER INHIBITOR (INTEGRASE INHIBITOR)
- **PI** — PROTEASE INHIBITOR
- **PKE** — PHARMACO-KINETIC ENHANCER (BOOSTER)
- **NRTI** — NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR ("NUKE")
- **NNRTI** — NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR ("NON-NUKE")
- **EI** — ENTRY INHIBITOR
- **NON-HIV** — NON-HIV DRUG

PAGE	BRAND NAME	GENERIC NAME	DRUG CLASS
ONLINE	Aptivus	tipranavir, or TPV	PI
28	Atripla	efavirenz / emtricitabine / tenofovir DF, or EFV / FTC / TDF	STR
ONLINE	Combivir	lamivudine / zidovudine, or 3TC / AZT	NRTI
29	Complera	rilpivirine / emtricitabine / tenofovir DF, or RPV / FTC / TDF	STR
ONLINE	Crixivan	indinavir, or IDV	PI
39	Descovy	emtricitabine / tenofovir alafenamide, or FTC / TAF	NRTI
46	Edurant	rilpivirine, or RPV	NNRTI
42	Emtriva	emtricitabine, or FTC	NRTI
43	Epivir	lamivudine, or 3TC	NRTI
41	Epzicom	abacavir / lamivudine, or ABC / 3TC	NRTI
35	Evotaz	atazanavir / cobicistat, or ATV / COBI	PI/PKE
ONLINE	Fuzeon	enfuvirtide, T-20, or ENF	EI
25	Genvoya	elvitegravir / cobicistat / emtricitabine / tenofovir alafenamide, or EVG / COBI / FTC / TAF	STR
48	Intelence	etravirine, or ETR	NNRTI
ONLINE	Invirase	saquinavir, or SQV	PI
31	Isentress	raltegravir, or RAL	INSTI
ONLINE	Kaletra	lopinavir/ritonavir, or LPV / RTV	PI
ONLINE	Lexiva	fosamprenavir, or FPV	PI
37	Norvir	ritonavir, or RTV	PKE
30	Odefsey	rilpivirine / emtricitabine / tenofovir alafenamide, or RPV / FTC / TAF	STR
34	Prezcobix	darunavir / cobicistat, or DRV / COBI	PI/PKE
33	Prezista	darunavir, or DRV	PI
ONLINE	Rescriptor	delavirdine, or DLV	NNRTI
ONLINE	Retrovir	zidovudine, AZT, or ZDV	NRTI
36	Reyataz	atazanavir, or ATV	PI
49	Selzentry	maraviroc, or MVC	EI
26	Stribild	elvitegravir / cobicistat / emtricitabine / tenofovir DF, or EVG / COBI / FTC / TDF	STR
47	Sustiva	efavirenz, or EFV	NNRTI
32	Tivicay	dolutegravir, or DTG	INSTI
27	Triumeq	dolutegravir / abacavir / lamivudine, or DTG / ABC / 3TC	STR
ONLINE	Trizivir	abacavir / lamivudine / zidovudine, or ABC / 3TC / AZT	NRTI
40	Truvada	emtricitabine / tenofovir DF, or FTC / TDF	NRTI
38	Tybost	cobicistat, or COBI	PKE
ONLINE	Videx EC	didanosine, or ddI	NRTI
ONLINE	Viracept	nelfinavir, or NFV	PI
ONLINE	Viramune XR	nevirapine, or NVP	NNRTI
44	Viread	tenofovir disoproxil fumarate (tenofovir), or TDF	NRTI
ONLINE	Zerit	stavudine, or d4T	NRTI
45	Ziagen	abacavir, or ABC	NRTI
HIV PREVENTION			
56	Truvada for PrEP	emtricitabine / tenofovir DF, or FTC / TDF	PrEP
NON-HIV DRUGS			
54	Egrifta	tesamorelin for injection	For HIV-related excess belly fat
54	Mytesi	crofelemer	For HIV/AIDS-associated diarrhea
55	Serostim	somatropin (rDNA origin) for injection	For HIV-related wasting

Genvoya

DHHS RECOMMENDED FOR FIRST-LINE USE

elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide, or **EVG/COBI/FTC/TAF**

STANDARD DOSE

One tablet once daily with food. Tablet contains 150 mg of the INSTI elvitegravir boosted by 150 mg cobicistat plus 200 mg emtricitabine and 10 mg tenofovir alafenamide (TAF).

For adults and children 12 years of age and older weighing at least 77 lbs (35 kg).

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Genvoya is not recommended for people with severe kidney problems (CrCl less than 30 mL/minute) or severe liver problems.

MANUFACTURER

Gilead Sciences, Inc.
gilead.com
genvoya.com
(800) GILEAD-5
(445–3235)

AWP

$3,468.65 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the individual drugs contained in Genvoya: Emtriva and Tybost (elvitegravir and TAF are not marketed separately for HIV). Common side effects seen in at least 5% of study participants include nausea, diarrhea, headache, and fatigue. Cobicistat can cause a small, reversible increase in kidney function test (serum creatinine) within the first few weeks of treatment without affecting actual kidney function (see Tybost for more, and reassuring, information).

POTENTIAL DRUG INTERACTIONS

See package insert for the most complete list. Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. Do not take with Atripla, Combivir, Complera, Odefsey, Emtriva, Epivir, Epivir-HBV, Epzicom, Hepsera, Isentress, Kaletra, Norvir, Stribild, Tivicay, Triumeq, Trizivir, Truvada, Descovy, Tybost, Viread, or Vemlidy, since these medications are already in this drug or it has medications from the same drug classes. Separate by at least 2 hours from antacids containing aluminum, magnesium hydroxide, or calcium carbonate. Safe to take with other medications used for heartburn and GERD such as Nexium, Pepcid, Prevacid, Prilosec, Tagamet, and Zantac. Cobicistat has many drug interactions similar to those seen with Norvir. Do not take with cholesterol-lowering drugs containing lovastatin or simvastatin (Advicor, Altoprev, Mevacor, Simcor, Vytorin, Zocor), alfuzosin, carbamazepine, phenobarbital, phenytoin, ergotamine, dihydroergotamine, methylergonovine, oral midazolam, lurasidone, pimozide, Revatio, rifampin, rifabutin, rifapentine, Serevent, triazolam, or St. John's wort. Dose of clarithromycin may need to be reduced based on kidney function. An alternative corticosteroid to systemic dexamethasone should be considered. Risks vs. benefits of using with voriconazole should be assessed. Cholesterol-lowering drugs such as atorvastatin should be used with caution and started at the lowest dose possible. Monitor closely for increased side effects from these medications, such as muscle pain. Concentrations of antidepressants such as trazodone or fluoxetine may be increased, and their doses may need to be reduced. Use with caution and therapeutic monitoring, if available, for antiarrhythmic drugs like digoxin. Genvoya increases levels of nasal/inhaled fluticasone (found in Advair, Flonase, and Flovent) which may lead to symptoms of Cushing's syndrome (such as rounded face). An alternative corticosteroid is recommended. Use caution with beta blockers and calcium channel blockers. Cialis, Levitra, and Viagra levels are increased; doses should not exceed 10 mg Cialis or 2.5 mg Levitra per 72 hours, or 25 mg Viagra per 48 hours. Effectiveness of birth control pills may be decreased; consider using alternative contraception methods. Use with caution with bosentan and immunosuppressants like Prograf, Gengraf, Neoral, and Sandimmune. Reduce Daklinza dose to 30 mg. Taking with Olysio, Viekira Pak, or Zepatier is not recommended. Monitor kidney function more closely with Epclusa.

David J. Malebranche, MD, MPH says: Genvoya (EVG/c/ FTC/TAF) has emerged a highly desirable first-line STR for ARV-naïve patients with CrCl ≥ 30 ml/min. The combination of the long-acting INSTI with the TDF pro-drug TAF and its safer kidney and bone profile has been nothing short of a game-changer. Well-tolerated, easy to take and with no food requirements, Genvoya is non-inferior to its TDF-based brother Stribild, and offers another once-daily option when nephrotoxic and bone debilitating comorbidities are present. Notable side effects are minimal and include nausea, diarrhea, headache, and fatigue. Otherwise it's really hard to find much fault with this rapidly rising STR—it offers the best Stribild has to offer but with fewer side effects.

Activist Matt Sharp says: The new formulation of Gilead's Stribild just substitutes the new TAF for the older TDF, the only real difference between the two single-tablet regimens (aside from a smaller pill for Genvoya). The average wholesale price is the same so there is not an apparent profit motive here, yet truly an opportunity to have the older single-tablet regimen with the newer, better, and most likely safer TAF included in the new tablet. Consideration for use for the first time should be carefully discussed with a knowledgeable HIV treater.

MORE INFORMATION

Genvoya was the first single-tablet regimen to contain tenofovir alafenamide (TAF) instead of tenofovir disoproxil fumarate (TDF), which is found in Stribild. It is one of two single-tablet regimens that can be given to people with impaired kidney function (the other is Odefsey). A study in hemodialysis is underway. In clinical trials, less kidney and bone issues were seen with TAF versus TDF. The TAF substitution also allows Genvoya to be used with the hepatitis C medication Harvoni, which is not recommended with Stribild. Genvoya was studied in patients with kidney impairment and was found to be safe and effective in people with CrCl equal to or greater than 30 mL/min. It was also studied in adolescents ages 12–18 years, and was found to be as effective in getting this patient population to undetectable viral loads as in adults. In two clinical trials comparing Genvoya to Stribild in treatment-naïve patients, Genvoya was non-inferior to Stribild in keeping patients undetectable after 48 weeks. Genvoya also has an FDA indication (use) for people switching from another HIV regimen if they have a viral load less than 50 on a stable regimen for six months and no history of drug resistance to the medications in Genvoya or treatment failure. The indication was granted based on a switch study showing that Genvoya was non-inferior in people with undetectable viral load changing from Atripla, Stribild, or boosted Reyataz/Truvada. People should be checked for hepatitis B before starting therapy (see Emtriva and Viread).

See package insert for more complete information on potential side effects and interactions.

Stribild

DHHS RECOMMENDED FOR FIRST-LINE USE

elvitegravir/cobicistat/emtricitabine/tenofovir DF, or **EVG/COBI/FTC/TDF**

STANDARD DOSE

One tablet once daily with food. Tablet contains 150 mg of the INSTI elvitegravir boosted by 150 mg cobicistat plus 200 mg emtricitabine and 300 mg tenofovir DF (TDF).

For adults and children 12 years of age and older weighing at least 77 lbs (35 kg).

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Dose cannot be adjusted for people with kidney problems. Stribild should not be started in individuals with estimated creatinine clearance (CrCl) less than 70 mL/minute and should be discontinued if CrCl decreases to less than 50 mL/minute. Stribild is not recommended for patients with severe liver problems.

MANUFACTURER

Gilead Sciences, Inc.
gilead.com
stribild.com
(800) GILEAD-5
(445–3235)

AWP

$3,468.65 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the individual drugs contained in Stribild: Emtriva, Viread, and Tybost (elvitegravir is not marketed separately). Common side effects seen in 10% or more of study participants include nausea and diarrhea. Other less common side effects include abnormal dreams and headache. Before taking Stribild, kidney function testing should be conducted and include serum creatinine and serum phosphorus. These measurements should continue to be monitored while taking Stribild. Small changes in kidney function tests can be seen during the first few weeks of treatment, but these changes do not affect actual kidney function (see Tybost for more, and reassuring, information). Before taking Stribild, kidney function testing should be conducted and include serum creatinine and serum phosphorus. Monitoring of these measurements should continue while taking Stribild.

POTENTIAL DRUG INTERACTIONS

See package insert for the most complete list. Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. Do not take with Atripla, Combivir, Complera, Descovy, Emtriva, Epivir, Epivir-HBV, Epzicom, Evotaz, Genvoya, Hepsera, Isentress, Kaletra, Norvir, Odefsey, Prezcobix, Tivicay, Triumeq, Trizivir, Truvada, Tybost, Vemlidy, or Viread, since these medications are already in Stribild or it has medications from the same drug classes. Separate by at least 2 hours from antacids containing aluminum, magnesium hydroxide, or calcium carbonate. Stribild is safe to take with other medications used for heartburn and GERD such as Nexium, Pepcid, Prevacid, Prilosec, Tagamet, and Zantac. Cobicistat has many drug interactions similar to those seen with Norvir. Do not take Stribild with cholesterol-lowering drugs containing lovastatin or simvastatin (Advicor, Altoprev, Mevacor, Simcor, Vytorin, and Zocor), alfuzosin, carbamazepine, phenobarbital, phenytoin, ergotamine, dihydroergotamine, methylergonovine, oral midazolam, pimozide, Revatio, rifampin, rifabutin, rifapentine, Serevent, triazolam, or St. John's wort. An alternative corticosteroid to systemic dexamethasone should be considered. Risks vs. benefits of using Stribild and voriconazole together should be assessed. Cholesterol-lowering drugs such as rosuvastatin and atorvastatin should be used with caution and started at the lowest dose possible. Monitor closely for increased side effects from these medications, such as muscle pain. Concentrations of antidepressants such as trazodone or fluoxetine may be increased by Stribild, and their doses may need to be reduced. Use with caution and therapeutic monitoring, if available, for antiarrhythmic drugs like digoxin. Stribild increases levels of nasal/inhaled fluticasone (found in Advair, Flonase, and Flovent) which may lead to symptoms of Cushing's syndrome (such as rounded face). An alternative corticosteroid is recommended. Use caution with beta blockers and calcium channel blockers. Cialis, Levitra, and Viagra levels are increased; doses should not exceed 10 mg Cialis or 2.5 mg Levitra per 72 hours, or 25 mg Viagra per 48 hours. Effectiveness of birth control pills may be decreased; consider using alternative contraception methods. Use with caution with bosentan and immunosuppressants like Prograf, Gengraf, Neoral, and Sandimmune. Reduce Daklinza dose to 30 mg. Taking with Harvoni, Olysio, Viekira Pak, or Zepatier is not recommended. Monitor kidney function more closely with Epclusa.

David J. Malebranche, MD, MPH says: Stribild (EVG/c/FTC/TDF) is Genvoya essentially, but with a less forgiving kidney and bone profile. Approved almost 5 years ago, it has a bit more history behind it than Genvoya. In randomized controlled trials with ARV-naïve patients, Stribild was non-inferior to both Atripla and ATV/r/TDF/FTC, and with a much more tolerable side effect profile and less discontinuations. It was the first of the STRs with EVG/c as the long-acting INSTI component in it, and providers prescribed it early and often after its approval. In clinical trials and anecdotally, kidney and bone profile markers have shown improvement when switching from Stribild to Genvoya, so it will be interesting to see how clinicians' prescribing practices of Stribild transition as a result.

Activist Matt Sharp says: Really a remarkable achievement from a company that over the years has crafted the four individual drugs to reach this stage—a single-tablet regimen. Whether this is the best option for first-line therapy should be weighed carefully between an experienced doctor and the person making the decision. Genvoya, a newer version substituting the new TAF for older TDF, most likely will replace Stribild due to the safer, smaller TAF.

MORE INFORMATION

Stribild is a DHHS-recommended regimen for HIV treatment-naïve people with CrCl (creatinine clearance) equal to or greater than 70 mL/min. The newer version of this drug, called Genvoya, contains TAF instead of TDF. Data through 144 weeks confirmed that Stribild remained non-inferior to Atripla and Norvir-boosted Reyataz with Truvada. Stribild also has an FDA indication (use) for people switching from another HIV regimen if they have a viral load less than 50 on a stable therapy for six months and no history of drug resistance to the medications in Stribild or treatment failure. The indication was granted based on two switch studies showing that Stribild was non-inferior in people with undetectable viral load changing their PI/Truvada or NNRTI/Truvada regimen. Stribild should not be started in people with severe liver impairment or impaired kidney function (creatinine clearance less than 70 mL per minute), due to the increased potential for toxicity from combining cobicistat with TDF. People should be checked for hepatitis B before starting therapy (see Emtriva and Viread).

See package insert for more complete information on potential side effects and interactions.

Triumeq

DHHS RECOMMENDED FOR FIRST-LINE USE

dolutegravir/abacavir/lamivudine, or **DTG/ABC/3TC**

STANDARD DOSE

One tablet once daily, with or without food, for people with no evidence of INSTI resistance. An additional 50 mg dose of dolutegravir (brand name Tivicay) separated by 12 hours from Triumeq is required for people who have drug resistance to Isentress or elvitegravir (found in Genvoya and Stribild) or are taking certain other medications (Aptivus/Norvir, Lexiva/Norvir, rifampin, carbamazepine, or Sustiva). Tablet contains 50 mg of the INSTI dolutegravir plus 600 mg abacavir and 300 mg lamivudine.

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Dose cannot be adjusted for people with kidney problems. Stribild should not be started in individuals with estimated creatinine clearance (CrCl) less than 70 mL/minute and should be discontinued if CrCl decreases to less than 50 mL/minute. Stribild is not recommended for patients with severe liver problems.

MANUFACTURER

ViiV Healthcare
viivhealthcare.com
triumeq.com
(877) 844-8872

AWP

$3,118.62 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the individual drugs contained in Triumeq: Tivicay, Ziagen, and Epivir. Triumeq is in general well tolerated. Most common side effects that occurred in 2–3% of study subjects are insomnia, headache, and fatigue. A small increase in serum creatinine may be seen, but is usually a benign laboratory finding and not a sign of kidney toxicity. Discontinuation due to neuropsychiatric adverse events or central nervous system side effects may be a new concern; see details reported last year: thebodypro.com/content/78909/dolutegravir-and-the-central-nervous-system-a-top-.html. Recently, suicidal ideation and suicide attempts, as well as lesser central nervous system side effects, have been recognized with dolutegravir and the other INSTIs. Conflicting data suggest a small risk for heart problems when using abacavir-containing regimens in people with high blood pressure, high cholesterol, diabetes, smoking, or a previous heart attack or stroke. The risk should be considered and action taken to reduce risk factors, if possible, before starting treatment. Monitor for signs of hypersensitivity reaction (HSR) to abacavir (may include fever, rash, nausea, vomiting, diarrhea, abdominal pain, fatigue, muscle or joint aches, difficulty breathing, blisters, sores in the mouth, skin peeling, facial swelling, cough, or sore throat), especially in the first six weeks after starting therapy. All individuals prior to starting Triumeq should be given a blood test for HLA-B*5701 (a genetic marker) to identify patients at risk for this reaction. This test is covered by most insurance and also by LabCorp/ViiV (see co-pay chart, page 66). Symptoms of HSR usually worsen, very slowly, with each dose. If HSR occurs or is suspected, Triumeq should be discontinued immediately, and a patient should never be given an abacavir-containing medication again (rechallenged). Liver enzymes should be monitored in people with hepatitis B or C. Stop taking Triumeq if you experience signs of liver problems (yellowing of the skin or whites of the eyes, dark or tea-colored urine, pale-colored bowel movements, nausea or vomiting, loss of appetite, or tenderness on the right side below the ribs).

POTENTIAL DRUG INTERACTIONS

See the individual drugs contained in Triumeq: Tivicay, Ziagen, and Epivir. Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. Do not take with the anti-arrhythmic dofetilide (Tikosyn), due to the potential for serious or life-threatening reaction. Do not take Triumeq with Atripla, Combivir, Complera, Odefsey, Emtriva, Epivir, Epivir-HBV, Epzicom, Isentress, Stribild, Genvoya, Tivicay (unless required), Trizivir, Truvada, Descovy, or Ziagen, since these medications are already in Triumeq or they have medications from the same drug classes. Triumeq should not be taken with Viramune. Intelence decreases dolutegravir levels, so your HIV provider would also need to prescribe Kaletra, boosted Prezista, or boosted Reyataz. Triumeq should be taken two hours before or six hours after taking antacids (like Maalox), the ulcer medication Carafate, iron or calcium supplements, or buffered medications. These medications reduce the absorption of dolutegravir; however, Triumeq can be taken together with iron- or calcium-containing supplements if taken with food. Other acid reducers/heartburn medications (like Prilosec, Pepcid, Zantac, Prevacid) are okay to use. Avoid taking with some seizure medicines (oxcarbazepine, phenobarbital, and phenytoin) or St. John's wort. Limit metformin dose to 1,000 mg/day. Monitor blood sugar when Triumeq and metformin are started or when Triumeq is discontinued.

David J. Malebranche, MD, MPH says: Triumeq (DTG/ABC/3TC) is a unicorn of sorts, as it is the only STR that not only doesn't feature a TDF or TAF backbone, doesn't require a PK booster, and is also the only STR currently with DTG as its INSTI. Similar considerations exist as with ABC by itself—patients must be tested for HLA-B*5701 and proven negative before initiating therapy, and is best for those patients with an HIV RNA less than 100,000 copies/mL. DTG enjoys the same ridiculously tolerable profile as when combined with other agents separately and gives this combination the added benefit of the high barrier to genetic resistance. There have been reports of mild bumps in creatinine and depression issues with DTG that should be clinically monitored while patients are on Triumeq. Ultimately, however, it represents a suitable option for patients with a kidney and bone profile that may make TDF and even TAF-based regimens unfavorable.

Activist Matt Sharp says: Another powerhouse single-tablet regimen is this combination of dolutegravir, abacavir, and lamivudine. No doubt an advance for convenience's sake, yet also no surprise that all three drugs in the combination are made by ViiV Healthcare to compete with Genvoya as a first-line treatment. A plus is that it does not have a booster component, yet may not be recommended for anyone with heart problems. Again, consultation with a knowledgeable HIV doctor to discuss important drug interactions, testing for hypersensitivity to abacavir in the regimen, and other considerations regarding the use of any HIV drug class for the first time is recommended.

MORE INFORMATION

See the individual drugs contained in Triumeq—Tivicay, Ziagen, and Epivir as well as Epzicom (Ziagen/Epivir)—for more information. Triumeq is one of the recommended initial regimens in U.S. HIV treatment guidelines, and is the only single-tablet regimen that contains Epzicom as the NRTI backbone. Dolutegravir in studies thus far seems to have a high barrier to resistance similar to protease inhibitors. Triumeq has relatively few drug interactions and is well tolerated. Check for hepatitis B before starting therapy and if Triumeq is discontinued monitor hepatitis B (HBV) closely (see Epivir). Late last year, ViiV Healthcare reported non-inferiority at 48 weeks for a two-drug combination of dolutegravir and rilpivirine (Edurant) in people switched from three or four drug regimens, calling SWORD-1 and SWORD-2 the "first phase III studies to show efficacy of two-drug regimen as maintenance therapy." Participants had to have undetectable viral load at the time of the switch and could not have drug resistance to either of the two medications. The regimen may be approved this year.

See package insert for more complete information on potential side effects and interactions.

Atripla

DHHS ALTERNATIVE

efavirenz/emtricitabine/tenofovir disoproxil fumarate, or **EFV/FTC/TDF**

STANDARD DOSE

One tablet once daily on an empty stomach, preferably at bedtime. Tablet contains 600 mg of the NNRTI efavirenz plus 200 mg emtricitabine and 300 mg tenofovir DF (TDF).

For adults and children 12 years of age and older weighing at least 88 lbs.

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Do not split or crush the tablet. Dose cannot be adjusted for people with kidney problems and Atripla should not be used in people with moderate or severe kidney or liver impairment.

MANUFACTURERS

Bristol-Myers Squibb
bms.com
atripla.com
(800) 321-1335

Gilead Sciences, Inc.
gilead.com
(800) GILEAD-5
(445–3235)

AWP

$2,936.47 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the individual drugs contained in Atripla—Sustiva, Emtriva, and Viread. Use with caution in individuals with depression or other psychiatric issues who are not under a psychiatrist's care. A 2014 study reviewed four previously published AIDS Clinical Trials Group (ACTG) studies regarding efavirenz and suicidal ideation and re-stressed the fact that efavirenz has an association with suicidality, and should be used with caution in patients with severe or uncontrolled depression and/or a history of suicidality. Common side effects may include dizziness, abnormal or vivid dreams, difficulty concentrating, rash, diarrhea, nausea, fatigue, headache, and insomnia. These side effects may go away after a few weeks. Kidney function should be assessed before initiating treatment and throughout therapy as determined by a provider. Women should not become pregnant on efavirenz (in Atripla) or for 12 weeks after discontinuation, because of the slight risk of a serious birth defect (greatest in the first trimester). However, because the birth defect risk is limited to the first 13 weeks of pregnancy and pregnancy is rarely recognized before six weeks, the recommendation is that women in their first trimester continue taking efavirenz as long as their viral load remains undetectable; however, efavirenz should only be used if the potential benefit outweighs the potential risk (as when other treatment options are not available). The efavirenz in Atripla can cause a false positive for marijuana on certain drug tests. A more specific confirmatory test can be done.

POTENTIAL DRUG INTERACTIONS

See the individual drugs contained in Atripla: Sustiva, Emtriva, and Viread. Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not, as there are many other drug interactions which are not listed here. Do not take Atripla with Combivir, Complera, Odefsey, Edurant, Emtriva, Epivir, Epivir-HBV, Epzicom, Hepsera, Intelence, Rescriptor, Stribild, Genvoya, Sustiva, Triumeq, Trizivir, Truvada, Descovy, Viramune, Viread, or Vemlidy, since these medications are already in Atripla or they have medications from the same drug classes. Atripla should not be taken with voriconazole, ergot derivatives, midazolam, pimozide, triazolam, bepridil, or St. John's wort. No dose adjustment of Atripla needed with Sovaldi or Harvoni. If Atripla is taken with Harvoni, tenofovir (Viread) levels should be monitored due to potential increased tenofovir levels and risk of tenofovir toxicity. Use with caution. Increase dose of Daklinza to 90 mg when used with Atripla. Atripla should not be taken with Epclusa, Olysio, Viekira Pak, or Zepatier.

David J. Malebranche, MD, MPH says: The first NNRTI-based STR to come on the market back in 2006, Atripla (EFV/FTC/TDF) has been a sturdy option for ARV-naïve patients for the past decade. Problems with a low genetic barrier to resistance among the EFV component and its significant neurological and psychiatric side effects have dampened enthusiasm for Atripla in recent years. That, combined with the approval of several newer, safer, and more robust STRs has pushed Atripla lower down the totem pole of desirable first line regimens for ARV-naïve patients. Depending on your geographic region and institutional formulary, you can still find Atripla in heavy rotation in some contexts, but its star is fading fast.

Activist Matt Sharp says: For years Atripla was the breakthrough drug, becoming the number one selling HIV drug as well as the most recommended by the DHHS antiretroviral guidelines. It allowed people taking it the first opportunity to take just one regimen only once a day, which was a godsend after taking a gazillion pills several times a day. Beautiful, except for one thing: Sustiva. A series of central nervous system side effects—which to be fair were tolerated by some people—along with the introduction of once-daily integrase inhibitors dethroned its royal highness. Looking back at HIV drug history, questions arise as to why some development decisions were made in the first place. In my humble opinion, using Sustiva in this first STR may have been more of a market-driven decision. No doubt it led to newer and better STRs available today.

MORE INFORMATION

Atripla was downgraded from recommended to alternative regimen in the DHHS HIV treatment guidelines in 2015 based on a high rate of central nervous system side effects and a possible association with suicidality. Most treatment-experienced people (those who've already been on HIV therapy) may not be able to use Atripla due to having developed drug resistance (when their medications may no longer work against the virus). Drug resistance most commonly occurs when people don't take their HIV medicine as prescribed, but some may also be infected with a drug-resistant virus against which some (or all) of the medications in Atripla will not work. Be careful when stopping Atripla, so that you avoid the rapid development of HIV resistance to it—check with your provider or pharmacist first. Use of tenofovir disoproxil fumarate (in Atripla) must be monitored in people with underlying kidney problems. In this co-formulation, the Viread and Emtriva dose cannot be adjusted. Therefore, Atripla should not be used in people with moderate to severe kidney problems. Check for hepatitis B before starting therapy (see Emtriva).

See package insert for more complete information on potential side effects and interactions.

Complera

DHHS ALTERNATIVE ONLY IF
HIV RNA < 100,000 c/ml AND CD4 > 200 CELLS/mm^3

rilpivirine/emtricitabine/tenofovir disoproxil fumarate, or **RPV/FTC/TDF**

STANDARD DOSE

One tablet once daily, with a standard meal. See below. Tablet contains 25 mg of the NNRTI rilpivirine plus 200 mg emtricitabine and 300 mg tenofovir DF (TDF).

Nutritional drinks, even high-calorie protein shakes or products like Ensure, should not be used in place of a meal where you chew the food. Taken with a protein shake, rilpivirine levels were still half of what they are with a meal.

Take missed dose as soon as possible, unless it's closer to the time of your next dose. Do not double up on your next dose. Dose cannot be adjusted for people with kidney problems and Complera should not be used in people with moderate or severe kidney impairment or severe liver impairment.

MANUFACTURERS

Gilead Sciences, Inc.
gilead.com
complera.com
(800) GILEAD-5
(445–3235)

Janssen Therapeutics
janssentherapeutics.com
(800) JANSSEN
(526-7736)

AWP

$3,009.29 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the individual drugs contained in Complera—Edurant and Truvada. Moderate to severe side effects are uncommon. Insomnia, headache, and depressive disorders (depression, negative thoughts, suicidal thoughts or actions) were each seen in 2% of study participants. Cases of rash and increased liver enzymes have also been reported with regimens containing rilpivirine (in Complera and Odefsey).

POTENTIAL DRUG INTERACTIONS

Do not take this drug with Atripla, Combivir, Descovy, Edurant, Emtriva, Epivir, Epivir-HBV, Epzicom, Genvoya, Hepsera, Intelence, Odefsey, Rescriptor, Stribild, Sustiva, Triumeq, Trizivir, Truvada, Viramune, Vemlidy, or Viread, since Complera contains these medications or has medication from the same drug classes. Tell your provider or pharmacist about all medications, herbal products, and supplements you are taking or thinking of taking, prescribed or not, as there are many other drug interactions which are not listed here. Proton pump inhibitors (PPIs, stomach acid drugs like Nexium, Prevacid, Prilosec, etc.) can't be taken with Complera. Antacids containing aluminum, magnesium hydroxide, or calcium carbonate can be taken at least two hours before or at least four hours after a Complera dose. Acid reducing drugs like Pepcid, Tagamet, and Zantac can be taken at least 12 hours before or at least four hours after a Complera dose. Do not take Complera with carbamazepine, oxcarbazepine, phenobarbital, phenytoin, rifampin, rifapentine, or the herb St. John's wort (other herbs have not been studied with Complera, but use caution if planning to take any herbs). Rifabutin must be taken with an extra Edurant tablet in addition to Complera. Do not take with more than one dose of the injectable steroid dexamethasone (sometimes given in the ER or hospital). Use caution if used with fluconazole, itraconazole, ketoconazole, posaconazole, and voriconazole. Use azithromycin when possible instead of the antibiotics clarithromycin, erythromycin, or telithromycin, because these drugs increase rilpivirine levels, which can increase the risk for side effects. Reduced methadone levels can be seen and while dose adjustments are not necessary, it is recommended to monitor for withdrawal. Complera may be taken with Daklinza, Harvoni, Olysio, Sovaldi, and Zepatier. Monitor for tenofovir toxicities with Epclusa. Complera cannot be taken with Viekira Pak.

MORE INFORMATION

Complera was downgraded from recommended to alternative regimen in the DHHS HIV treatment guidelines in 2015. Complera can be difficult to take because of its food requirement and drug interactions, and excellent adherence is critical. Moreover, the risk of virologic failure (not achieving undetectable viral load) is greater with rilpivirine than with efavirenz in treatment-naïve people starting with viral loads greater than 100,000 copies or with a CD4 count less than 200 according to the studies ECHO and THRIVE. In contrast, the STaR study, which compared the two single-tablet regimens Complera and Atripla instead of the components, showed that the risk of virologic failure was greater with Complera only in those with a viral load of 500,000 or more. In the STaR study, Complera was better tolerated than Atripla, with only 3% of study participants stopping Complera due to a side effect compared to 9%, and had significantly lower cholesterol elevations. Central nervous system and psychiatric events were the most common side effects, but higher in the Atripla group.

Complera can also be used in those with undetectable viral loads (less than 50) who are switching from another regimen and have never had treatment failure before. Concerns about switching from Atripla to Complera were eased when decreases in Complera levels were only seen in the first few weeks of a 12-week study (when Atripla levels were still high enough to be effective against HIV), and participants maintained their undetectable viral loads. Complera pills are smaller in size than Atripla. Check for hepatitis B before starting therapy (see Emtriva and Viread). Two of the components in Complera also work against hepatitis B (HBV); HBV/HIV co-infected patients should be monitored closely if Complera is discontinued, because of the risk of flare-ups. See package insert for more information about side effects and drug interactions.

David J. Malebranche, MD, MPH says: Complera (RPV/FTC/TDF) emerged as a more well-tolerated NNRTI-based STR in 2011, and found a niche in patients who had difficulty with the side effects of Atripla and EFV-based regimens. The main reason why it doesn't enjoy "recommended" status among ARV regimens nowadays surrounds the issues of virologic failure among patients with HIV RNA ≥ 100,000 copies/ml and the calorie food requirement when taking it. While non-inferiority to EFV is attractive, time will only tell how Complera fares in the current climate of INSTI-based STR and combination ARV treatment.

Activist Matt Sharp says: This kinder, gentler combination drug was intended as a competitor to Atripla (which includes the older neurotoxic drug Sustiva). However, among the issues with Complera are that it is not as potent as Atripla and is not recommended for those with viral loads greater than 100,000. See Odefsey, a newer form of the drug that includes the improved TAF component, now approved and available.

Odefsey

DHHS ALTERNATIVE ONLY IF
HIV RNA < 100,000 c/ml AND CD4 > 200 CELLS/mm^3

rilpivirine/emtricitabine/tenofovir alfenamide, or **RPV/FTC/TAF**

STANDARD DOSE

One tablet once daily, with a standard meal. See below. Tablet contains 25 mg of the NNRTI rilpivirine plus 200 mg emtricitabine and 25 mg tenofovir alafenamide (TAF).

Nutritional drinks, even high-calorie protein shakes or products like Ensure, should not be used in place of a meal where you chew the food. Taken with a protein shake, rilpivirine levels were still half of what they are with a meal.

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Dose cannot be adjusted for people with kidney problems and this drug should not be used in people with severe kidney or liver impairment.

MANUFACTURERS

Gilead Sciences, Inc.
gilead.com
odefsey.com
(800) GILEAD-5
(445–3235)

Janssen Therapeutics
janssentherapeutics.com
(800) JANSSEN
(526-7736)

AWP

$3,009.29 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

The following side effect profile is based on Edurant and Descovy. See the drugs contained in this medication—Edurant and Descovy. Moderate to severe side effects are uncommon: insomnia, headache, and depressive disorders (depression, negative thoughts, suicidal thoughts or actions) were each seen in 2% of study participants on rilpivirine-containing regimens. Cases of rash and increased liver enzymes have also been reported with regimens containing rilpivirine. The most common side effect seen in clinical trials with Descovy (greater than 10%) is nausea.

POTENTIAL DRUG INTERACTIONS

Do not take this drug with Atripla, Combivir, Complera, Edurant, Emtriva, Epivir, Epivir-HBV, Epzicom, Descovy, Genvoya, Hepsera, Intelence, Stribild, Sustiva, Triumeq, Trizivir, Truvada, Vemlidy, or Viread, since this drug contains these medications or has medication from the same drug classes. Tell your provider or pharmacist about all medications, herbal products, and supplements you are taking or thinking of taking, prescribed or not, as there are many other drug interactions which are not listed here. Proton pump inhibitors (PPIs, stomach acid drugs like Nexium, Prevacid, Prilosec, etc.) can't be taken with rilpivirine. Antacids containing aluminum, magnesium hydroxide, or calcium carbonate can be taken two hours before or four hours after rilpivirine. Acid reducing drugs like Pepcid, Tagamet, and Zantac can be taken 12 hours before or four hours after a dose. Do not take with carbamazepine, oxcarbazepine, phenobarbital, phenytoin, rifampin, rifapentine, or the herb St. John's wort (other herbs have not been studied with this medication, but use caution if planning to take any herbs). Taking Odefsey with rifabutin is not recommended. Do not take with more than one dose of the injectable steroid dexamethasone (sometimes given in the ER or hospital). Use caution if used with fluconazole, itraconazole, ketoconazole, posaconazole, and voriconazole. Use azithromycin when possible instead of the antibiotics clarithromycin, erythromycin, or telithromycin, because these drugs increase rilpivirine levels, which can increase the risk for side effects. Reduced methadone levels can be seen and while dose adjustments are not necessary, it is recommended to monitor for withdrawal. May be taken with Daklinza, Harvoni, Olysio, Sovaldi, Zepatier, or Epclusa. Cannot be taken with Viekira Pak.

David J. Malebranche, MD, MPH says: Odefsey (RPV/FTC/TAF) is essentially Complera, but with a safer kidney and bone profile than Complera—the only difference is the switching of TAF for TDF in this STR. Gilead released news in July 2016 declaring that Odefsey had met its objectives in a randomized clinical trial that set out to determine the efficacy and safety of switching from RPV/FTC/TAF (Complera) or EFV/FTC/TAF (Atripla) to RPV/FTC/TAF (Odefsey). They found that at 48 weeks, Odefsey was non-inferior to both Complera and Atripla when it came to maintaining viral suppression (HIV RNA less than 100,000 copies/mL). Encouraging news which should bode well for the newest TAF-based STR, when clinicians seek a safer alternative to which they can switch their Complera patients for improved bone and kidney health.

Activist Matt Sharp says: This newest HIV drug with the oddest name ever was approved in 2016. It is essentially another replacement drug in which the older TDF component was replaced by the newer TAF, so another opportunity to have the older STR with the newer, better and most likely safer TAF in the new tablet, but similar issues remain regarding its recommendations for use as with Complera. (See Complera.)

MORE INFORMATION

Odefsey is one of two single-tablet regimens (the other is Genvoya) that contains TAF instead of TDF. In clinical trials, fewer kidney and bone issues were seen with TAF versus TDF. This regimen was FDA approved based on bioequivalency data (showing similar drug levels when compared to an established drug). Rilpivirine-containing regimens can be difficult to take because of its food requirement and drug interactions, and excellent adherence is critical. Moreover, the risk of virologic failure (not achieving undetectable viral load) is greater with rilpivirine than with efavirenz (in Atripla) in treatment-naïve people starting with viral loads greater than 100,000 copies or with a CD4 count less than 200 according to the studies ECHO and THRIVE. See Edurant for more information. Check for hepatitis B before starting therapy (see Emtriva). Two of the components in this medication also work against hepatitis B (HBV), thus patients who have both HIV and HBV should be monitored closely if this drug is discontinued, because of the risk of flare-up.

See package insert for more information on potential side effects and interactions.

Isentress

DHHS RECOMMENDED FOR FIRST-LINE USE

raltegravir, or **RAL**

STANDARD DOSE

One 400 mg film-coated tablet twice daily, with or without food, for adults and children weighing at least 55 lbs (25 kg).

Take missed dose as soon as possible, unless it's closer to the time of your next dose. Do not double up on your next dose.

Pediatric formulations are available as an oral suspension and chewable tablet. Dosing based on weight for children less than 55 lbs. The banana-flavored suspension may be used for children ages four weeks and up, weighing at least 7 lbs. (3 kg). The chewable tablet, which may also be swallowed, is available in a 25 mg or 100 mg banana-orange-flavored tablet, and may be taken with or without food. The chewable tablets and oral suspension are not bioequivalent to the film-coated tablets; therefore, do not substitute chewable tablets or oral suspension for film-coated tablets.

MANUFACTURER

Merck and Co.
isentress.com
(800) 622–4477

AWP

$1,667.52 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

In general, very well tolerated with infrequent side effects. Those reported in 3–4% of study subjects include insomnia, nausea, and headache. The side effect profile in children is comparable to adults. Isentress may cause elevated levels of creatine kinase (a muscle enzyme). Inform your provider or pharmacist if you have a history of rhabdomyolysis, myopathy, or increased creatine kinase, or if you also take medications that may contribute to these conditions such as statins, fenofibrate, or gemfibrozil. Contact your health care provider if you experience dark or tea-colored urine, or if you experience unexplained muscle pain, tenderness, or weakness. Increases in ALT, AST, and total bilirubin (signs of liver toxicity) have been seen in around 8% of people taking Isentress, especially those co-infected with hepatitis B or C. Although very rarely seen, severe and potentially fatal skin and hypersensitivity (allergic) reactions including Stevens-Johnson Syndrome have been reported. Seek medical attention and immediately stop taking Isentress and your other HIV medications if you develop a rash associated with any of the following symptoms: fever; general ill feeling; extreme tiredness; muscle or joint aches; blisters; oral lesions; swelling of the eyes, lips, mouth, or face; difficulty breathing; and/or signs and symptoms of liver problems (such as yellowing of the skin or whites of the eyes; dark or tea-colored urine; pale stools/bowel movements; nausea; vomiting; loss of appetite; or pain, aching, or sensitivity on the right side below the ribs). Chewable tablets contain phenylalanine, which can be harmful to patients with phenylketonuria.

POTENTIAL DRUG INTERACTIONS

Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. If used with rifampin, increase dose of Isentress to 800 mg twice a day. Remember to decrease the Isentress dose back to 400 mg twice a day when you finish taking rifampin. There are no data on dosing of the chewable tablets with rifampin. There is no need to increase the Isentress dose with rifabutin. Avoid Gaviscon and other antacids containing aluminum or magnesium. Calcium-containing antacids like Tums (calcium carbonate) can be used. Other acid reducers (such as Pepcid, Zantac, Prilosec, and Prevacid) are okay to use. There is no interaction with methadone. Isentress can be used with Daklinza, Harvoni, Olysio, Sovaldi, Viekira Pak, Zepatier, or Epclusa.

David J. Malebranche, MD, MPH says: Raltegravir (RAL) was the first INSTI approved for use in ARV-naïve and ARV-experienced patients. Before DTG came on the market and EVG was formulated with STRs, RAL offered a more tolerable alternative to previously side effect-laden NNRTI and PI-based regimens. RAL competes well when combined with dual nuke backbones of ABC/3TC and TDF/FTC, and was found to be superior in virologic outcomes when stacked up against EFV, DRV/r, and ATV/r. Unfortunately, RAL has to be dosed twice a day due to its pharmacokinetics, which proved to be an adherence bummer for many patients, and over time studies found a low genetic barrier to resistance. Issues around the potential for suicidality plague RAL as will all the INSTIs, so close mental health monitoring is required. Previously a prime consideration for ARV-naïve patients, now RAL has taken a back seat to regimens featuring DTG or STRs containing EVG.

Activist Matt Sharp says: In full disclosure Isentress along with a new boosted protease inhibitor and a frequently prescribed nucleoside analogue saved my life. I was the second person enrolled in the expanded access program for this long-awaited first integrase inhibitor, and I waited until the new boosted PI became available to create an effective force against my highly resistant virus. Over 10 years later it worked so well on my beaten-up resistant virus that I remain undetectable. It is, however, taken twice daily. Activists, including myself, persuaded the company to painstakingly develop a once-daily version, which at first appeared impossible. But this year a new once-daily version will be up for approval. Almost completely free of side effects, and very potent, it remains a powerhouse, especially now, if approved, in a once-daily option. Consideration for use for the first time should be carefully discussed with a knowledgeable HIV treater.

MORE INFORMATION

According to DHHS HIV treatment guidelines, all INSTIs on the market are recommended as initial drugs. A new, once-daily formulation of Isentress is expected to be approved this year. Long-term Isentress data show efficacy with great tolerability in both first-time therapy and in treatment-experienced people with resistance to other antiretroviral drug classes. When taken with Truvada, it was found to be non-inferior in efficacy to and better tolerated than Atripla. When compared with a boosted-PI or NNRTI regimen, treatment-naïve individuals achieved faster viral suppression on INSTIs such as Isentress. For combined virologic efficacy and tolerability, Isentress was shown to be superior to two boosted-PI regimens. DHHS guidelines note drawbacks with the use of Isentress: twice-a-day dosing and a lower barrier to drug resistance than boosted PIs. Greater tolerability may help overcome those issues and result in greater adherence. A 1,200 mg once-daily Isentress tablet is under development, which would help improve adherence and would offer another once-daily INSTI option. Adherence is important because of the drug's short half-life and its low genetic barrier to drug resistance (it may only take very few missed doses for this medication to stop working). If resistance to Isentress develops, elvitegravir (part of Genvoya and Stribild) will likely not work. However, Tivicay, part of the recently introduced single-tablet regimen Triumeq, may still be an effective option due to Tivicay's higher barrier for resistance. In 2015, Isentress was listed as a preferred drug in HIV treatment guidelines for pregnancy. See package insert for more complete information on potential side effects and interactions.

Tivicay

DHHS RECOMMENDED FOR FIRST-LINE USE

dolutegravir, or **DTG**

STANDARD DOSE

One 50 mg tablet once daily, with or without food, for people on HIV therapy for the first time (treatment-naïve) or treatment-experienced people who have never taken an INSTI. One 50 mg tablet twice daily, with or without food, for people who have drug resistance to Isentress or elvitegravir (found in Genvoya and Stribild) or who have suspected resistance, or are taking certain other medications (Aptivus/Norvir, Lexiva/Norvir, rifampin, carbamazepine, or Sustiva).

Tivicay is approved for adults and pediatric patients weighing at least 66 pounds, but a pediatric formulation is being studied in children 6 weeks and older.

Take missed dose as soon as possible, unless it is within 4 hours of your next dose, then skip the missed dose. Do not double up on your next dose. Not recommended for people with severe liver impairment. Use with caution in people with severe kidney impairment who have INSTI drug resistance or suspected resistance, because Tivicay levels may be decreased.

MANUFACTURER

ViiV Healthcare
viivhealthcare.com
(877) 844-8872

AWP

$1,842.82 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

In general, well tolerated with infrequent side effects. The most common moderate to severe side effects in clinical studies were insomnia (3%), headache (2%), and fatigue (2%). Mild insomnia was seen in 7% of participants in one study. Discontinuation due to neuropsychiatric adverse events or central nervous system side effects may be a new concern; see details reported last year: thebodypro.com/content/78909/dolutegravir-and-the-central-nervous-system-a-top-.html. Recently, suicidal ideation and suicide attempts, as well as lesser central nervous system side effects, have been recognized with dolutegravir and the other INSTIs. Rarely, hypersensitivity (an allergy-like reaction) may occur. Stop taking Tivicay if signs or symptoms of hypersensitivity occur (including but not limited to severe rash or rash with: a fever, feeling ill, muscle or joint aches, blisters or skin peeling, blisters or sores in the mouth, redness or swelling of the eyes, facial swelling, signs and symptoms of liver problems (such as yellowing of the skin or whites of the eyes, dark or tea colored urine), angioedema (swelling under the skin), and difficulty breathing). Tivicay is associated with a small laboratory increase in creatinine (a marker of kidney function) but Tivicay does not affect kidney function or cause kidney toxicity. Liver enzymes should be monitored in people with hepatitis B or C and taking Tivicay. Stop taking Tivicay if you experience signs of liver problems (yellowing of the skin or whites of the eyes; dark or tea-colored urine; pale-colored bowel movements; nausea or vomiting; loss of appetite; and pain, aching, or tenderness on the right side below the ribs).

POTENTIAL DRUG INTERACTIONS

Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. Do not take with the anti-arrhythmic dofetilide (Tikosyn), due to the potential for serious or life-threatening reaction. Intelence decreases Tivicay levels by 88%; the addition of Kaletra, boosted Prezista, or boosted Reyataz is required. Tivicay should be taken two hours before or six hours after taking laxatives or antacids, the ulcer medication sucralfate, oral iron or calcium supplements, or buffered medications. When taken together, these medications can reduce the absorption of Tivicay; however, it can be taken with iron- or calcium-containing supplements if taken together with food. Acid reducers (Pepcid, Zantac) and proton pump inhibitors (such as Prilosec, Prevacid, Protonix, Nexium) are okay to use. Avoid taking with Viramune, oxcarbazepine, phenytoin, phenobarbital, and St. John's wort. Metformin levels are increased by Tivicay and a maximum metformin dose of 1,000 mg per day is recommended when starting either metformin or Tivicay. Use alternatives to rifampin, carbamazepine, efavirenz, Aptivus/Norvir, and Lexiva/Norvir when possible in people with INSTI drug resistance or clinically suspected resistance. Should be okay to take with Daklinza, Epclusa, Harvoni, Olysio, Sovaldi, Viekira Pak, or Zepatier.

David J. Malebranche, MD, MPH says: Dolutegravir (DTG) has emerged as a clinician's dream, primarily due to its higher genetic barrier to resistance than EVG or RAL, once-a-day dosing and ability to be taken with or without food. It is incredibly well tolerated with a favorable side effect profile, and has been proven in several randomized clinical trials to be non-inferior to comparator INSTI, NNRTI, and PI-based regimens in maintaining an HIV RNA ≤ 50 copies/ml. Watch for rises in serum creatinine within the first 4 weeks of treatment and DTG can increase metformin levels two-fold, so monitor closely with patients who are diabetic. Finally, there are reports of reduced absorption with cation-containing antacids or laxatives, so DTG should be taken 2 hours before or 6 hours after use of these common meds. The future is bright for DTG—expect continued use in combinations and inclusion in upcoming STR formulations. Yeah, it's that good.

Activist Matt Sharp says: This second-generation integrase inhibitor is an important drug because it appears to work in those who developed specific integrase-resistant mutations. Widely used, but possible market competition from the Isentress new once-daily option that will be appearing soon at a theatre near you. Consideration for use for the first time should be carefully discussed with a knowledgeable HIV treater.

MORE INFORMATION

According to DHHS HIV treatment guidelines, all INSTIs on the market are recommended as initial drugs. Tivicay is a second-generation INSTI—it may work in many individuals whose virus has developed resistance to the other drugs in its class (Isentress, Genvoya, and Stribild), but it needs to be dosed twice daily in these people. Tivicay is also part of the single-tablet regimen Triumeq. In clinical studies to date, Tivicay seems to have a high barrier to resistance, similar to the protease inhibitors. Drug resistance has not been seen in treatment-naïve people (those on HIV therapy for the first time) whose therapy with Tivicay has stopped working; this potentially gives them more options for future treatment. In various studies in this group, Tivicay has been shown to be superior to Atripla and Prezista/Norvir, mainly due to tolerability. It also outperformed Isentress in treatment-experienced patients naïve to INSTIs. The tiny PADDLE study of Tivicay plus Epivir renews long-lost hope that two drugs may work well as an HIV regimen. It showed that 18 of 20 patients maintained undetectable viral load out to 48 weeks. The two-drug combination may reduce cost and toxicity, and may be a good option for those who are not candidates for abacavir or tenofovir. See Epivir for information on generics. Late last year, ViiV Healthcare reported non-inferiority at 48 weeks for a two-drug combination of dolutegravir and rilpivirine (Edurant) in people switched from three or four drug regimens, calling SWORD-1 and SWORD-2 the "first phase III studies to show efficacy of two-drug regimen as maintenance therapy." Participants had to have undetectable viral load at the time of the switch and could not have drug resistance to either of the two medications. The two drugs will be co-formulated into one tablet, and the company plans to file for FDA approval this year.

See package insert for more complete information on potential side effects and interactions.

Prezista

DHHS RECOMMENDED FOR FIRST-LINE USE

darunavir, or **DRV**

STANDARD DOSE

One 800 mg tablet with 100 mg Norvir or 150 mg Tybost once daily with food for first-time therapy and treatment-experienced adults without Prezista-related resistance. One 600 mg tablet with 100 mg Norvir twice daily with food for pregnant women and those whose HIV therapy has failed in the past and who have at least one Prezista-related resistance mutation. Prezista should never be taken without Norvir or Tybost. 75 mg, 150 mg, and 300 mg tablets available for children older than three, dose based on weight.

An oral suspension for children three and older and adults who can't swallow pills is available.

See the package insert for specific dose of oral suspension based on weight. As with the tablet, Prezista oral suspension needs to be taken with Norvir or Tybost.

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose.

MANUFACTURER

Janssen Therapeutics
prezista.com
(800) JANSSEN
(526-7736)

AWP

$1,757.77 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

As Prezista contains a sulfa component, use with caution in patients with sulfa allergies. Most common side effects may include diarrhea, nausea, headache, rash, vomiting, and abdominal pain. Measure liver function before starting and then monitor, with perhaps closer monitoring for those with underlying liver problems, especially during the first several months. No dose adjustment necessary with mild to moderate liver disease, but Prezista/Norvir is not recommended for those with severe liver impairment. While very rare, severe rash (in less than 0.4% of those taking it), accompanied in some cases by fever and/or elevations of AST/ALT (liver enzymes), can be life-threatening. Seek medical attention immediately. When used with Tybost a small increase in serum creatinine (SCr) may be seen which does not translate to a decrease in kidney function, and Tybost is not recommended in individuals with a creatinine clearance less than 70 mL/min if used in regimens containing tenofovir disoproxil fumarate (TDF).

POTENTIAL DRUG INTERACTIONS

See package insert for the most complete list of interactions. Drug interactions of Prezista/Norvir may be different than those for Prezista/Tybost. Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. Do not take with alfuzosin, dronedarone, colchicine (in patients with kidney or liver impairment), ranolazine, pimozide, ergot derivatives, triazolam, oral midazolam, rifampin, Revatio, Xarelto, or St. John's wort. May decrease levels of phenytoin and phenobarbital, and increase levels of carbamazepine; levels should be monitored. Reduced dose of rifabutin is recommended. Do not use lovastatin or simvastatin, or co-formulations containing these drugs (Advicor and Vytorin), for the treatment of high cholesterol. Cholesterol-lowering alternatives are rosuvastatin, atorvastatin (should not exceed 20 mg a day), pitavastatin, and pravastatin, but should be used with caution and started at the lowest dose possible. Monitor for increased side effects from these medications. Reduce clarithromycin dose by 50 to 70% in kidney impairment. The antifungal drugs itraconazole or ketoconazole should be used with caution (maximum dose is 200 mg a day for either). Voriconazole should not be used unless the benefits outweigh the risks. Cialis, Levitra, and Viagra levels are increased; doses should not exceed 10 mg Cialis or 2.5 mg Levitra per 72 hours, or 25 mg Viagra per 48 hours. Prezista may increase levels of calcium channel blockers (like amlodipine) and beta blockers; clinical monitoring is recommended. A lower dose of trazodone and desipramine may be recommended. Close monitoring of INR levels required when using warfarin. Increases levels of fluticasone (found in Advair, Flonase, and Flovent) and budesonide; use alternative corticosteroid and monitor for signs of Cushing's syndrome (increased abdominal fat, hump between the shoulders, rounded face, red/purple stretch marks, bone loss, high blood pressure, and sometimes diabetes). Effectiveness of birth control pills may be decreased; consider other methods of contraception. Use lowest dose of digoxin; monitor and titrate. No dose adjustment required with buprenorphine or methadone. Monitoring of antidepressant response is recommended with selective serotonin reuptake inhibitors (such as paroxetine and sertraline). Use cautiously with bosentan, immunosuppressants, and colchicine; use lower dose of colchicine. Can be used with Sovaldi and Daklinza. Avoid with Harvoni if tenofovir disoproxil fumarate (TDF) is part of HIV regimen. With Epclusa, monitor for tenofovir toxicities if TDF is part of HIV regimen. Do not take with Olysio, Viekira Pak, or Zepatier.

David J. Malebranche, MD, MPH says: Darunavir (DRV) has been around as a boosted once-daily option (DRV/r) combined with two NRTIs for some time now, and being recently reformulated with cobicistat as Prezcobix (DRV/c) has added another option to its utility. Patients tolerate it well, and its high genetic barrier to resistance has led to it commonly being referred to as the "workhorse" of many ARV regimens. When combined with TDF/FTC or TAF/FTC it represents a very attractive option for ARV-naïve patients or even those who have failed an NNRTI-based regimen. Previous concerns about hypertriglyceridemia have waned since its early days, and rates of this side effect are comparable to RAL and ATV/r in clinical trials. DRV does have a sulfonamide moiety, so use with caution in patients with a history of severe sulfa or Bactrim allergies.

Activist Matt Sharp says: This protease inhibitor, boosted and used in combination with Truvada, came along at just the right time for me, especially because I combined it with Isentress, when no other options existed. (See Isentress.) It remains important and is one of five regimens recommended by the DHHS HIV Treatment guidelines panel. I know a woman who's a long-term survivor who has been on unboosted Prezista and has remained side effect-free and undetectable for years. However, for those taking HIV drugs for the first time, the newer STR drugs should be your first consideration.

MORE INFORMATION

Prezista in combination with Norvir and Descovy or Truvada is the only PI recommended for initial therapy in U.S. HIV treatment guidelines. A single-tablet, once-daily regimen containing Prezista, Tybost, TAF, and Emtriva is being studied and will be the first one-tablet, once-daily PI-containing regimen. It worked as well as a similar regimen containing the older tenofovir disoproxil fumarate (Viread) formulation in a small pilot study, but it had fewer detrimental effects on kidney function and bone density. Prezista/Norvir was added as a preferred combination last year in HIV treatment guidelines for pregnancy. A fixed-dose tablet containing Prezista and Tybost is available; see Prezcobix.

See package insert for more complete information on potential side effects and interactions.

Prezcobix

DHHS ALTERNATIVE

darunavir/cobicistat, or **DRV/COBI**

STANDARD DOSE

One tablet (800 mg of the PI darunavir boosted by 150 mg cobicistat) once daily with food, in patients with no darunavir drug resistance.

This co-formulation is only available for people taking darunavir once daily, not those who require darunavir twice daily. When coadministered with drugs containing tenofovir disoproxil fumarate (Viread, found in Atripla, Complera, Stribild, and Truvada) the kidney function should be above 70 mL/min.

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Cobicistat should be used in pregnancy only if the benefits justify the risks. The only available pregnancy data is from animal testing. Cobicistat has not been studied in individuals under 18 years of age, thus Prezcobix should not be used in pediatric patients. Do not use in people with severe liver impairment.

MANUFACTURER

Janssen Therapeutics
prezcobix.com
(800) JANSSEN
(526-7736)

AWP

$2,009.23 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the pages for the individual drugs contained in this medication—Prezista and Tybost. Prezcobix was FDA approved based on bioequivalency data (similar drug levels in blood when compared to its FDA approved equivalent). In clinical trials with Prezista/Norvir, the most common side effects seen of at least moderate intensity in 5% or more of participants taking it were diarrhea, nausea, rash, headache, abdominal pain, and vomiting. There may be a small increase in serum creatinine (SCr) and decrease in estimated creatinine clearance (CrCl), but this does not affect actual kidney function. However, patients experiencing a confirmed increase in serum creatinine of greater than 0.4 mg/dL from baseline should be closely monitored for renal safety. Serum phosphorus in patients with or at risk for kidney impairment should also be monitored. Kidney impairment, including cases of acute kidney failure and Fanconi syndrome, have been reported in patients taking both cobicistat and Viread (tenofovir DF or TDF, also found in Truvada). When used with TDF, a baseline CrCl, urine glucose, and urine protein is needed; CrCl, urine glucose, and urine protein should be monitored regularly while taking Tybost-containing regimens. As darunavir (contained in Prezcobix) contains a sulfa component, patients with a known sulfonamide allergy should be monitored for rash after starting it.

POTENTIAL DRUG INTERACTIONS

See the pages for the individual drugs contained in this medication—Prezista and Tybost. Tell your provider or pharmacist about all medications, herbals, and supplements that you're taking or thinking of taking, prescribed or not, before starting on a regimen that contains Prezcobix. Do not take with Evotaz, Genvoya, Kaletra, Norvir, Prezista, Stribild, or Tybost; all or part of these medications are already in Prezcobix or contain medication from the same drug classes. Use with other protease inhibitors or Intelence, Sustiva, or Viramune is not recommended. Do not take with ergot derivatives, triazolam, oral midazolam, lurasidone, pimozide, Revatio, simvastatin, lovastatin, St. John's wort, alfuzosin, ranolazine, rifampin, or dronedarone. Do not take with colchicine if there is kidney or liver impairment. Can be used with Daklinza. Based on the mechanism, drug interactions with other hepatitis C medications are probably similar to the interactions with Prezista/Norvir, but we are not certain. See the page for Prezista for those interactions.

David J. Malebranche, MD, MPH says: Prezcobix is the cobicistat-boosted DRV medication that has emerged recently as an option to use with a dual NRTI backbone. DRV/c is similarly effective and bioavailable as DRV/r, possibly without the potential diarrhea and abdominal complaints that can accompany ritonavir-boosted regimens. Similar to the side effect profiles of DRV and cobicistat separately, careful monitoring of lipid profiles and kidney function should be a priority. Only thing lacking at this point are the clinical trials supporting it, but expect in the years to come that it may make a leap to be part of Recommended Regimens instead of being just an Alternative Regimen for our patients.

Activist Matt Sharp says: Can we talk? For me this fixed-dose combination of Prezista plus new booster cobicistat is great news. I've been on Prezista and the older less-friendly ritonavir booster for far too long. And while I am most likely part of a small niche that still uses Prezista, it is one of those grateful moments I can recall in drug development history that makes HIV drug taking just a bit more convenient. One caveat is that there is still controversy over the benefits of switching to cobicistat. Still, I'd love to eventually see my toilet paper budget drop.

MORE INFORMATION

Prezcobix is an alternative PI for first-time therapy in DHHS HIV treatment guidelines, and is one of two PIs that is co-formulated with a booster (the other is Evotaz). Since Prezista must be used with a PK enhancer such as cobicistat (Tybost) or ritonavir (Norvir), this formulation makes for greater convenience, one less pill, and one less co-pay. The resulting co-formulation, however, is rather large in size. Tybost is not an HIV medication; like ritonavir (which is an HIV medication), it is used to boost blood levels of other drugs. The two PK enhancers have a long list of drug interactions.

See package insert for more complete information on potential side effects and interactions.

Evotaz

DHHS ALTERNATIVE

atazanavir/cobicistat, or **ATV/COBI**

STANDARD DOSE

One tablet once daily with food. Each tablet contains 300 mg of atazanavir boosted by 150 mg cobicistat.

Use in treatment-experienced patients depends on protease inhibitor drug resistance substitutions. Coadministration with drugs containing tenofovir disoproxil fumarate (Viread, found in Atripla, Complera, Stribild, and Truvada) is not recommended if kidney function is below 70 ml/min.

Not recommended in people with liver impairment or those who are treatment-experienced and on hemodialysis.

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Cobicistat should be used in pregnancy only if the benefits justify the risks. There is only animal data in pregnancy. Cobicistat has not been studied separately from Genvoya and Stribild in individuals under 18 years of age; thus, Evotaz should not be used in pediatric patients.

MANUFACTURER

Bristol-Myers Squibb
evotaz.com
(800) 321-1335

AWP

$1,926.56 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the pages for the individual drugs contained in this medication—Reyataz and Tybost. The most common side effects (greater than 10%) seen in clinical trials were nausea, ocular icterus (yellowing of the eyes), and jaundice. Rash has also been reported, though less common. There may be a small increase in serum creatinine (SCr) and decrease in estimated creatinine clearance (CrCl). However, this does not affect actual kidney function. Patients experiencing a confirmed increase in serum creatinine of greater than 0.4 mg/dL from baseline should be closely monitored for renal safety. Serum phosphorus in patients with or at risk for kidney impairment should also be monitored. Kidney impairment, including cases of acute kidney failure and Fanconi syndrome, has been reported in patients taking both cobicistat and Viread (tenofovir DF or TDF, also found in Truvada). When used with TDF, a baseline CrCl, urine glucose, and urine protein is needed; CrCl, urine glucose, and urine protein should be monitored regularly while taking Tybost-containing regimens.

POTENTIAL DRUG INTERACTIONS

See the pages for the individual drugs contained in this medication—Reyataz and Tybost. Tell your provider or pharmacist about all medications, herbals, and supplements that you're taking or thinking of taking, prescribed or not, before starting on a regimen that contains Evotaz. Do not take with Genvoya, Kaletra, Norvir, Prezcobix, Reyataz, Stribild, or Tybost; all or part of these medications are already in Evotaz or contain medication from the same drug classes. Use with other protease inhibitors or with Intelence or Sustiva is not recommended. Do not take with ergot derivatives, triazolam, oral midazolam, lurasidone, pimozide, Revatio, simvastatin, lovastatin, St. John's wort, Viramune, alfuzosin, ranolazine, rifampin, dronedarone, or irinotecan. Do not take with colchicine if there is kidney or liver impairment. Do not use with Olysio, Viekira Pak, or Zepatier. Can be used with Sovaldi, Daklinza (reduce Daklinza dose to 30 mg), or Harvoni (if TDF is not part of the HIV regimen). Monitor for tenofovir toxicities with Epclusa if TDF is part of the regimen.

David J. Malebranche, MD, MPH says: Evotaz (ATV/c) has been found to be non-inferior to ATV/r in maintaining virologic suppression when combined with TDF/FTC. The main advantage over using ATV and cobicistat separately is having them combined in one pill and one co-pay. Similar considerations for ATV and cobicistat and their respective profiles apply here. Reversible indirect hyperbilirubinemia is a potential pitfall with ATV, and renal considerations for elevated CrCl should be followed closely with cobicistat. Despite this, the combination of ATV with this PK booster is a good Alternative Regimen that can be paired with TDF, TAF, or ABC-based NRTI backbones for initial treatment of ARV-naïve patients.

Activist Matt Sharp says: The advantage of this combination pill is the addition of the pharmacokinetic enhancer cobicistat to Reyataz, and taking this fixed-dose pill would essentially cut down on the number of pills taken. Another benefit is it would reduce the need for a copayment for a second drug. Since the availability of cobicistat as a replacement for ritonavir, more clinical trial information and patient experience shows little difference, not a whole lot better, but definitely not worse. For anyone on a boosted Reyataz regimen who is not switching to a shiny new STR, this is most likely a good selection.

MORE INFORMATION

Evotaz is an alternative PI for first-time therapy in DHHS HIV treatment guidelines, and is one of two PIs that are co-formulated with the booster cobicistat (the other is Prezcobix). Since most people who take Reyataz must use it with a PK enhancer like cobicistat (Tybost) or ritonavir (Norvir), this formulation makes for greater convenience, one less pill, and one less co-pay. Tybost is not an HIV medication; like ritonavir, it is used to boost blood levels of other drugs. The two PK enhancers have a long list of drug interactions.

See package insert for more information on side effects and drug interactions.

Reyataz

DHHS ALTERNATIVE

atazanavir sulfate (atazanavir), or **ATV**

STANDARD DOSE

BOOSTED: One 300 mg capsule plus 100 mg Norvir or 150 mg Tybost, once daily with food (this boosted dose should be used if taking Viread or Truvada, or if treatment-naïve and on hemodialysis). UNBOOSTED: Two 200 mg capsules (without Norvir or Tybost) once daily with food.

Unboosted dose may be considered for treatment-naïve adults in some cases; however, the boosted dose is preferred. The boosted dosing should be used during pregnancy, and dosing depends on the trimester, previous ARV experience, and drug interactions—ask your doctor.

Take missed dose as soon as possible, unless it's closer to the time of your next dose. Do not double up on your next dose. Swallow capsules whole—do not open or mix with anything. Take Norvir or Tybost pill when you take Reyataz.

With mild to moderate liver disease, Reyataz should not be used with a booster, and the dose depends on the degree of liver impairment. Reyataz should not be used in severe liver impairment.

Also available in 150 and 200 mg capsules, and 50 mg oral powder packets.

MANUFACTURER

Bristol-Myers Squibb
reyataz.com
(800) 321-1335

AWP

$1,739.30 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Most common side effects may include nausea, yellowing of the skin or eyes (a result of increased bilirubin levels), and rash. Other less common side effects may include kidney stones, gallstones, abnormal heart rhythm, and elevated liver enzymes (more common in people with hepatitis B or C). Capsules do not contain phenylalanine but oral powder does; thus use with caution in individuals with phenylketonuria (PKU).

POTENTIAL DRUG INTERACTIONS

See package inserts for Reyataz, Norvir, and Tybost. Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. Do not use with alfuzosin, rifampin, irinotecan, ergot derivatives, triazolam, oral midazolam, St. John's wort, Revatio, or Viramune (nevirapine). Do not use lovastatin, simvastatin, or the co-formulations containing them (Advicor and Vytorin) for treatment of high cholesterol. Alternatives for these are atorvastatin, rosuvastatin, pravastatin, pitavastatin, and fluvastatin, but should be used with caution and started at the lowest dose possible; monitor for increased side effects. Proton pump inhibitors (PPIs, like Protonix, Nexium, and Prevacid) and H2-receptor antagonists (H2RAs, like Pepcid, Zantac, and Tagamet) can stop Reyataz from being absorbed. Treatment-experienced people should not take PPIs while on Reyataz. Treatment-naïve people can take a PPI at a low dose (such as 20 mg Prilosec OTC) 12 hours before Reyataz/Norvir. H2RAs like Pepcid may be taken (no more than 20 mg twice a day if treatment-experienced or 40 mg twice a day if treatment-naïve) at the same time as Reyataz/Norvir or at least 10 hours later. When taking Reyataz without Norvir, the dose can be taken at least two hours before and at least 10 hours after an H2RA. If taking chewable antacids like Rolaids and Tums, take Reyataz two hours before or one hour after. Treatment-experienced people should not take Reyataz with Sustiva. Viread decreases the levels of Reyataz and Reyataz/Norvir increases Viread levels; monitor for adverse events. Reyataz can be taken unboosted with Epzicom if necessary. Bepridil, amiodarone, quinidine, and lidocaine should be used cautiously because of the risk of worsening heart rhythm. Monitoring may be required when used with warfarin. Calcium channel blockers should be monitored. Use caution when using the antifungals itraconazole or ketoconazole. Voriconazole is not recommended. Reducing dose and frequency of rifabutin to 150 mg every other day or three times a week is recommended. Reyataz/Norvir increases levels of fluticasone (found in Advair, Flonase, and Flovent); monitor for signs of Cushing's syndrome, including rounded face. An alternative corticosteroid is recommended. Reyataz can be taken with birth control pills that contain no more than 30 mcg of ethinyl estradiol if taking Reyataz without Norvir and at least 35 mcg if taken with Norvir. Use caution with carbamazepine, phenobarbital, and phenytoin. ED drugs should not exceed 10 mg Cialis or 2.5 mg Levitra per 72 hours, or 25 mg Viagra per 48 hours. A lower dose of trazodone is recommended. Use with caution with bosentan, salmeterol, and immunosuppressants, and use lower dose of colchicine. Use with Norvir when taking buprenorphine. Monitor before sedation. Taking with Olysio or Zepatier is not recommended. Reyataz/Norvir is not recommended with Harvoni if tenofovir disoproxil fumarate (TDF, in Truvada) is part of HIV regimen. With Epclusa, monitor for tenofovir toxicities if TDF is part of HIV regimen. Take Reyataz with morning Viekira Pak dose, without Norvir.

David J. Malebranche, MD, MPH says: Atazanavir (ATV) is often seen as the not-as-attractive little brother of DRV when it comes to PI utility with ARV regimens. The problem is not with efficacy, as rates of virologic suppression are comparable with regimens containing EFV, EVG/c or LPV/r. Reyataz has always suffered from the issue of reversible indirect hyperbilirubinemia as a common side effect and cause of early discontinuation in clinical trials. The resulting jaundice and icterus that can result from this side effect can be particularly troubling and anxiety-provoking for patients, even when the medication is working marvelously. Good news is that this side effect is reversible upon discontinuation. Since ATV needs acidic gastric pH for suitable absorption, it may not be a good option for folks on proton pump inhibitors or H2 blockers. Nephrolithiasis has also been reported with ATV—though not as common as with the old PI Crixivan, but enough to warrant a raised eyebrow when a patient has any urinary complaints or CVA tenderness while on this med. Finally, because Reyataz suffers lower drug levels when paired with TDF, it is recommended to always use a PK booster when prescribed with TDF.

Activist Matt Sharp says: As a consumer representative to the FDA Antiviral Advisory board I voted for recommending approval for this protease inhibitor way back in 2003. At the time, it represented a new option second generation PI that was and continues to be potent and safer than the older PIs. Unfortunately, jaundice—a tolerable side effect of the liver that appears as a yellowing in the skin and eyes—is seen. Few living with a stigmatizing disease like HIV need another visible sign like jaundice, but at the time this was one of those "good news" drugs to add to the growing number of PIs being developed.

MORE INFORMATION

Norvir-boosted Reyataz was downgraded from recommended to alternative regimen in the DHHS HIV treatment guidelines based on a high discontinuation rate due to side effects in a large study in which it was inferior to Prezista and Isentress due to tolerability. This is mainly because of increased bilirubin levels that are not harmful, but cause yellowing of the eyes and skin. It is still a recommended drug for pregnancy. It is now available as a boosted tablet; see Evotaz.

Children 6–18 years old weighing at least 33 lbs (15 kg) can use the capsules, and dosing is based on weight. A powder formulation, taken with Norvir, is available for children 3 months and older weighing at last 11 lbs (5 kg). See Tybost page.

See package insert for details of potential side effects and interactions.

Norvir

USED ONLY AS A BOOSTER FOR OTHER DRUGS

ritonavir, or **RTV**

STANDARD DOSE

Used as a boosting agent for other PIs (increases the levels of other PIs), at smaller doses of 100 to 200 mg, taken either once or twice a day with a meal.

Take missed dose as soon as possible (at the same time as the other PI prescribed) unless it's closer to the time of your next dose. Do not double up on your next dose. Do not crush or chew tablets, always swallow whole. See drug label of the other PIs.

Approved for children older than one month; however, since it is only used as a booster, the use in children depends on the other PI. Capsule formulation requires refrigeration. Tablet formulation does not require refrigeration. Liquid formulation available, but is not very palatable. The taste of the liquid can be improved by mixing with chocolate milk, Ensure, or Advera within one hour of dosing. Liquid formula should not be taken by pregnant women, as it contains 43% alcohol.

MANUFACTURER

AbbVie
norvir.com
(800) 633-9110

AWP

$308.60 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

The side effect potential of Norvir is much lower now that we only use it as a booster at low doses. Most common side effects include stomach pain, nausea, diarrhea, and vomiting. Other less common side effects may include fatigue; tingling/numbness around the mouth, hands, or feet; loss of appetite; and taste disturbances. Norvir can also increase cholesterol and triglyceride levels.

POTENTIAL DRUG INTERACTIONS

Norvir interacts with many drugs. See package insert for the most complete list of interactions. Tell your provider or pharmacist about all medications, herbals, supplements, or over-the-counter (OTC) products you are taking or thinking of taking, prescribed or not, as there are many other drug interactions which are not listed here. Do not take with alfuzosin, Revatio, flecainide, propafenone, amiodarone, oral midazolam, triazolam, pimozide, rifapentine, rifampin, voriconazole, ergot derivatives, or the herb St. John's wort. Do not use lovastatin and simvastatin or co-formulations containing these drugs (Advicor and Vytorin) for the treatment of high cholesterol. Cholesterol-lowering alternatives are atorvastatin, rosuvastatin, pravastatin, pitavastatin, and fluvastatin, but should be used with caution and started at the lowest dose possible; monitor for increased side effects. Increases levels of fluticasone (found in Advair, Flonase, and Flovent), which may lead to Cushing's syndrome. Use an alternative corticosteroid and monitor for signs of Cushing's syndrome (increased abdominal fat, fatty hump between the shoulders, rounded face, red/purple stretch marks, bone loss, possible high blood pressure, and sometimes diabetes). Trazodone concentrations may increase; a lower dose of trazodone is recommended. Norvir may decrease levels of methadone, which may need to be increased. Use caution with anticonvulsants such as carbamazepine, phenobarbital, and phenytoin. Use calcium channel blockers (amlodipine, nifedipine, and others) with caution. Norvir may alter warfarin levels; additional monitoring may be required. Do not take Xarelto, as Norvir can increase Xarelto concentrations and increase risk of bleeding. Cialis, Levitra, and Viagra levels are increased; doses should not exceed 10 mg Cialis or 2.5 mg Levitra per 72 hours, or 25 mg Viagra per 48 hours. Effectiveness of birth control pills may be decreased; consider the use of other contraception. Levels of the street drug ecstasy are greatly increased by Norvir, and at least one death has been attributed to the combination. GHB, another street drug, is also dangerous with Norvir. Clarithromycin levels can increase by up to 80%. Use with caution with bosentan, salmeterol, and immunosuppressants; use a lower colchicine dose. Norvir, when combined with another PI (Norvir + PI) may be taken with Sovaldi, Daklinza (dose may need adjustment), Epclusa (monitor for tenofovir toxicity if TDF is part of regimen), and Harvoni (if TDF is not part of HIV regimen). Norvir + PI should not be taken with Olysio, Viekira Pak, or Zepatier.

David J. Malebranche, MD, MPH says: A PI mainstay of treatment years ago, ritonavir (RTV) fell out of favor as a primary agent due to intolerable GI side effects and pill burden—but enjoyed a Phoenix-like resurgence as a PK booster of other PIs in the past decade or so at much lower and tolerable doses. Essentially used at a 100 mg dose, it's not effective on its own, but enhances the bioavailability and pharmacokinetics of ATV and DRV. The future of RTV is gloomy with the approval and broad-based utilization of Tybost (cobicistat) as an up-and-coming PK booster that offers a slightly more tolerable GI profile. Cost may keep it hanging around when it becomes generic and providers may have their arms twisted to avoid the pricier cobicistat option.

Activist Matt Sharp says: Abbott Laboratories has so much baggage from the early years when its protease inhibitor drug Norvir was first released in a motor oil-tasting oral suspension. Later the company shocked the world with a 400% price increase—the highest price increase of any AIDS drug in history because it was going to be used in much smaller doses. Less dose equals less profit. This was years before the smarmy Martin Shkreli, CEO of Turing Pharmaceuticals, arrogantly defended a 5000% increase for an old drug used in AIDS for parasitic infections. But I digress. The point now is that Norvir is still used but at last has a not-much-improved competitor in Gilead's Tybost aka cobicistat. (Clever name, no?)

MORE INFORMATION

The real strength of Norvir is its use with other PIs as a boosting agent. An alternative to Norvir was approved in 2014 (see Tybost page). Stomach side effects are reduced by taking Norvir with high-fat foods—however, some other HIV medicines should not be taken with high-fat foods. See package insert for more complete information on potential side effects and interactions.

Tybost

USED ONLY AS A BOOSTER FOR OTHER DRUGS

cobicistat, or **COBI**

STANDARD DOSE

150 mg once a day with food taken at the same time with either Prezista 800 mg or Reyataz 300 mg.

Tybost is not an HIV drug; it is a pharmacokinetic enhancer, a "booster" used to increase the levels of Prezista 800 mg once daily or Reyataz 300 mg once daily. Tybost is not interchangeable with Norvir when used to increase the levels of other HIV medications.

Take it as soon as possible, unless it is closer in time to your next dose. Do not double up on your next dose.

Tybost should only be used in pregnancy if the benefits justify the risks. There are only animal data in pregnancy. Tybost has not been studied separately from Genvoya and Stribild in individuals under 18 years of age; thus Tybost should not be used in pediatric patients.

MANUFACTURER

Gilead Sciences, Inc.
gilead.com
(800) GILEAD-5
(445–3235)

AWP

$230.90 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Side effects seen in clinical studies (greater than 2% of patients) include nausea, jaundice, and yellowing of the eyes. However, it was studied with Reyataz so the jaundice and yellowing of eyes were most likely due to the Reyataz. There may be a small increase in serum creatinine (SCr) and decrease in estimated creatinine clearance (CrCl). However, this does not affect actual kidney function. The SCr increase occurred within weeks of starting cobicistat and was reversible within a few days after stopping Tybost. The coadminstration of Tybost and Viread (tenofovir DF or TDF, also found in Atripla, Complera, Truvada, and Stribild) is not recommended if the CrCl is less than 70 mL/min.

POTENTIAL DRUG INTERACTIONS

Tybost interacts with many drugs, because as a booster it inhibits liver enzymes involved in drug metabolism. See the package insert for the most complete list of interactions. Tell your provider or pharmacist about all medications, herbals, and supplements that you're taking or thinking of taking, prescribed or not, before starting on a regimen that contains cobicistat. Do not take with Evotaz, Genvoya, Kaletra, Norvir, Prezcobix, or Stribild as each of these also contain Tybost or has a similar medication. Do not take with alfuzosin, colchicine, dihydroergotamine, dronedarone, ergotamine, irinotecan, simvastatin, lovastatin, lurasidone, methylergonovine, ranolazine, rifampin, pimozide, triazolam, oral midazolam, Revatio, or St. John's wort. Tybost may increase levels of fluticasone (Flonase, Advair, Flovent). Use an alternative corticosteroid and monitor for signs of Cushing's syndrome (increased abdominal fat, fatty hump between the shoulders, rounded face, red/purple stretch marks, bone loss, possible high blood pressure, and sometimes diabetes). Tybost may increase levels of certain calcium channel blockers, beta blockers, HMG-CoA reductase inhibitors (statins), antiarrhythmics, antidepressants, sedative-hypnotics, rifabutin, bosentan, erectile dysfunction agents, inhaled corticosteroids, and norgestimate. Caution should be taken, with possible dose adjustments of these medications, when used with Tybost. Sporonox (antifungal) and Biaxin (antibiotic) may increase Tybost concentrations. Tybost may increase Biaxin levels. Rifabutin and some anti-seizure medications, such as carbamazepine (Tegretol), phenobarbital, and phenytoin (Dilantin) may decrease Tybost drug levels. Do not take with Olysio, Viekira Pak, or Zepatier. Avoid Harvoni if tenofovir disoproxil fumarate (TDF) is part of the HIV regimen. Tybost has similar drug interactions as Norvir, but they are not interchangeable and there may be some drug interactions with Tybost that are not seen with Norvir.

David J. Malebranche, MD, MPH says: Tybost (cobicistat) made a splash as the first non-ARV PK booster back in 2014. It is primarily used as an enhancer of DRV or ATV as Prezcobix and Evotaz, respectively, and has a relatively tolerable side effect profile. Already incorporated in recommended and alternative regimens, Tybost looks like it will be here to stay, but it can reduce the renal tubular secretion of creatinine and raise serum creatinine levels. Additionally, since it is a cytochrome P450 inhibitor, it has the potential to cause interactions with many other medications. It also hasn't been extensively studied for its impact on levels of hormone-based birth control or nutritional supplements, vitamins, and herbal products like St. John's wort. For now, Tybost appears to be poised to make a huge dent in the PK booster market that up to recently, had been monopolized by RTV.

Activist Matt Sharp says: Unlike Norvir, which was developed and first used as a protease inhibitor, Tybost was developed from the drawing board strictly to boost or enhance the level of certain HIV drugs. It works by inhibiting CYP3A4, a liver enzyme commonly used by other drugs. The hope (and hype), at least from activists and many doctors, was that this would be a direct competitor to Norvir, which cornered the market for booster drugs and then the price was raised 400%, and most importantly, would lessen the GI discomfort that tortured people with HIV for years. (See Norvir.) But alas, I'll never forget the body language in the room when some of the first side effect data was shown at CROI. The room literally fell silent as the study showed a similar GI toxicity profile. Oh well, the one piece of good news is that it is being co-formulated with many HIV drugs that need a pick-me-up. I yearn for the days when we won't need a booster drug in HIV. How about a plain ole HIV cure?

MORE INFORMATION

Tybost is not an HIV medication. It is used to boost blood levels of Prezista and Reyataz, and is available in fixed-dose tablets with those medications (see Evotaz and Prezcobix). Cobicistat is also part of the single-tablet regimens Genvoya and Stribild, both recommended therapies in U.S. HIV treatment guidelines. Tybost shares some of the same side effects of increased cholesterol and increased triglycerides as Norvir; however in clinical trials they were less pronounced.

See package insert for more complete information on potential side effects and interactions.

Descovy

DHHS RECOMMENDED FOR FIRST-LINE USE

emtricitabine/tenofovir alafenamide, or **FTC/TAF**

STANDARD DOSE

One tablet once daily, with or without food. Tablet contains 200 mg emtricitabine and 25 mg tenofovir alafenamide.

For adults and children 12 years or older weighing more than 77 pounds (35 kg), once daily, with or without food. Unlike Truvada, Descovy can be used in people with some kidney dysfunction (ClCr ≥ 30 mL/min).

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Should not be used if kidney function is less than 30 mL/min or if you are on dialysis.

MANUFACTURER

Gilead Sciences, Inc.
gilead.com
descovy.com
(800) GILEAD-5
(445–3235)

AWP

$1,759.73 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Overall, Descovy is well tolerated, but some may experience nausea, headache, stomach pain, or weight loss. Skin discoloration on palms and soles may also occur. May affect the bones and kidneys. In clinical trials, less bone and kidney issues were seen with TAF versus TDF. Tell your provider about any pain in extremities, persistent or worsening bone pain and fractures, with or without muscular pain or weakness, as these could be signs of kidney problems. If discontinued abruptly in HBV-co-infected patients, exacerbation of hepatitis may occur. See Emtriva for hepatitis B information.

POTENTIAL DRUG INTERACTIONS

Do not take with Atripla, Combivir, Complera, Odefsey, Emtriva, Epivir, Epivir-HBV, Epzicom, Genvoya, Hepsera, Stribild, Triumeq, Trizivir, Truvada, Vemlidy, or Viread since all or part of these medications are already in this drug or it contains medication from the same drug class. In addition, Reyataz/Norvir, Prezista/Norvir and Kaletra increase tenofovir concentrations. It is recommended that patients taking Reyataz/Norvir, Prezista/Norvir, or Kaletra with tenofovir-containing drugs should be monitored for tenofovir-associated adverse events, particularly decreases in kidney function. This interaction may have less clinical significance because there is a 90% lower serum (blood) tenofovir concentration with TAF versus TDF. Use caution with drugs that negatively affect the kidneys, including chronic use or high doses of anti-inflammatory drugs like Advil, Aleve, and Motrin. Unlike TDF, TAF should not be taken with certain anticonvulsants (including carbamazepine, phenobarbital, and phenytoin), Aptivus/Norvir, rifabutin, rifampin, or St. John's wort. Can be used with hepatitis C drugs such as Epclusa, Harvoni, Sovaldi, Olysio, Daklinza, Viekira Pak, or Zepatier.

MORE INFORMATION

Descovy is the new version of Truvada. Instead of TDF, Descovy contains TAF (tenofovir alafenamide), which is a more potent prodrug of tenofovir. TAF reduces serum tenofovir concentration by 90%. This results in less impact on kidney and bone mineralization. In clinical trials, fewer kidney and bone issues were seen with TAF than TDF, and significant improvements were seen when switching from TDF to TAF. Both Descovy and Truvada are currently recommended by DHHS HIV treatment guidelines for first-time therapy. However, unlike Truvada, Descovy is not approved for and should not be used for PrEP. There is not sufficient data on the effectiveness of Descovy in prevention.

See package insert for more complete information on potential side effects and interactions.

David J. Malebranche, MD, MPH says: Descovy (TAF/FTC) offers patients a much safer and tolerable alternative to TDF/FTC as a dual nuke backbone part of a regimen. Advantages include less bone and kidney toxicity than its brother TDF-based co-formulation, and activity against HBV in patients with HIV/HBV co-infection. It already is a part of two STR formulations with EVG/c and RPV that are in the guidelines. It will be exciting to see if its impact over time will change recommendations with other medications in the future. As mentioned, the main caution involves monitoring for elevated LDL and HDL levels, but the clinical significance of these elevations are uncertain and may just cancel each other out. Serves as an option and is approved for use in patients with eGFR ≥30 mL/min. Important to note that Descovy has not been FDA-approved for use as pre-exposure prophylaxis (PrEP), so that HIV-negative patients seeking to utilize it for this purpose from both a cost perspective and willingness of medical providers to use off-label, cannot do so as its comparable effectiveness to Truvada in this capacity has yet to be proven.

Activist Matt Sharp says: This drug contains a newer formulation of Gilead's ancestor drug tenofovir DF, called TAF. A "pro-drug" of the original tenofovir, TAF achieves a higher concentration inside the cell where the reverse transcriptase enzyme is targeted, therefore preventing one of the critical steps for viral replication. Studies showed non-inferiority (not worse) than the older version. TAF will eventually replace TDF, but clinical trials are needed. TAF will not be used for PrEP until clinical trials using it for prevention are completed.

Truvada

DHHS RECOMMENDED FOR FIRST-LINE USE

emtricitabine/tenofovir disoproxil fumarate, or **FTC/TDF**

STANDARD DOSE

One tablet once daily, with or without food. Tablet contains 200 mg emtricitabine and 300 mg tenofovir disoproxil fumarate. For adults and children 12 years or older weighing more than 37 lbs (17 kg).

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. The dosing frequency needs to be adjusted for people with decreased kidney function. Truvada should not be used if kidney function is less than 30 mL/min or if you are on dialysis. Truvada once daily is also approved for prevention (pre-exposure prophylaxis, or PrEP) in confirmed HIV-negative adults; go to positivelyaware.com/truvada-for-prep.

MANUFACTURER

Gilead Sciences, Inc.
gilead.com
truvada.com
(800) GILEAD-5
(445–3235)

AWP

$1,759.73 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the pages for the individual drugs contained in Truvada—Viread and Emtriva. Overall, it is well tolerated, but some may experience nausea, headache, gas, stomach pain, or weight loss. Skin discoloration on palms and soles may also occur. The tenofovir disoproxil fumarate (Viread) in Truvada is associated with decreases in bone mineral density (BMD). BMD monitoring should be considered in people who have a history of bone fracture due to disease or are at risk for osteopenia or osteoporosis. It is unknown if calcium supplements with or without vitamin D would be beneficial. While calcium and vitamin D levels can be checked to assess the need for these supplements, talk with your provider before starting on your own. Truvada can cause kidney toxicities. Tell your provider about any pain in extremities, persistent or worsening bone pain and fractures, with or without muscular pain or weakness, as these could be signs of kidney problems. If Emtriva, Viread, or Truvada are discontinued abruptly in HBV-co-infected patients, exacerbation of hepatitis may occur. See Emtriva for hepatitis B information.

POTENTIAL DRUG INTERACTIONS

See the pages for the individual drugs contained in Truvada—Viread and Emtriva. Do not take with Atripla, Combivir, Complera, Odefsey, Descovy, Emtriva, Epivir, Epivir-HBV, Epzicom, Genvoya, Hepsera, Stribild, Triumeq, Trizivir, Viread, or Vemlidy, since all or part of these medications are already in Truvada or it contains equivalent medications or contain medications from the same drug classes. Tenofovir decreases the concentration levels of Reyataz, therefore when Reyataz is taken with Truvada or Viread, it is recommended that Reyataz 300 mg is taken with Norvir 100 mg or Tybost 150 mg (all as a single daily dose with food). In addition, Reyataz/Norvir, Prezista/Norvir, and Kaletra increase tenofovir concentrations. It is recommended that patients taking Reyataz/Norvir, Prezista/Norvir, or Kaletra with Truvada should be monitored for Truvada-associated adverse events, particularly decreases in kidney function. Avoid taking Truvada with drugs that negatively affect the kidneys, including chronic use or high doses of anti-inflammatory drugs like Advil, Aleve, ibuprofen, naproxen or Motrin. Truvada may be used with hepatitis C drugs such as Daklinza, Harvoni, Olysio, Sovaldi, Viekira Pak, or Zepatier, depending on the third drug in the HIV regimen. Monitor for tenofovir toxicities if used with Epclusa.

MORE INFORMATION

Currently, DHHS HIV treatment guidelines recommend Truvada (or Descovy) over Epzicom as the NRTI component for first-time therapy (unless Epzicom is paired with Tivicay). The new version of this drug, called Descovy, was approved in 2016. Descovy contains TAF instead of TDF. Studies reported that while both Epzicom and Truvada reduced viral load, for those people who started treatment with a viral load of more than 100,000, Epzicom was "less effective at controlling HIV" in the regimens tested. In studies using Tivicay in the regimen however, Truvada and Epzicom were equally effective regardless of viral load. Kidney function must be monitored before and during treatment with Truvada and it may not be a good option for patients with underlying kidney problems. Less kidney and bone issues were seen with TAF than TDF in clinical trials. The components of Truvada are also contained in three once-daily single-tablet regimens: Atripla, Complera, and Stribild.

See package insert for more complete information on potential side effects and interactions.

David J. Malebranche, MD, MPH says: Hard to believe Truvada (TDF/FTC) has been with us for almost 13 years, but this dual nuke has been the "go-to" for several ARV combination regimens for years. While often combined with numerous PIs, NNRTIs, and INSTIs, and currently part of single-tablet regimens containing EFV, RPV, and EVG/c, enthusiasm has always been muted by the continuing evidence of renal and bone toxicity with Truvada. As our patients become older and struggle with other co-morbidities such as hypertension, type 2 diabetes mellitus, and other potentially nephrotoxic conditions, this enthusiasm will likely wane further among clinicians considering safe options for their patients. As clinicians continue to switch from TDF/FTC to TAF/FTC based HIV treatment regimens, Truvada will still enjoy use as the only FDA-approved pre-exposure prophylaxis (PrEP) indication.

Activist Matt Sharp says: It has been joked that this drug is in our water because it is so widely indicated, prescribed, and profited from—some $500 million in revenue every quarter. But it is part of four of the five first-line regimens recommended by the DHHS HIV treatment guidelines, the most prescribed fixed-dose NNRTI, and approved as a prevention pill for preventative use. (Yes, I did vote yes to recommend Truvada for PrEP on the FDA approval on the Antiviral Advisory panel.) It may be so popular because of its potency and tolerability. Yet it has also been linked to accelerated bone loss and increased fracture risk, and those who have kidney problems should steer clear. Gilead will eventually replace it with their newer, shinier better version called Descovy (with TAF) everywhere it is currently used now. (See Descovy.)

Epzicom

DHHS ALTERNATIVE (UNLESS WITH TIVICAY)

abacavir/lamivudine, or **ABC/3TC**

STANDARD DOSE

One tablet once daily, with or without food. Tablet contains 600 mg abacavir and 300 mg lamivudine.

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Approved for children weighing 55 lbs (25 kg) or more. Not recommended for those with decreased kidney function (creatinine clearance less than 50 mL/min), or those with liver problems, because dose adjustments are not possible with this fixed-dose combination.

MANUFACTURER

ViiV Healthcare
viivhealthcare.com
(877) 844-8872

AWP

$1,550.05 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the individual drugs contained in Epzicom—Epivir (lamivudine) and Ziagen (abacavir). Common side effects may include headache, nausea, fatigue, depressed mood, dizziness, diarrhea, and insomnia. Of note is the hypersensitivity reaction (HSR, an allergic-like reaction) warning on abacavir (see Ziagen for details of symptoms). To minimize the risk for HSR, a blood test for HLA-B*5701 (a genetic marker) can identify patients at higher risk for this reaction. A negative HLA-B*5701 test does not mean you won't have HSR, but the risk is reduced to 1% from clinical studies. This test is covered by most insurance and also by LabCorp/ViiV (see co-pay chart). About 90% of HSR occurs within the first six weeks of treatment. Symptoms of HSR usually worsen, very slowly, with every dose. Treatment should be immediately discontinued and you can never take another product containing abacavir, such as Epzicom, Triumeq, Trizivir, or Ziagen, again (called "rechallenging"). Rechallenging could cause a rare life-threatening reaction. (This does not apply to a missed dose when there's no HSR, but talk with your healthcare provider and watch for symptoms if you've stopped the drug for at least a few days.) If you are co-infected with HIV and HBV and you stop Epzicom, your HBV may reactivate and you may experience signs and symptoms of acute HBV. You should be closely monitored by your physician. Some observational studies have seemed to indicate that abacavir may increase the risk of cardiovascular events, including myocardial infarction (MI, or heart attack), in people with greater risk factors (such as smoking, diabetes, high blood pressure, older age, high cholesterol, and drug use), though other studies have found no increased risk. The consensus on whether abacavir truly has this risk has not been reached. People who have high risk for heart disease should be monitored more closely; the decision to stop or never start a regimen containing abacavir is up to you and your provider.

David J. Malebranche, MD, MPH says: Epzicom (ABC/3TC) is a great dual backbone NRTI option for both recommended and alternative regimens. Considerations for clinicians and patients alike are similar as with Ziagen: should only be prescribed to folks who are HLA-B*5701 negative, clinical risk of MI should be considered with patients at high risk despite the data being conflicting in studies, and regimens containing ABC/3TC are recommended only for those with HIV RNA less than 100,000 copies/mL. Epzicom has been a primary option for those with kidney issues or who couldn't tolerate TDF. Now with the approval of the TAF/FTC backbone in many regimens, it will be interesting to see how Epzicom fares in competing for these patients.

Activist Matt Sharp says: An alternative (and competitor) to Truvada is this fixed-dose combination containing Ziagen and Epivir, two nucleoside analogs, especially for those who have or are likely to have kidney issues. Yet it may be a trade-off because for years some studies showed a possible risk of heart attacks with abacavir, though other studies never confirmed this finding. It also may be less effective than Truvada and for people with viral loads greater than 100,000 copies. You can find it, however, in Triumeq, one of the latest STR drugs, containing Tivicay. (See Triumeq.)

POTENTIAL DRUG INTERACTIONS

See the individual drugs contained in Epzicom, Epivir and Ziagen. Do not take with Atripla, Combivir, Complera, Descovy, Emtriva, Epivir, Epivir-HBV, Genvoya, Odefsey, Stribild, Triumeq, Trizivir, Truvada, or Ziagen, since all or part of these medications are already in Epzicom or contain medications from the same drug classes. Tell your provider or pharmacist about all medications, herbal products, and supplements you are taking or thinking of taking, whether they are prescribed or not. Alcohol can increase the levels of abacavir and therefore can increase the possibility of side effects.

Epzicom may be used with hepatitis C drugs such as Daklinza, Epclusa, Harvoni, Olysio, Sovaldi, Viekira Pak, or Zepatier, depending on the third drug in the HIV regimen.

MORE INFORMATION

Triumeq, a single-tablet regimen (STR) containing Tivicay and Epzicom, is a recommended therapy under DHHS HIV guidelines. Otherwise, the guidelines recommend Descovy or Truvada over Epzicom as the backbone for the NRTI component of an HIV drug combination for first-time therapy, with Epzicom listed as an alternative NRTI backbone. One of the reasons abacavir is a DHHS alternative drug is that one study found that abacavir/lamivudine (Epzicom) was inferior to tenofovir/emtricitabine (Truvada) in getting people undetectable when their pre-treatment viral load was over 100,000. However, when combined with Tivicay (dolutegravir), Epzicom performed just as well as Truvada in people with high viral loads (over 100,000). Hence, Triumeq is the only abacavir-containing regimen recommended by DHHS for initial therapy. The lamivudine portion of Epzicom is also used to treat the hepatitis B virus (HBV); see Epivir. See information about generics on the Epivir page.

See package insert for more complete information on potential side effects and interactions.

Emtriva

DHHS RECOMMENDED FOR FIRST-LINE USE (AS A COMPONENT OF DESCOVY OR TRUVADA)

emtricitabine, or **FTC**

STANDARD DOSE

One 200 mg capsule once daily, with or without food. Dosing needs to be adjusted for children and people who have decreased kidney function.

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. It is also available as an oral solution for children any age and adults who are not able to swallow the capsules.

MANUFACTURER

Gilead Sciences, Inc.
gilead.com
(800) GILEAD-5
(445–3235)

AWP

$643.82 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Emtriva is very well tolerated. The most common side effects (rarely seen) may include headache, diarrhea, and nausea. Emtriva also treats hepatitis B virus (HBV); therefore, a person co-infected with HIV and HBV may experience a flare-up of HBV when stopping Emtriva (see "More information"). Skin discoloration (darkening of the skin on the palms and the soles) can occur and was more frequent in children, but is generally mild and otherwise harmless.

POTENTIAL DRUG INTERACTIONS

No significant drug interactions. Do not take Emtriva with Atripla, Combivir, Complera, Descovy, Epivir, Epivir-HBV, Epzicom, Genvoya, Hepsera, Odefsey, Stribild, Triumeq, Trizivir, or Truvada, since they contain emtricitabine or medication from the same drug classes. Emtriva may be used with hepatitis C drugs such as Daklinza, Epclusa, Harvoni, Olysio, Sovaldi, Viekira Pak, or Zepatier, depending on the other components in the HIV regimen.

MORE INFORMATION

Emtriva (emtricitabine) is similar to Epivir (lamivudine); both treat HIV and HBV and have the same resistance profile, meaning that if your virus is resistant to one drug, it will be resistant to the other. Emtriva is active against chronic hepatitis B (though it is not FDA approved for this indication). You should never be treated only for HBV without treatment for HIV. If you have HIV and HBV and your HBV needs treatment, guidelines recommend treatment for both viruses. Emtriva and tenofovir (available as one tablet, either Descovy or Truvada) can be used as the NRTI backbone to treat HIV and HBV simultaneously. However, there are also other HBV treatments that can be combined with HIV meds. If you are co-infected with HIV and HBV and you stop Emtriva, your HBV may reactivate and you may experience signs and symptoms of acute HBV. HBV should be closely monitored by your provider. If your HIV develops resistance to Epivir or Emtriva, it does not mean that your HBV is also resistant to them. Both Descovy and Truvada are recommended NRTI combinations in the Department of Health and Human Services (DHHS) HIV treatment guidelines for first-time therapy. Sometimes, drug resistance that the virus develops against emtricitabine makes the virus less able to reproduce, meaning that it multiplies at a slower rate. It also improves the antiviral activity of Retrovir (zidovudine) and Viread (tenofovir), and for that reason, some providers continue Emtriva treatment in combination with other NRTIs after resistance develops. Emtriva oral solution should be kept in the refrigerator. If kept at room temperature, the oral solution should be used within three months. Emtriva is part of the single-tablet regimens Atripla, Complera, Genvoya, Odefsey, and Stribild. Truvada is approved for HIV treatment and for HIV prevention as PrEP (pre-exposure prophylaxis; go to positivelyaware.com/truvadaforprep). Descovy is not approved for PrEP.

See package insert for more complete information on potential side effects and interactions.

David J. Malebranche, MD, MPH says: Emtriva (FTC) is the longer acting brother of Epivir (3TC) and has, for the most part, taken over as the NRTI that is most commonly paired with TDF, and now TAF. Possibilities of resistance with M184 mutation are still an issue, but side effects have never been a problem with FTC. It enjoys the status of being part of the combination of most of the recommended and alternative regimens for initiating treatment.

Activist Matt Sharp says: Very similar to Epivir (all these "E" drugs, egad!) when first being developed, Emtriva was thought to be just another Epivir look alike, and was just made to make money, not any real treatment advance. But the story got interesting because Gilead ended up purchasing the drug (something it does a good job of) and paired it with tenofovir DF, the powerhouse component in Truvada. The strategy then unfolded into usage in several other newer and widely prescribed blockbuster combination tablets. Another big bonus is that it is also used to treat HIV/hepatitis B co-infection.

Epivir

DHHS ALTERNATIVE (AS A COMPONENT OF EPZICOM) UNLESS IN TRIUMEQ

lamivudine, or **3TC**

STANDARD DOSE

One 300 mg tablet once daily (or one 150 mg tablet twice daily), with or without food.

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Dose should be adjusted for people with kidney impairment. Dose for children 3 months to 16 years of age is 4 mg per 2.2 pounds (1 kg) twice daily to a maximum of 150 mg twice daily. A strawberry/banana-flavored liquid (10 mg/1 mL) is available. Generic is available. Can be used interchangeably with Emtriva.

MANUFACTURER

ViiV Healthcare
viivhealthcare.com
(877) 844-8872

AWP

150 mg or 300 mg
$498.89 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Epivir is very well tolerated. Side effects (though rarely seen) may include headache, nausea, fatigue, insomnia, malaise (general ill feeling), nasal symptoms, and cough. Flare-up of hepatitis B (HBV) in people co-infected with HBV has occurred when Epivir was discontinued because it also treats HBV (see "More information").

POTENTIAL DRUG INTERACTIONS

No significant drug interactions. Do not take Epivir with Atripla, Combivir, Complera, Descovy, Emtriva, Epivir-HBV, Epzicom, Genvoya, Hepsera, Odefsey, Stribild, Triumeq, Trizivir, or Truvada, since they contain Epivir or medication from the same drug class. Epivir may be used with hepatitis C drugs such as Daklinza, Epclusa, Harvoni, Olysio, Sovaldi, Viekira Pak, or Zepatier, depending on the other components in the HIV regimen.

MORE INFORMATION

One benefit of Epivir is that the drug resistance the virus develops against the drug makes the virus less able to reproduce. This mutation also slightly improves the antiviral activity of Retrovir (zidovudine or AZT) and Viread (tenofovir disoproxil fumarate), and for that reason, some doctors will continue to use Epivir after resistance develops. Epivir is also approved for the treatment of hepatitis B virus (HBV), under the brand name Epivir-HBV, which has a lower dose than traditional Epivir. Epivir-HBV is used only in people without HIV. It is important to note that if you have HIV and HBV, you will need to take full-dose Epivir along with a complete HIV regimen to treat both infections. You should never be treated only for HBV without treatment for HIV. Epivir and Viread both work against HBV and HIV and can be used together as the NRTI backbone to increase activity and decrease the risk of HBV drug resistance, but there are other HBV treatments available that can be combined with HIV meds. Truvada, for example, contains Viread and a medication very similar to Epivir, formulated in one pill. If you are co-infected with HIV and HBV and you stop taking Epivir, your HBV may reactivate and you may experience signs and symptoms of acute HBV. You should be closely monitored by your physician. If your HIV develops resistance to lamivudine, it doesn't mean that your HBV is also resistant to it. Lamivudine is also available in four combination products: Combivir (with zidovudine); Epzicom (with abacavir); Trizivir (with zidovudine and abacavir); and Triumeq (with dolutegravir and abacavir).

Epivir is available as generic lamivudine, which should be as effective and well tolerated as the brand name drug Epivir. Some insurers may require patients to take regimens containing generics rather than brand name drugs, including simpler co-formulated products. For example, since both zidovudine (Retrovir) and lamivudine are available in generic form, a person might have to take these two generic pills instead of the fixed-dose combination tablet Combivir. The availability of generics might also limit choices of therapy. For example, newer brand name drugs and co-formulations, such as Genvoya or Triumeq, might be restricted to patients who can't physically tolerate generic regimens.

See package insert for more complete information on potential side effects and interactions.

David J. Malebranche, MD, MPH says: Epivir (3TC) is one of oldest NRTIs around, having enjoyed over 20 years of utility in HIV clinical regimens. Exceptionally well tolerated from a side effect profile perspective, the only drawback is the potential selection of an M184 mutation that can limit its effectiveness, and also that of its longer-acting brother, FTC. However, this same mutation can actually improve the effectiveness of TDF. Concerns over lactic acidosis and lipodystrophy are still present, but this has faded somewhat as more toxic NRTIs (AZT and d4T) have dropped off as viable options for combination therapy. Though not used as a stand-alone drug much anymore, 3TC is still an effective component of Epzicom (ABC/3TC) and Triumeq (DTG/ABC/3TC).

Activist Matt Sharp says: I suppose you could call Epivir the long-term survivor of HIV drugs because it is the oldest antiviral drug still in use. But there is a good reason for its longevity in that it is safe, very effective, and has no significant interactions with other drugs. It does develop resistance in the M184V gene that may cause it to be less effective. However, just having that mutation present makes Epivir-resistant virus more sensitive to other nukes. Weird science, huh? Look for it combined with older fixed-dose drugs and the STR Triumeq.

Viread

DHHS RECOMMENDED
(AS A COMPONENT OF STRIBILD OR TRUVADA)

tenofovir disoproxil fumarate, or **TDF**

STANDARD DOSE

One 300 mg tablet once daily, with or without food. For adults and children 12 years and older weighing at least 77 lbs (35 kg). 150 mg, 200 mg, 250 mg tablets, and oral powder are available for children ages 2 to 12 weighing at least 37 lbs (17 kg); dose is based on weight.

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Dosing frequency needs to be adjusted for people with decreased kidney function. FDA approved for chronic HBV in patients 12 years and older weighing at least 77 pounds (35 kg).

MANUFACTURER

Gilead Sciences, Inc.
Gilead.com
(800) GILEAD-5
(445–3235)

AWP

$1,197.32 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Well tolerated, but may include nausea, diarrhea, vomiting, and gas. Decreases in bone mineral density (BMD) have been observed. BMD monitoring should be considered in people who have a history of bone fracture due to bone disease or are at risk for osteopenia or osteoporosis. Viread may cause kidney toxicities. Creatinine clearance (CrCl) should be assessed before initiating treatment. In addition to CrCl, glucose and protein in the urine and serum phosphorus should be monitored more often in patients at risk for kidney problems. Tell your provider about any pain in extremities, persistent or worsening bone pain and fractures, with or without muscular pain or weakness, as these could be signs of kidney problems. Since Viread is not metabolized by the liver, it is believed there should be minimal impact on individuals with liver disease.

POTENTIAL DRUG INTERACTIONS

Do not take Viread with Atripla, Complera, Descovy, Hepsera, Odefsey, Stribild, Genvoya, or Truvada, since TDF is in these drugs or they contain a similar medication. Viread decreases the levels of Reyataz; therefore, Reyataz 300 mg must be boosted with Norvir 100 mg or Tybost 150 mg (taken together with food) when used in combination with TDF. Kaletra, Prezista/Norvir, and Reyataz/Norvir increase Viread levels, but there is no dose adjustment needed. Patients taking Kaletra, Prezista/Norvir, or Reyataz/Norvir with TDF should be monitored for Viread side effects (including kidney disorders) due to the higher TDF levels. Avoid taking Viread with drugs that negatively affect the kidneys, including chronic use or high doses of NSAIDS (non-steroidal anti-inflammatory drugs, such as Advil, Aleve, ibuprofen, naproxen, or Motrin). Viread may be used with hepatitis C drugs such as Daklinza, Harvoni, Olysio, Sovaldi, Viekira Pak, or Zepatier, depending on the other components in the HIV regimen. Monitor for tenofovir toxicities if used with Epclusa.

David J. Malebranche, MD, MPH says: Viread (TDF) has been on the market for over 15 years, and still is heavily utilized as part of the backbone of many ARV regimens, including many of the STRs. Its strengths lie in its utility in combination regimens and its effectiveness against HBV, which makes it particularly attractive when treating HIV/HBV co-infected patients. When switching to a non-TDF regimen, care must be exercised with our HBV-positive patients who could experience an acute hepatitis flare as a result. Weaknesses include well documented kidney and bone toxicity, which thankfully have been addressed in the approval of another tenofovir pro-drug, TAF, and subsequent incorporation in many combination regimens.

Activist Matt Sharp says: In order to not waste your reading hours, I won't go into details on Viread. You can start saying *arrivederci* to this huge influence on HIV treatment and fading movie star at Gilead. It is such an important ancestor, however, that the company developed and is now marketing a long-hyped, yet even better version called TAF. (See Descovy and Genvoya.)

MORE INFORMATION

TDF with emtricitabine, as Truvada, is a recommended NRTI combination by DHHS HIV treatment guidelines for first-time therapy. A new version of tenofovir, called tenofovir alafenamide (TAF), replaced TDF in certain fixed-dose combinations. Genvoya and Odefsey are two single-tablet regimens containing TAF instead of TDF. Descovy is another version of Truvada, combining emtricitabine with TAF instead of TDF. In clinical trials, TAF had fewer kidney and bone issues than TDF. The NIH reported last year that infants exposed in the womb to TDF may have lower bone mineral content than those exposed to other antivirals. Tenofovir DF was approved in 2012 as part of Truvada for HIV prevention as PrEP (pre-exposure prophylaxis; see Truvada for PrEP page online). Serious kidney problems have been rare and mostly in those with pre-existing kidney disease or taking other kidney-toxic drugs. Two large observational studies found a greater risk of kidney toxicity with TDF than with other HIV meds. It is recommended that individuals with impaired kidney function be monitored closely. Remember that HIV itself has a negative effect on kidneys and bones. TDF is FDA approved for hepatitis B treatment, but should not be used alone by people with both hep B and HIV. If you have HIV and HBV co-infection, you should never be treated for HBV only since guidelines recommend treatment for both viruses to avoid losing HIV treatment options. Truvada can be used as the NRTI backbone to treat HIV and HBV simultaneously; however, HIV treatment requires a third medication. If your HIV develops resistance to TDF or emtricitabine, it doesn't mean that your HBV is also resistant to them. If you have HIV and HBV and you stop TDF, you may experience symptoms of acute HBV. You should be closely monitored by your provider. TDF is part of the single-tablet regimens Atripla, Complera, and Stribild.

See package insert for more complete information on potential side effects and interactions.

Ziagen

DHHS ALTERNATIVE (AS A COMPONENT OF EPZICOM) UNLESS IN TRIUMEQ

abacavir, or **ABC**

STANDARD DOSE

Two 300 mg tablets once daily (or one 300 mg tablet twice daily), with or without food.

Children 3 months and older: Dose varies with weight. Scored tablets and strawberry-banana flavored liquid available.

Dose adjustment is not needed for people with kidney impairment. Dose adjustment is needed for people with mild liver impairment (200 mg twice daily). Abacavir should not be used for people with moderate or severe liver disease.

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose.

MANUFACTURER

ViiV Healthcare
viivhealthcare.com
(877) 844-8872

AWP

$670.37 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

More common side effects may include nausea, vomiting, diarrhea, fatigue, headache, fever, rash, and trouble sleeping. In pediatric patients, the more common side effects were fever and/or chills, nausea and vomiting, skin rashes, and ear/nose/throat infections.

Approximately 8% of people who took abacavir in clinical trials (where screening for HLA-B*5701, a genetic marker associated with abacavir hypersensitivity, was not performed) experienced hypersensitivity reaction (HSR), an allergic-like reaction. To minimize the risk for HSR, a blood test for HLA-B*5701 should be done to identify patients at higher risk for this reaction. This test is covered by most insurance and also by LabCorp/ViiV (see co-pay chart, page 58). If the HLA-B*5701 test is positive, you are at an increased risk for HSR and abacavir should not be used. An allergy to it should be entered in your medical record. A negative HLA-B*5701 test does not mean you won't have HSR, but the risk is very low (1% from clinical studies). Symptoms of HSR usually include some combination of the following: fever, skin rash, malaise (general ill feeling), severe nausea, headache, muscle ache, chills, diarrhea, vomiting, abdominal pain, respiratory symptoms (cough, difficulty breathing, sore throat), and/or joint pain. Symptoms are listed on the patient information sheet and warning card that you receive each time you fill your prescription. You should keep the warning card with you. HSR might be confused with flu, but symptoms of HSR usually worsen, very slowly, with every dose.

People who think they are experiencing HSR must be evaluated by an experienced HIV provider right away before they stop taking abacavir. Do not use a skin patch test to confirm HSR. Symptoms usually resolve after permanent discontinuation. If you develop HSR, abacavir should be stopped and you can never take abacavir or any product containing abacavir (Epzicom, Trizivir, Ziagen, or Triumeq) again (starting again is called rechallenging). Rechallenging can cause a rare life-threatening reaction. This does not apply to a missed dose when there is no HSR, but talk with your healthcare provider and watch for symptoms if you've stopped the drug for a few days, preferably under the observation of others who can call for medical help if you develop symptoms.

Some observational studies seem to suggest that abacavir may increase the risk of cardiovascular events, including myocardial infaction (MI, or heart attack), in people with risk factors (such as older age, smoking, diabetes, high blood pressure, high cholesterol, and drug use), especially within the first 6 months of therapy. However, other studies, including a large meta-analysis, have shown no increase in cardiovascular risk. To date, no consensus has been reached on the association of abacavir with cardiac risk or a possible mechanism for the association. People who have high risk for heart disease are monitored more closely and the decision to stop or never start a regimen containing abacavir is of course up to you and your provider.

POTENTIAL DRUG INTERACTIONS

Tell your provider or pharmacist about all medications, herbal products, and supplements you are taking or thinking of taking, whether they are prescribed or not. Do not take with Epzicom, Triumeq, or Trizivir, since abacavir is already in these medications. Alcohol use increases abacavir levels and may increase side effects.

MORE INFORMATION

One of the reasons abacavir is a DHHS alternative drug is that one study found that abacavir/lamivudine (Epzicom) was inferior to tenofovir/emtricitabine (Truvada) in getting people undetectable when their pre-treatment viral load was over 100,000. However, when combined with Tivicay (dolutegravir), Epzicom performed just as well as Truvada in people with high viral loads (over 100,000). Hence, Triumeq is the only abacavir-containing regimen recommended by DHHS for initial therapy. It is recommended that people with symptoms of acute respiratory disease consider HSR even if another diagnosis such as pneumonia, bronchitis, or flu is possible. FDA researchers reported finding a mechanism for autoimmune drug reactions, including abacavir HSR, and hope it helps improve drug safety in the future. Abacavir is part of Epzicom, Trizivir, and Triumeq; see those pages.

See package insert for more complete information on potential side effects and interactions.

David J. Malebranche, MD, MPH says: Ziagen or abacavir (ABC) has been around almost as long as 3TC, and still represents a viable option for ARV combinations that require safer kidney profiles. ABC has always had a few issues dogging it over the years. First is the hypersensitivity reaction, which, while it can be treated clinically if it occurs, does require HLA-B*5701 testing. Patients positive for HLA-B*5701 should not be prescribed ABC as they are at high risk—negative testing does not fully exclude the possibility of a reaction, but it is low risk, and ABC treatment can be initiated. Secondly, ABC has been previously implicated for higher risk of development of myocardial infarction (MI) in the D:A:D study. Subsequent studies have failed to confirm this finding, so the jury's still out about the definitive association of ABC with risk of MI. Finally, while part of a recommended regimen of ABC/3TC/DTG (Triumeq), it is only recommended for patients with pretreatment HIV RNA less than 100,000. Yet and still, ABC remains a durable and reliable component of various ARV combinations and STRs, despite the requirement of a negative HLA-B*5701 test to initiate therapy.

Activist Matt Sharp says: I have vivid memories years ago of ACT UP Golden Gate leading activist efforts to make this drug available in one of the first expanded access programs. There were many of us who needed a new drug that was not cross-resistant to the first widely used nukes AZT and 3TC. We also ran a small survey in San Francisco to look for side effects from the drug that was being tested in clinical trials. Voila! A hypersensitivity reaction was real and in some cases severe. A blood test was later developed to identify those who carried the genetic variation for the hypersensitivity, warning them to not take the drug. Today some consider Ziagen an important drug, and it is a component of the STR Triumeq—perhaps a good end to a somewhat colorful history.

Edurant

DHHS ALTERNATIVE WITH LIMITATIONS (AS A COMPONENT OF COMPLERA AND ODEFSEY) WITH DESCOVY OR TRUVADA

rilpivirine, or **RPV**

STANDARD DOSE

One 25 mg tablet once daily with a meal, see below. For patients 12 years of age and older weighing at least 77 lbs (35 kg).

Take missed dose as soon as possible with a meal, unless it is closer to the time of your next dose. Do not double up on your next dose. For proper absorption, it must be taken with a meal that you chew—not nutritional drinks or protein shakes. Taking Edurant without food could result in a 40% decrease in the drug absorption and may lead to HIV resistance.

MANUFACTURER

Janssen Therapeutics
edurant.com
(800) JANSSEN
(526-7736)

AWP

$1,160.10 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Most common side effects occurring in 3–5% of study subjects were insomnia, headache, rash, and depressive disorders. Tell your doctor right away if you experience feelings of sadness, hopelessness, anxiety or restlessness, or have suicidal thoughts or actions. A small study showed a higher rate of depressive disorders in adolescents (19.4%—seven out of 36 youths—vs. 9% for adults), which may or may not have been related to Edurant. Skin rash can be serious; call your doctor if you get a rash. Stop Edurant and seek medical help right away if the rash is accompanied by other symptoms such as swelling of face, mouth, tongue, or throat; mouth sores or blisters on body; inflamed eye; fever; dark urine; or pain on the right side of stomach. Two different studies comparing Edurant to Sustiva showed that Edurant was slightly better tolerated. Edurant also has minimal negative effects on "bad" cholesterol, total cholesterol, and triglycerides when compared to Sustiva. Edurant improved "good" cholesterol slightly less than Sustiva. Liver problems can occur with Edurant (even in patients without a history of liver disease).

POTENTIAL DRUG INTERACTIONS

See package insert for the most complete list. Tell your provider or pharmacist about all medications, herbs, and supplements you are taking or thinking of taking, prescribed or not. Edurant should not be taken with other non-nukes or Complera or Odefsey, as the latter two already contain rilpivirine. Cannot be taken with the anti-seizure medications carbamazepine, oxcarbazepine, phenobarbital, and phenytoin; the anti-TB drugs rifampin and rifapentine; proton pump inhibitors (Aciphex, Nexium, Prevacid, Protonix, and Prilosec); or the herb St. John's wort. Do not take with more than one systemic dose of the steroid dexamethasone. Antacids should be taken two hours before or at least four hours after Edurant. Acid-reducing drugs (Pepcid, Tagamet, Zantac, and Axid) should be taken 12 hours before or four hours after an Edurant dose. If administered with rifabutin, the dose of Edurant should be increased to two 25 mg tablets once daily with a meal. When rifabutin is stopped, Edurant dose should be decreased to 25 mg daily. Monitor for worsening of any fungal infections when Edurant is used with anti-fungal medications like fluconazole, itraconazole, ketoconazole, posaconazole, and voriconazole; dose adjustment for these medications may be needed. Use azithromycin when possible instead of the antibiotics clarithromycin, erythromycin, and telithromycin. Methadone levels are reduced slightly and patients should be monitored for symptoms of withdrawal. Should be used with caution when taken with medications with a known risk of torsades de pointes or QT prolongation (these abnormal heart rhythms can make the heart stop). No dose adjustment needed with hepatitis C medications Daklinza, Epclusa, Harvoni, Olysio, Sovaldi, or Zepatier. Cannot be taken with Viekira Pak.

David J. Malebranche, MD, MPH says: Rilpivirine (RPV) came on the market in 2011, and impressed folks with its non-inferiority to EFV in both the ECHO and THRIVE trials. Either combined with two NRTIs or as part of the STRs Complera (RPV/FTC/TDF) or Odefsey (RPV/FTC/TAF), RPV is considered an Alternative Regimen due to its documented higher rates of virologic failure compared to EFV among patients with HIV RNA greater than 100,000 copies/mL. While not having the prevalence or severity of documented neurologic and psychiatric side effects as EFV, up to 9% of patients on RPV in the ECHO and THRIVE trials experienced depressive symptoms, so this should be monitored closely. Additionally, the requirement of taking RPV with a meal of at least 390 calories can be a turn-off for many patients, but this requirement may be loosened slightly once virologic suppression has been achieved. Care must also be taken as RPV is contraindicated in patients taking PPI and used with caution on those on H2 blockers, as reports of significantly reduced drug absorption have emerged. Overall, a suitable NNRTI option for patients with HIV RNA less than 100,000 copies/mL who may have issues with EFV side effects.

Activist Matt Sharp says: Initially approved as a single NNRTI as an alternative to Sustiva, it is used today in the STRs Complera and Odefsey. Talk to your doctor about the confusing resistance and cross-resistance profile. If you're starting HIV treatment with a viral load over 100,000, it's not recommended. Edurant won't be as effective as with those in lower levels. Otherwise well tolerated, it must be taken with food (but avoid antacids).

MORE INFORMATION

Edurant is not recommended for treatment-naïve patients with a pre-treatment viral load greater than 100,000 or CD4 less than 200. ECHO and THRIVE studies showed that Edurant is non-inferior (a term used in scientific research that means the drug is no better or worse than those it's compared to) to Sustiva in efficacy—76% vs. 77% of patients achieved a viral load of less than 50 copies (undetectable) and CD4 count increases of 228 vs. 219 when comparing Edurant and Sustiva, respectively. While its tolerability and safety profiles are advantages for Edurant, the greater potential for virologic failure in patients with high viral loads or low CD4, food restriction, and cross-resistance to the other NNRTIs puts Edurant at a disadvantage for first-time treatment (because patients may not be able to switch to another NNRTI if their HIV develops NNRTI resistant mutations to Edurant). Late last year, non-inferiority at 48 weeks was reported for a two-drug combination of dolutegravir (Tivicay) and rilpivirine (Edurant) in people switched from three or four drug regimens. Dolutegravir's manufacturer called SWORD-1 and SWORD-2 the "first phase III studies to show efficacy of two-drug regimen as maintenance therapy." Participants had to have undetectable viral load at the time of the switch and could not have drug resistance to either of the two medications. The two drugs will be co-formulated into one tablet, and the company plans to file for FDA approval this year. While Sustiva is associated with a risk of birth defects during the first trimester, Edurant can be used in pregnancy, and has been added as a DHHS alternative NNRTI to use in pregnancy.

See package insert for more complete information on potential side effects and interactions.

Sustiva

DHHS ALTERNATIVE (WITH DESCOVY OR AS A COMPONENT OF ATRIPLA)

efavirenz, or **EFV**

STANDARD DOSE

One 600 mg tablet once daily, preferably on an empty stomach at bedtime.

Take missed dose as soon as possible, unless it is closer in time to your next dose. Do not double up on your next dose. Also available in 50 mg and 200 mg capsules.

Approved for adults and children 3 months and older weighing at least 7.7 lbs. (3.5 kg). For children weighing less than 88 lbs. (40 kg), the dose is based on weight. For children weighing at least 88 lbs., use the standard adult dose. For those who can't swallow capsules, administer by capsule sprinkle method. See below or drug label for instructions or watch video at sustiva.com.

MANUFACTURER

Bristol-Myers Squibb
bms.com
(800) 321-1335

AWP

$1,176.74 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Central nervous system (CNS) symptoms (dizziness, insomnia, impaired concentration, abnormal or vivid dreams, and hallucinations) are most common at the start of treatment and usually diminish in two to four weeks. Bedtime dosing on an empty stomach can help reduce symptoms. Less common psychiatric symptoms (catatonia, depression, suicidal thoughts or actions, aggression, paranoid/manic reactions) may also occur. Additional side effects may include rash, nausea, vomiting, diarrhea, and fever. Rash in children is more common and more severe. Efavirenz may raise levels of triglycerides (fat in the blood) and cholesterol. It also may lead to false positive urine tests for marijuana; a confirmatory test is available. Risk of birth defects (see Atripla). Regular monitoring for increased liver enzyme levels is recommended initially and during treatment for people with hepatitis B/C or liver disease. Use with caution in mild liver impairment; not recommended with moderate or severe liver impairment.

POTENTIAL DRUG INTERACTIONS

See package insert for the most complete list. Tell your provider or pharmacist about all medications, herbals, supplements, and over-the-counter products you are taking or thinking of taking. Sustiva should not be taken with other NNRTIs or medications that contain them (Atripla and Complera). Do not take Sustiva with midazolam, pimozide, ergot derivatives, St. John's wort, or triazolam. Sustiva may affect warfarin levels. Sustiva can decrease levels of buprenorphine and methadone—monitor for withdrawal. Increase Kaletra to two 200/50 mg tablets plus one 100/25 mg tablet twice daily (total 1000/250 mg per day) with food when taken with Sustiva. Kaletra cannot be taken once daily with Sustiva. When using with Tivicay, increase the Tivicay dose to 50 mg twice daily. Treatment-experienced people should not take Reyataz with Sustiva, but for treatment-naïve people, Reyataz once-daily dose should be 400 mg with Norvir boost. Boost once-daily Lexiva with 300 mg Norvir. Increase Selzentry to 600 mg twice daily. Increase the Sustiva dose to 800 mg once daily with rifampin for people weighing 110 pounds (50 kg) or more. Rifabutin can be used as an alternative, but dose adjustment is needed. When taken with anticonvulsants carbamazepine, phenobarbital, or phenytoin, periodic monitoring of anticonvulsant and Sustiva levels should be done or alternative anti-seizure drugs, such as levetiracetam, should be considered. Effectiveness of birth control pills may be decreased; consider the use of other contraceptives. Closer monitoring and dose adjustments may be required with azole antifungal agents posaconazole (avoid unless benefit outweighs potential risk) and itraconazole (should consider an alternative, as no dose recommendation can be made). The dose of voriconazole should be increased to 400 mg every 12 hours and the Sustiva dose should be decreased to 300 mg once daily using capsules; tablets should not be broken. Monitor effectiveness of clarithromycin or consider azithromycin. Levels of immunosuppressants should be monitored when starting or stopping Sustiva. Cardizem, Lipitor, Pravachol, and Zocor doses may need to be adjusted. Titrate dose of bupropion and sertraline based on clinical response. No dose adjustment with Harvoni or Sovaldi. Increase Daklinza dose to 90 mg with Sustiva. Don't take with Epclusa, Olysio, Viekira Pak, or Zepatier.

David J. Malebranche, MD, MPH says: Efavirenz (EFV) has been around almost 20 years, and has enjoyed robust efficacy as superior or non-inferior to many other comparator regimens when combined with two NRTIs. EFV is part of Atripla, the first STR introduced in 2006, and served as the mainstay of once-a-day regimens for years. randomized controlled trials and anecdotal experiences with neurologic and psychiatric side effects, including vivid dreams and suicidality, have been a real issue with Sustiva over the years and have affected its demotion to Alternative Regimen category in recent years. Many medical providers may still have patients on Sustiva-based regimens who are doing well—not every patient experiences its potential side effects, so best to discuss and be open to the "if it ain't broke, don't fix it" approach that patients may have. Some say they love the vivid dreams they have and its convenient evening dosing is an advantage to their work and personal lifestyle. Listen to them.

Activist Matt Sharp says: Considered by some to be a breakthrough drug when it was approved, Sustiva is very potent and stays in the body a long time. So many people have benefitted from Sustiva, even before it was added to the first fixed-dose, once-daily drug Atripla, which has been around for over 10 years. Unfortunately, despite its success, it carries with it the unusual baggage of central nervous system side effects that can range from mild dreams to dizziness to depression. I first took Sustiva as three tablets before bedtime. I woke the morning after feeling like I was on a stormy sea outside the Golden Gate Bridge. Later, doctors informed their patients to spread the pills out throughout the day, since no one was used to once daily HIV treatment back then. People who are in drug recovery were urged to stay away for fear that the hallucinations some experienced might trigger relapse. Today there are good alternatives, especially for those who cannot tolerate the Titanic-like nightmares.

MORE INFORMATION

According to DHHS HIV treatment guidelines, Sustiva is an alternative drug, also used as part of the Atripla single-tablet regimen. If you can't sleep, ask about switching the timing of your dose little by little until it's taken in the daytime. A rare genetic trait affecting drug metabolism of Sustiva, leading to a higher rate of side effects, occurs more in African Americans. See package insert for more complete information on potential side effects and interactions.

Intelence

ONLY FOR TREATMENT-EXPERIENCED INDIVIDUALS

etravirine, or **ETR**

STANDARD DOSE

One 200 mg tablet, twice daily, with food. 25 mg tablets available for children ages 6–18 years weighing at least 35 lbs (16 kg); dose based on weight.

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. People unable to swallow pills (Intelence tablets are chalky) can dissolve tablets in 5 mL (1 teaspoon) of water (or at least enough liquid to cover the medication), stir well until the water looks milky, add more water if desired—can use orange juice or milk as an alternative (always placing tablets in water first). Avoid grapefruit juice and warm (over 104° F) or carbonated beverages. Drink it immediately, rinse the glass several times with water, orange juice, or milk and completely swallow the rinse each time to make sure the entire dose is taken. See commentary in the More Information section.

MANUFACTURER

Janssen Therapeutics
intelence.com
(800) JANSSEN
(526-7736)

AWP

$1,411.42 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Generally well tolerated, but most common side effects may include mild rash and diarrhea. Rare side effects include severe rash and peripheral neuropathy. The FDA advises, "Discontinue Intelence immediately if signs or symptoms of severe skin reactions or hypersensitivity reactions develop (including, but not limited to, severe rash or rash accompanied by fever, malaise [general ill feeling], fatigue, muscle or joint aches, blisters, oral lesions, conjunctivitis [eye inflammation], facial edema [swelling], hepatitis, and eosinophilia [increased levels of the white blood cells called eosinophils, a sign of an allergic reaction])." In addition, levels of liver enzymes called transaminases should be monitored. Rash is associated with all of the current NNRTIs, but if you develop a rash from Intelence, you may still be able to take one of the other NNRTIs.

POTENTIAL DRUG INTERACTIONS

Refer to package insert for complete list. Tell your provider or pharmacist about all medications, herbal products, and supplements you are taking or thinking of taking, prescribed or not. Intelence should not be taken with other NNRTIs or medications that contain them (Atripla, Complera, and Odefsey). If Intelence is taken in combination with a protease inhibitor, it must be boosted with low-dose Norvir. Avoid Intelence in combination with the following PIs: Boosted Aptivus or Lexiva. It should be avoided with Tivicay unless administered with one of the following combinations: Reyataz/Norvir, Prezista/Norvir, or Kaletra. Taking it in combination with Selzentry requires a Selzentry dose adjustment to 600 mg twice daily when used without a boosted PI and 150 mg twice daily when used with a boosted PI. In people who've failed therapy with other NNRTIs, Intelence should not be taken with NRTIs alone. Do not take Intelence with Tegretol, Luminal, Dilantin, Priftin, Rifadin, or the herb St. John's wort. Use with caution when combined with the antifungals Diflucan and Vfend. Dose adjustments of the antifungals ketoconazole, itraconazole, and posaconazole may be needed. Dosage adjustments of certain cholesterol medications may be needed based on clinical response, including Lipitor, Lescol, Mevacor, Livalo, and Zocor.

Monitor the effectiveness of Coumadin (warfarin) and adjust dose as needed based on clinical response. Alternatives to Plavix should be considered when used with Intelence. Alternatives to clarithromycin, such as azithromycin, should be considered for treatment of MAC. Lower Valium dose may be needed. Use caution with systemic dexamethasone or consider alternatives. Intelence can be taken with Mycobutin 300 mg daily; however, it should be avoided by those who are also taking a boosted PI. Intelence can be safely combined with methadone or buprenorphine with additional monitoring for potential signs of withdrawal. Intelence can also be safely combined with Viagra, Cialis, and Levitra, though a dosage adjustment of Viagra may be necessary. Can be taken with Daklinza (increase Daklinza dose to 90 mg). Interactions with Sovaldi and Harvoni have not been studied; but based on the metabolism, a clinically significant interaction is not expected. Taking with Olysio, Viekira Pak, or Zepatier is not recommended.

David J. Malebranche, MD, MPH says: Etravirine (ETR) is the one NNRTI that has demonstrated effectiveness and utility for patients who have already developed resistance to EFV or Viramune (NVP). Primarily used in treatment-experienced patients with NNRTI resistance, the DUET 1 and 2 studies showed that compared with placebo, ETR-based therapy with DRV/r and 2 NRTIs showed significantly more full virologic suppression (60% vs. 41%). While these findings were promising, the studies also found that the more NNRTI mutations found, the less robust log reduction in viral load was witnessed. Disadvantages with ETR include twice-a-day dosing and risk for two severe side effects: toxic epidermal necrolysis (TEN) and drug rash with eosinophilia and systemic symptoms (DRESS). These side effects can be managed by stopping ETR and the administration of corticosteroids, but nonetheless make it a less appealing option than just switching ARV classes (to PI or INSTI-based) when NNRTI resistance is confirmed.

Activist Matt Sharp says: Another second-generation NNRTI shown to be very effective in reducing viral load in people who were resistant to Sustiva and nevirapine, two earlier drugs from the same class. This drug came along painfully slow, yet at an important time in the history of drug development. Although it is a big chalky pill to swallow, the drug also has complex drug-drug interactions, so if you're thinking about taking it, you should talk to your prescriber first. In addition, the fewer non-nuke resistance mutations in the reverse transcriptase gene the better and Intelence works best when combined with other drugs to which HIV is fully sensitive. Make sure your doctor understands your mutation pattern before you start.

MORE INFORMATION

This second-generation NNRTI was developed to have a higher genetic barrier to drug resistance. It has shown significant viral load reduction in people with drug resistance to Sustiva or Viramune. The older NNRTIs can develop resistance quickly, requiring only one viral mutation. For patients who have had virologic failure on an NNRTI-containing regimen, do not use Intelence in combination with a nucleoside backbone alone. Although taking once daily is not FDA approved, some providers are prescribing Intelence once daily (2 of the 200 mg tablets) based on clinical trials that showed that once-daily Intelence was not inferior to Sustiva-based regimens. The once-daily dosing may improve patient adherence. Some patients complain of hard-to-swallow, large chalky pills; see dissolving instructions in dose section. See package insert for more complete information on potential side effects and interactions.

Selzentry

USED ONLY IN CERTAIN SITUATIONS

maraviroc, or **MVC**

STANDARD DOSE

The recommended dose varies, depending on other medications being taken, kidney function, and symptoms of orthostatic hypotension (feeling faint or dizzy when sitting or standing up too quickly), but will be either 150, 300, or 600 mg twice daily (available in 150 mg and 300 mg tablets). Approved for children at least two years old weighing at least 22 pounds (10 kg); dose depends on weight. Available in a 20 mg/mL oral solution as well as 25 mg and 75 mg tablets. Can be taken with or without food. Your provider or pharmacist can determine which medications will affect Selzentry levels and recommend the appropriate dose for you. See Potential Drug Interactions.

Take missed dose as soon as possible, unless it is closer in time to your next dose. Do not double up on your next dose. Before you start Selzentry, you will need a specific blood test (a tropism assay: Trofile, Trofile DNA, or HIV-1 Coreceptor Tropism with Reflex to UDS) to determine if this medication will work for you. Results of a phenotypic tropism test (Trofile or Trofile DNA) may take up to a month. Genotypic tests are also available and may provide a faster and less expensive alternative. Selzentry only works for those people with CCR5-tropic virus.

MANUFACTURER

ViiV Healthcare
viivhealthcare.com
(877) 844-8872

AWP

$1,679.68 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

The most common side effects include cough, fever, cold, rash, muscle and joint pain, stomach pain, dizziness, and trouble sleeping. Other less common side effects may include allergic reactions, liver toxicity, and heart problems in those with a history of heart disease. Rarely, Selzentry can cause dizziness or fainting when standing up due to low blood pressure. In March 2014, the FDA updated the Selzentry label stating, "Caution should be used when administering Selzentry in patients with a history of or risk factors for postural hypotension, cardiovascular comorbidities, or on concomitant medication known to lower blood pressure. Patients with cardiovascular comorbidities could be at increased risk of cardiovascular adverse events triggered by postural hypotension." Stop taking Selzentry and contact your provider right away if you develop a rash, yellowing of your eyes or skin, dark urine, vomiting, or upper stomach pain. Selzentry should not be used in people with severe or end-stage kidney disease who are taking medications that can affect the levels of Selzentry (check with your provider). Selzentry affects immune system cells and could possibly increase the risk of infections and cancer, although this has not been observed in studies up to five years of follow-up, and some data indicate it may be beneficial in cancer or for preventing metastasis (the spread of cancer to other parts of the body).

POTENTIAL DRUG INTERACTIONS

See package insert for the most complete list. Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. Dose adjustments with other medications and anti-HIV drugs include: 150 mg twice daily if taken with medications that increase the levels of Selzentry such as boosted protease inhibitors (except for Aptivus), Stribild, Genvoya, Tybost, Rescriptor, clarithromycin, and itraconazole; 300 mg twice daily if taken with Aptivus, Viramune, Isentress, Tivicay, Triumeq, Fuzeon, and all of the NRTIs and medications that do not affect the levels of Selzentry; and 600 mg twice daily if taken with medications that decrease the levels of Selzentry such as Atripla, Sustiva, Intelence, rifampin, and some anti-convulsants such as carbamazepine (Tegretol), phenobarbital, and phenytoin (Dilantin). Likely dose with rifapentine is 600 mg twice daily, but use with caution. Not recommended with St. John's wort. Selzentry may be co-administered with the hepatitis C medications Sovaldi, Olysio, Harvoni, and Daklinza at a dose of 300 mg twice daily, however, ledipasvir (in Harvoni) may have potential to increase Selzentry levels.

David J. Malebranche, MD, MPH says: Selzentry or maraviroc (MCV) has been with us for a decade, but unfortunately has never lived up to the initial hype accompanied with its approval. MCV is a CCR5 receptor blocker, preventing HIV from attaching to the CCR5 receptor on the T-cell to facilitate entry into the cell. While conceptually an attractive option, initiation of MCV in combination therapy requires blood testing for receptor tropism to ensure patients are CCR5 tropic to know that MVC will actually work. CXCR4 tropic virus, whether mixed with CCR5 or not, can navigate around the MVC blockade to still gain entry to T-cells. Anecdotal reports have even noted that CCR5 tropic virus has mutated to mixed CCR5/CXCR4 tropism in as short as weeks after patients have gained entry into a clinical trial or treatment facility. This issue before even starting the medication, combined with its twice-a-day dosing schedule, has made it difficult to even get off the ground for consideration with ARV-naïve patients, and relegates its usefulness only when considering ARV regimen failure.

Activist Matt Sharp says: This drug is an entry inhibitor that works to block the CCR5 co-receptor, one of the specific locks that need to be opened before HIV can enter into the cell. Initially it was hoped it would be an important new drug but perhaps got lost in the shuffle of all its competitors that simply worked better to control HIV. It did seem to show an immune effect as CD4 cells appeared to rise despite little viral load decline, compared to other antiretroviral drugs. There were other distractions from its overall success in joining the HIV armamentarium, yet today it can be useful for regimens that are a bit weak and need a new drug from a new class to have a better outcome. And despite its lackluster viral load results, the discovery of CCR5 and associated drug targets has led to an important focus in gene therapy HIV cure trials.

MORE INFORMATION

Selzentry is now generally recommended only when anti-HIV medications from other classes cannot be used or when a new class of medication is needed to construct a treatment regimen for patients who have drug resistance. Complex dosing, the need for a tropism test, and competition from newer drugs have dimmed some of the initial enthusiasm for this drug. In latest results with ibalizumab, an experimental medication for people with extensive HIV drug resistance that is expected to be available as an orphan drug this year, nearly 10 of 40 people in a clinical trial used maraviroc to create a viable new regimen. Viral tropism refers to the types of HIV that a person can have, CCR5 (R5), CXCR4 (X4), or Dual-Mix Tropic (R5 and X4). Selzentry blocks CCR5, a receptor on the outside of a cell, and shuts down this point of entry for the virus. Most people are infected with R5 virus initially, and then over time, X4 and mixed viruses may predominate. Blocking R5 with Selzentry does not cause a shift to X4 or negatively affect disease progression or CD4 count in people whose virus can use dual-mix. In the MERIT clinical trial, the initial analysis suggested that Selzentry was inferior to Sustiva in getting people's viral loads to less than 50 copies (undetectable), but a re-analysis of the data with a more sensitive tropism test showed the regimens to be comparable in achieving undetectable viral loads in treatment-naïve participants at 96 weeks, leading to FDA approval for this group. The tropism test needed is now generally paid for by public health departments, Medicare, and private insurance. ViiV may cover the payment for the Trofile test if someone is ADAP-eligible and insurance doesn't cover the test. Selzentry seems to have minimal impact on lipid levels.

See package insert for more complete information on potential side effects and interactions.

TRIUMEQ is a once-a-day pill used to treat HIV-1. In some people, TRIUMEQ should not be used by itself. Take TRIUMEQ exactly as your healthcare provider tells you.

APPROVED USES

TRIUMEQ is a prescription HIV-1 (Human Immunodeficiency Virus-type 1) medicine used alone or with other antiretroviral medicines to treat HIV-1 infection in adults. HIV-1 is the virus that causes AIDS. TRIUMEQ is not for use by itself in people who have or have had resistance to abacavir, dolutegravir, or lamivudine. TRIUMEQ should not be used in children under the age of 18.

TRIUMEQ does not cure HIV-1 or AIDS. You must keep taking HIV-1 medicines to control HIV-1 infection and decrease HIV-related illnesses.

IMPORTANT SAFETY INFORMATION

What is the most important information I should know about TRIUMEQ?

TRIUMEQ can cause serious side effects, including:

- **Serious allergic reactions (hypersensitivity reaction)** that can cause death have happened with TRIUMEQ and other abacavir-containing products. Your risk of this allergic reaction to abacavir is much higher if you have a gene variation called HLA-B*5701. Your healthcare provider can determine with a blood test if you have this gene variation. **If you get symptoms from 2 or more of the following groups while taking TRIUMEQ, call your healthcare provider right away: 1. fever; 2. rash; 3. nausea, vomiting, diarrhea, or stomach pain; 4. generally ill feeling, extreme tiredness, or achiness; 5. shortness of breath, cough, or sore throat.** Your pharmacist will give you a Warning Card with a list of these symptoms. **Carry this Warning Card with you at all times.**

  If you stop taking TRIUMEQ because of an allergic reaction, never take TRIUMEQ or any other abacavir- or dolutegravir-containing medicines again. If you take TRIUMEQ or any other abacavir-containing medicine again after you have had an allergic reaction, **within hours** you may get **life-threatening symptoms** that may include **very low blood pressure** or **death**. If you stop TRIUMEQ for any other reason, even for a few days, and you are not allergic to TRIUMEQ, talk with your healthcare provider before taking it again. Taking TRIUMEQ again can cause a serious allergic or life-threatening reaction, even if you never had an allergic reaction to it before. **If your healthcare provider tells you that you can take TRIUMEQ again, start taking it when you are around medical help or people who can call a healthcare provider if you need one.**
- **A buildup of acid in your blood (lactic acidosis).** Lactic acidosis can happen in some people who take TRIUMEQ. This serious medical emergency can cause death. **Call your healthcare provider right away if you** feel very weak or tired; have unusual muscle pain; have trouble breathing; have stomach pain with nausea and vomiting; feel cold, especially in your arms and legs; feel dizzy/light-headed; or have a fast/irregular heartbeat.
- **Serious liver problems** can happen in people who take TRIUMEQ. In some cases, these serious liver problems can lead to death. **You may be more likely to get lactic acidosis or serious liver problems if you are female, very overweight (obese), or have been taking nucleoside analogue medicines for a long time. Call your healthcare provider right away if you get any of the following signs or symptoms:**
  - yellow skin, or the white part of the eyes turns yellow (jaundice); dark urine; light-colored stools; loss of appetite for several days or longer; nausea; pain, aching, or tenderness on the right side of your stomach area
- **Worsening of hepatitis B virus in people who have HIV-1 infection.** If you have HIV-1 and hepatitis B virus (HBV), your HBV may get worse (flare-up) if you stop taking TRIUMEQ. A "flare-up" is when your HBV suddenly returns in a worse way than before. Worsening liver disease can be serious and may lead to death. Do not stop taking TRIUMEQ without first talking to your healthcare provider, so he or she can monitor your health.
- **Resistant hepatitis B virus.** If you have HIV-1 and hepatitis B, the hepatitis B virus can change (mutate) during your treatment with TRIUMEQ and become harder to treat (resistant).
- **Use with interferon and ribavirin-based regimens.** If you're taking TRIUMEQ and interferon, with or without ribavirin, tell your healthcare provider about any new symptoms. Worsening of liver disease that has caused death has happened in people infected with both HIV-1 and hepatitis C who were taking antiretroviral medicines and interferon.

Who should not take TRIUMEQ?

- **Do not take TRIUMEQ if you:**
  - have the HLA-B*5701 gene variation
  - are allergic to abacavir, dolutegravir, or any of the ingredients in TRIUMEQ
  - take dofetilide (Tikosyn®)
  - have liver or kidney problems

What are other possible side effects of TRIUMEQ?

- People with a history of hepatitis B or C virus may have an increased risk of developing new or worsening changes in certain liver tests during treatment with TRIUMEQ. Your healthcare provider may do tests to check your liver function before and during treatment with TRIUMEQ.
- When you start taking HIV-1 medicines, your immune system may get stronger and begin to fight infections that have been hidden in your body for a long time. Tell your healthcare provider right away if you start having new symptoms after you start taking TRIUMEQ.
- Changes in body fat can happen in people who take HIV-1 medicines.
- Some HIV-1 medicines, including TRIUMEQ, may increase your risk of heart attack.

The most common side effects of TRIUMEQ include: trouble sleeping, headache, tiredness

These are not all the possible side effects of TRIUMEQ. Tell your healthcare provider if you have any side effect that bothers you or that does not go away.

What should I tell my healthcare provider before taking TRIUMEQ?

- **Before you take TRIUMEQ, tell your healthcare provider if you:**
  - have been tested and know whether or not you have a gene variation called HLA-B*5701
  - have or have had liver problems, including hepatitis B or C infection; have kidney problems; have heart problems, smoke, or have diseases that increase your risk of heart disease such as high blood pressure, high cholesterol, or diabetes; drink alcohol or take medicines that contain alcohol
  - are pregnant or plan to become pregnant. It is not known if TRIUMEQ will harm your unborn baby
  - are breastfeeding or plan to breastfeed. **Do not breastfeed if you take TRIUMEQ**
- **You should not take TRIUMEQ if you also take:**
  - abacavir (EPZICOM®, TRIZIVIR®, or ZIAGEN®)
  - lamivudine (COMBIVIR®, Dutrebis™, EPIVIR®, EPIVIR-HBV®, EPZICOM, or TRIZIVIR)
  - emtricitabine (Emtriva®, Atripla®, Complera®, Stribild®, or Truvada®)

Important Safety Information continued on next page

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ViiV Healthcare

If you don't have prescription coverage and can't afford your medicines, visit ViivHealthcareForYou.com or call the ViiV Healthcare Response Center 1-877-844-8872

ViiV Healthcare for you

Real patients with HIV-1 taking TRIUMEQ as of 2014 or later. Individual results may vary.

Individuals compensated for their time by ViiV Healthcare.

- **Tell your healthcare provider about all the medicines you take,** including prescription and over-the-counter medicines, vitamins, and herbal supplements (for example, antacids or laxatives; vitamins such as iron or calcium supplements; anti-seizure medicines; other medicines to treat HIV-1, hepatitis, or tuberculosis; metformin; methadone; or St. John's wort). Some medicines interact with TRIUMEQ. **Keep a list of your medicines to show your healthcare provider and pharmacist. Do not start taking a new medicine without telling your healthcare provider.**

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch, or call 1-800-FDA-1088.

Please see Important Facts about TRIUMEQ on the following pages.

Ask your doctor about

Triumeq®

abacavir 600 mg/dolutegravir 50 mg/ lamivudine 300 mg tablets

learn more at **triumeq.com**

Triumeq®
abacavir 600 mg/dolutegravir 50 mg/
lamivudine 300 mg tablets

(TRI-u-meck)

IMPORTANT FACTS

This is only a brief summary of important information about TRIUMEQ and does not replace talking to your healthcare provider about your condition and your treatment.

MOST IMPORTANT INFORMATION ABOUT TRIUMEQ

TRIUMEQ® may cause serious side effects, including:

- **Serious allergic reactions (hypersensitivity reaction)** that can cause death have happened with TRIUMEQ and other abacavir-containing products. Your risk of this allergic reaction to abacavir is much higher if you have a gene variation called HLA-B*5701. Your healthcare provider can determine with a blood test if you have this gene variation. **If you get symptoms from 2 or more of the following groups while taking TRIUMEQ, call your healthcare provider right away: 1. fever; 2. rash; 3. nausea, vomiting, diarrhea, or stomach pain; 4. generally ill feeling, extreme tiredness, or achiness; 5. shortness of breath, cough, or sore throat.** A list of these symptoms is on the Warning Card your pharmacist gives you. **Carry this Warning Card with you at all times.**
- **If you stop taking TRIUMEQ because of an allergic reaction, never take TRIUMEQ or any other abacavir- or dolutegravir-containing medicines again.** If you take TRIUMEQ or any other abacavir-containing medicine again after you have had an allergic reaction, **within hours** you may get **life-threatening symptoms** that may include **very low blood pressure** or **death**. If you stop TRIUMEQ for any other reason, even for a few days, and you are not allergic to TRIUMEQ, talk with your healthcare provider before taking it again. Taking TRIUMEQ again can cause a serious allergic or life-threatening reaction, even if you never had an allergic reaction to it before. **If your healthcare provider tells you that you can take TRIUMEQ again, start taking it when you are around medical help or people who can call a healthcare provider if you need one.**
- **Build-up of lactic acid in your blood (lactic acidosis),** which is a serious medical emergency that can lead to death. **Call your healthcare provider right away if you have any of these symptoms:** feeling very weak or tired, unusual muscle pain, trouble breathing, stomach pain with nausea or vomiting, feeling cold (especially in your arms and legs), feeling dizzy or lightheaded, and/or a fast or irregular heartbeat.
- **Serious liver problems,** which in some cases can lead to death. **Call your healthcare provider right away if you have any of these symptoms:** your skin or the white part of your eyes turns yellow (jaundice), dark "tea-colored" urine, light-colored stools (bowel movements), loss of appetite for several days or longer, nausea, and/or stomach pain on the right side.

You may be more likely to get lactic acidosis or severe liver problems if you are female, very overweight, or have been taking nucleoside analogues for a long time.

- **Worsening of Hepatitis B (HBV) infection.** If you have both HIV-1 and HBV, your HBV may suddenly get worse if you stop taking TRIUMEQ. Do not stop taking TRIUMEQ without first talking to your healthcare provider, as they will need to check your health regularly for several months.
- **Resistant HBV.** If you have HIV-1 and HBV, the HBV can change (mutate) while you're on TRIUMEQ and become harder to treat (resistant).
- **Use with interferon and ribavirin-based regimens.** Worsening of liver disease that has caused death has happened in people infected with both HIV-1 and hepatitis C virus who are taking antiretroviral medicines and are also being treated for hepatitis C with interferon with or without ribavirin. If you are taking TRIUMEQ and interferon with or without ribavirin, tell your HCP if you have any new symptoms.

ABOUT TRIUMEQ

- TRIUMEQ is a prescription HIV-1 medicine used alone or with other antiretroviral medicines to treat HIV-1 infection in adults. TRIUMEQ is not for use by itself in people who have or have had resistance to abacavir, dolutegravir, or lamivudine. TRIUMEQ should not be used in children under the age of 18.
- **TRIUMEQ does not cure HIV-1 infection or AIDS.** You must keep taking HIV-1 medicines to control HIV-1 infection and decrease HIV-related illnesses.

DO NOT TAKE TRIUMEQ IF YOU

- have a certain type of gene variation called the HLA-B*5701 allele. Your HCP will test you for this before prescribing treatment with TRIUMEQ.
- are allergic to abacavir, dolutegravir, or any of the ingredients in TRIUMEQ. See the full Medication Guide for a complete list of ingredients in TRIUMEQ.
- take dofetilide (Tikosyn®). Taking TRIUMEQ and dofetilide (Tikosyn) can cause side effects that may be life-threatening.
- have liver or kidney problems.
- If you also take: abacavir (EPZICOM, TRIZIVIR, or ZIAGEN); lamivudine (COMBIVIR®, Dutrebis™, EPIVIR®, EPIVIR-HBV®, EPZICOM, or TRIZIVIR); emtricitabine (Atripla®, Complera®, Emtriva®, Stribild®, or Truvada®) abacavir (EPZICOM, TRIZIVIR, or ZIAGEN)

BEFORE TAKING TRIUMEQ

Tell your healthcare provider if you:

- have been tested and know if you have a particular gene variation called HLA-B*5701.
- have or had any kidney or liver problems, including hepatitis B or C virus infection.
- have heart problems, smoke, or have diseases that increase your risk of heart disease such as high blood pressure, high cholesterol, or diabetes.
- drink alcohol or take medicines that contain alcohol.
- are pregnant or plan to become pregnant. It is not known if TRIUMEQ will harm your unborn baby.
- are breastfeeding (nursing) or plan to breastfeed. **Do not breastfeed if you have HIV-1** because of the risk of passing HIV-1 to your baby.

Tell your healthcare provider about all the medicines you take:

- Keep a list that includes all prescription and over-the-counter medicines, vitamins, and herbal supplements, and show it to your healthcare provider and pharmacist.
- Ask your healthcare provider or pharmacist about medicines that should not be taken with TRIUMEQ. **Do not start taking a new medicine without telling your healthcare provider**

Triumeq®
abacavir 600 mg/dolutegravir 50 mg/
lamivudine 300 mg tablets

IMPORTANT FACTS (cont'd)

MEDICINES THAT MIGHT INTERACT WITH TRIUMEQ

- antacids, laxatives, or other medicines that contain aluminum, magnesium, sucralfate (Carafate®), or buffered medicines. TRIUMEQ should be taken at least 2 hours before or 6 hours after you take these medicines.
- iron or calcium supplements taken by mouth may be taken at the same time with TRIUMEQ if taken with food. Otherwise, TRIUMEQ should be taken at least 2 hours before or 6 hours after you take these medicines
- anti-seizure medicines: oxcarbazepine (Trileptal®), phenytoin (Dilantin®, Dilantin®-125, Phenytek®), phenobarbital, carbamazepine (Carbatrol®, Equetro®, Tegretol®, Tegretol®-XR, Teril®, Epitol®)
- any other medicine to treat HIV-1, medicines used to treat hepatitis virus infections (such as interferon or ribavirin), a medicine that contains metformin, methadone, rifampin (Rifater®, Rifamate®, Rimactane®, Rifadin®), St. John's wort *(Hypericum perforatum)*

POSSIBLE SIDE EFFECTS OF TRIUMEQ

TRIUMEQ can cause serious side effects including:

- See "What is the most important information about TRIUMEQ?" section
- Changes in liver tests.
- Changes in your immune system
- Changes in body fat
- Some HIV-1 medicines including TRIUMEQ may increase your risk of heart attack.

(cont'd)

The most common side effects of TRIUMEQ are: trouble sleeping, headache, and tiredness

These are not all the possible side effects of TRIUMEQ. Tell your healthcare provider right away if you have any new symptoms while taking TRIUMEQ.

Your healthcare provider will need to do tests to monitor your health before and during treatment with TRIUMEQ.

You may report side effects to FDA at 1-800-FDA-1088.

GET MORE INFORMATION

- Talk to your healthcare provider or pharmacist
- Go to TRIUMEQ.com or call 1-877-844-8872, where you can also get FDA-approved product labeling

April 2016 TRM:4MG

Egrifta

tesamorelin for injection

STANDARD DOSE
2 mg via subcutaneous (under the skin) injection once daily in the abdomen, rotating injection sites and avoiding scar tissue, bruises, and the navel (see step-by-step video at egrifta.com and this page for more information).

MANUFACTURER
Theratechnologies, Inc.
egrifta.com
Egrifta Assist:
1-844-EGRIFTA
(1-844-347-4382)

AWP
$5,100.00 / month

A potential complication of HIV, antiretroviral therapy, or both may be changes in the distribution of adipose tissue (fat), otherwise known as lipodystrophy; previous reports of prevalence in the U.S. varied widely, anywhere from 2–60% of all HIV-positive patients. Abdominal lipohypertrophy (a form of lipodystrophy) is the accumulation of excess visceral adipose tissue (VAT)—deep belly fat surrounding the liver, stomach, and other abdominal organs. Egrifta is the first, and only, FDA approved medication to reduce VAT. This is different from subcutaneous fat. Unlike growth hormone products, Egrifta is an analogue of human growth hormone-releasing factor (GRF), which stimulates the pituitary gland to produce and secrete the body's own growth hormone. Egrifta reduces VAT while preserving subcutaneous fat. The effect of this agent appears to be greatest within the first three to six months of initiation.

Two Phase 3 clinical trials found that Egrifta significantly lowered VAT (up to 15–20% on average) at both 26 and 52 weeks. Egrifta may also lower triglycerides (a type of cholesterol). Adverse events were more commonly seen in the groups given Egrifta than in those receiving placebos. It is important to note that excess VAT returns once Egrifta is discontinued. Egrifta should not be administered to patients who have pituitary gland tumor(s), pituitary gland surgery, or other pituitary gland problems; active cancer; hypersensitivity to either tesamorelin and/or mannitol; or who are pregnant. Egrifta should be used with caution in patients who have a history of non-malignant neoplasms (abnormal growth of tissue such as a tumor), a history of treated and stable malignancies, elevated insulin-like growth factor 1 (IGF-1), fluid retention, diabetes, or pre-diabetes.

The most common side effects include joint pain, injection site reactions (including redness, pain, and itching), pain in legs and arms, swelling in legs, muscle soreness, tingling, numbness and prickling, nausea, vomiting, rash, and itchiness. Other warnings include hypersensitivity reactions and acute critical illness. In the Phase 3 clinical studies, patients receiving Egrifta had a higher risk of developing diabetes compared to those on placebo. Despite initial thoughts that Egrifta may have significant drug-drug interactions with medications that use CYP450 (an enzyme in the liver) for metabolism, a study in healthy volunteers proved otherwise. However, it has not been studied with medications that use other enzymes in the liver; therefore, response to medications that are metabolized through the liver should be monitored for response and adverse reactions. Long-term safety data is unknown. There have been previous reports of a theoretical increased risk of cancer with elevated IGF-1 levels. Other long-term concerns include potential development of retinopathy in patients with diabetes. Each dose necessitates mixing 1-mg vials (requiring refrigeration) of Egrifta with 2.2 mL of sterile water for injection (vial stored at room temperature). Do not use an unopened vial if the solution is colored, cloudy, or contains visible particles. Once mixed, the vial should be rolled gently, not shaken, between the hands for 30 seconds to ensure reconstitution into a clear, colorless solution and administered right away. If not used immediately, the reconstituted Egrifta should be discarded.

If someone is having difficulty paying for Egrifta, there are several programs available through the Egrifta Assist toll-free line at 844-EGRIFTA (844-347-4382) or at egrifta.com.

Mytesi

crofelemer

STANDARD DOSE
One 125 mg delayed-release tablet taken twice a day, with or without food. The tablet should be swallowed whole and not crushed or chewed.

MANUFACTURER
Napo Pharmaceuticals
Mytesi.com
(844) 722-8256

AWP
$648.00 / 60 tablets

Mytesi (crofelemer) is the first, and only, anti-diarrheal indicated for the symptomatic relief of non-infectious diarrhea in adult patients with HIV/AIDS on antiretroviral therapy. Currently, what is typically recommended is for the patient to take medication(s) with food and/or use Imodium (loperamide) for symptomatic diarrhea.

Mytesi approval was based on a randomized, placebo-controlled study of 374 HIV-positive patients who had about 3 watery stools per day and were on anti-HIV medicines. At study entry, patients experienced an average of approximately 20 watery stools per week. To be considered a responder, watery stools had to be decreased to two or fewer per week, which occurred in 18% of Mytesi-treated patients vs. 8% of placebo-treated patients at 4 weeks. In an open label extension phase of the study, about 50% of the patients reported two or fewer watery stools per week at 3 months, an effect which was maintained until study end at 6 months. These findings suggest that it may take some time to achieve the optimal effect. Mytesi appears to work best in those who have tried and failed non-prescription anti-diarrheals, have had diarrhea for more than two years, have more than two watery bowel movements per day, and whose bowel movements tend to be "pourable" (not clumpy). Mytesi was less effective in African Americans in this clinical study.

An infectious cause should be ruled out prior to initiating Mytesi. In the placebo-controlled part of the study, side effects were comparable to placebo. The most commonly reported side effect was upper respiratory tract infection (Mytesi, 3.8% of patients vs. placebo, 2.9%). Other reported side effects included bronchitis, cough, flatulence (gas), and increased bilirubin. Based on animal data, Mytesi may cause fetal harm. Mytesi has not been studied in patients younger than 18 years old. Its usefulness in pediatrics is unknown and use in this population cannot be recommended at this time.

There were no significant drug interactions in participants in the clinical study. There was little or no change in CD4 counts and viral load throughout the study.

In a review article in *Expert Review of Clinical Pharmacology* published in 2015 by Castro et al, the use of Mytesi is recommended as a reasonable choice in patients not responding to over-the-counter psyllium and loperamide. Patients should be informed that the benefits of Mytesi are not immediate, possibly taking about four weeks, and if an inadequate response is seen after three months, Mytesi should be discontinued.

Serostim

somatropin (rDNA origin) for injection

STANDARD DOSE

0.1 mg/kg via subcutaneous (under the skin) injection, which may be in the thigh, upper arm, abdomen, or buttock once daily at bedtime (up to 6 mg), rotating injection sites and avoiding scar tissue, bruises, and the navel. It is available in 4 mg, 5 mg, and 6 mg vials. The multi-use 4 mg vial is reconstituted with bacteriostatic (containing a biological or chemical agent that stops bacteria from reproducing) water for injection and may be refrigerated for up to 14 days after reconstitution. The single-use 5 mg and 6 mg vials are reconstituted with sterile water for injection and must be used immediately; after administering the dose, any unused portion should be discarded. Some loss of the dose can be expected (approximately 10%). Inject the water into the vial aiming for the glass wall. The vial should be swirled gently in a circular motion until solution is completely dissolved; it must be clear and colorless. Do not shake. Do not inject if solution is cloudy or contains particles.

MANUFACTURER

EMD Serono
serostim.com
(877) 714-AXIS (2947)

AWP

28 day supply:
4 mg - $10,292.72
5 mg - $12,865.92
6 mg - $15,439.12

Serostim is recombinant (made in a lab) human growth hormone for treatment of HIV wasting (unintentional loss of weight) or cachexia (general ill health resulting from emaciation), decreased lean body mass (muscle), and loss of physical endurance. Loss of muscle can be difficult to notice or diagnose. Serostim has been shown to increase HIV replication in the test tube; therefore, patients must be taking anti-HIV therapy, known as HAART (or cART), in order to be prescribed Serostim.

Most common potential side effects include swelling (especially of the hands and feet), muscle pain, joint pain, numbness, and pain in extremities (the ends of limbs, especially the hands and feet), carpal tunnel syndrome (requiring discontinuation if unresolved by decreasing the number of doses), injection site reactions (pain, numbness, redness, or swelling), increased blood fat (triglycerides) and blood sugar (including new or worsening cases of diabetes, sometimes reversible upon stopping Serostim), nausea, and fatigue. More rarely, potential side effects include pancreatitis (watch for persistent severe abdominal pain) and intracranial hypertension (rise in pressure in the skull, with visual changes, headache, nausea, or vomiting). Serostim should be avoided in patients who are acutely ill, have an active cancer, or have diabetic retinopathy (damage to one or both retinas). Since HIV-positive patients may have an increased risk of developing new tumors, including from birth marks or other moles, risks versus benefits of starting Serostim should always be discussed with your provider. Additionally, patients with known malignancies should be carefully monitored, because Serostim may cause increased growth or malignant changes.

Rotate injection sites to avoid injection site reactions. An injection training program is available; see the website or call the toll-free number. Do not use while experiencing cancer or cancer treatment, serious injuries, severe breathing problems, certain eye diseases related to diabetes, or after critical illness due to complications of abdominal or open heart surgery.

Based on how the drug is broken down in your body, there are some potential drug-drug interactions, though no formal drug studies have been conducted. These theoretically potential interactions include patients on glucocorticoid (such as prednisone) therapy and may require an increased prednisone dose. Others may include medications that are metabolized through the CYP450 enzyme in your liver (like some antiretrovirals, cholesterol medications, or anticonvulsants); or medications like oral estrogen, insulin, or oral diabetes drugs. Be sure to tell your provider, pharmacist, and/or other providers about all of the medications you are taking, including herbs, supplements, and over-the-counter (OTC) products, prescribed or not.

If someone is having difficulty paying for Serostim, there are several programs that may be able to assist the patient with acquiring it. These programs include EMD Serono Secured Distribution Program, the AXIS Center, the Serostim Patient Assistance Program (PAP) or the Co-Pay Assistance Program. To find out more about these programs, call (877) 714-2947.

Go to serostim.com for additional information.

Truvada for PrEP

CDC RECOMMENDED FOR PREVENTION OF HIV

emtricitabine/tenofovir disoproxil fumarate, or **FTC/TDF**

STANDARD DOSE

For HIV-negative adults, one tablet (200 mg emtricitabine / 300 mg tenofovir disoproxil fumarate) once daily, with or without food, with no dietary restrictions.

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Truvada should not be used for prevention if kidney function is less than 60 mL/min.

MANUFACTURER

Gilead Sciences, Inc.
gilead.com
(800) GILEAD-5
(445–3235)

AWP

$1,759.73 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the pages for the individual drugs contained in Truvada—Viread and Emtriva. No new serious side effects were seen when Truvada was studied for HIV prevention in clinical trials. Some patients may experience nausea, headache, stomach pain, or weight loss. Risk compensation—when people put themselves at greater risk for infection (such as anonymous, more, or multiple sex partners) because they think PrEP will protect them—was not seen in clinical trials. The tenofovir DF (Viread) in Truvada is associated with decreases in bone mineral density (BMD). BMD monitoring should be considered in people who have a history of bone fracture due to a disease or are at risk for osteopenia or osteoporosis. Truvada can cause kidney toxicities. In prevention studies, decreases in BMD and creatinine clearance or eGFR (a marker of kidney function) were rare, mild, and reversible upon stopping Truvada. Tell your provider about pain in extremities, persistent or worsening bone pain and fractures, with or without muscular pain or weakness, as these could be signs of kidney problems. If Truvada is discontinued abruptly in people with hepatitis B virus (HBV), flare-up of hepatitis may occur—talk to your provider before discontinuing Truvada for PrEP. See Emtriva page for hepatitis B information. In studies, there were cases of people who had unidentified HIV infection when starting Truvada for PrEP and they were more likely to develop drug resistance than those who acquired HIV while on the medication.

POTENTIAL DRUG INTERACTIONS

See the individual sheets for the drugs contained in Truvada—Viread and Emtriva. Do not take with any other HIV drugs when used for pre-exposure prophylaxis (PrEP). Do not take with the hepatitis B medications Epivir-HBV Hepsera, or Vemlidy, since these medications are either already in or similar to a component of Truvada. Avoid taking Truvada with drugs that negatively affect the kidneys, including chronic use or high doses of anti-inflammatory drugs like Advil, Aleve, ibuprofen, naproxen, and Motrin. Truvada, when taken by itself for PrEP, can be used with the hepatitis C drugs Daklinza, Harvoni, Sovaldi, Olysio, Viekira Pak, or Zepatier. Monitor for tenofovir toxicities if used with Epclusa.

MORE INFORMATION

Truvada, a widely-used medication for the treatment of HIV, was approved in July 2012 by the Food and Drug Administration (FDA) to reduce the risk of HIV infection in HIV-negative individuals. This approach to HIV prevention is called pre-exposure prophylaxis, or PrEP ("prophylaxis" means something that prevents disease, such as a condom or a vaccine). The U.S. Public Health Service (USPHS) of the Centers for Disease Control and Prevention (CDC) issued guidelines for the use of Truvada for PrEP in May of 2014. Guidance from the USPHS makes it easier to get insurance coverage for PrEP. Go to cdc.gov/hiv/pdf/guidelines/PrEPguidelines2014.pdf.

A newer medication called Descovy, which combines emtricibabine with a more potent prodrug of tenofovir, TAF, is only approved for HIV treatment and not prevention. There is no efficacy data with Descovy, and only Truvada should be used for PrEP.

There are many considerations regarding Truvada for PrEP. Proper use is crucial.

It is vital that people test HIV-negative before being given a prescription. This requirement received a black box warning on the drug label, the highest level of stringency accorded by the FDA. Patients should also be re-tested for HIV infection every three months while taking PrEP. People who are already unknowingly infected when starting PrEP, or who become infected while taking it, risk developing drug-resistant virus because Truvada alone is not adequate for the treatment of HIV. Therefore, the virus can overpower the medication, making it ineffective. Resistance may complicate future HIV therapy by reducing treatment options. There are, however, many HIV drugs on the market that can still make therapy successful. Prescriptions should not be given to people with symptoms of recent (acute) infection, such as fever, fatigue, sweating a lot (especially at night), rash, vomiting, diarrhea, joint or muscle aches, headache, sore throat, or enlarged lymph nodes (especially in the neck or groin). PrEP should not be started (or re-started) if any of these symptoms appear after a potential exposure to HIV unless a negative infection status is confirmed. People on PrEP who have these symptoms after a potential exposure to HIV should stop taking Truvada. A specific algorithm for assessing HIV status can be found in the CDC PrEP guidelines (see above). Patients are not to be given more than three months' worth of Truvada without seeing their provider again for HIV testing and other monitoring. Remember, drug resistance cannot occur in HIV-negative people. Drug resistance develops in the virus itself, so you need to be HIV-positive before resistance can develop. Using PrEP correctly can avoid infection and thus eliminate the risk of drug resistance.

Truvada for PrEP is not a morning-after pill or a weekend medication. It must be taken every day. In studies, greater protection was seen with greater adherence, giving rise to the warning "it doesn't work if you don't take it."

While some people may use PrEP as their only prevention method, it was studied and approved as part of a more comprehensive package that includes the use of condoms and safer sex counseling. That said, the CDC has changed the definition of protected sex to include sex without condoms, given new modalities such as PrEP. Although consistent condom use is an important part of a prevention plan for all people prescribed PrEP, lack of use of a barrier protection is not a reason to withhold PrEP. On the contrary, the PrEP label lists people who are unwilling or unable to use condoms as at-risk candidates for whom the drug is indicated. PrEP does not protect against other sexually transmitted infections (STIs) including hepatitis C or against pregnancy.

Other screening and monitoring requirements include measuring kidney function and checking for STIs and hepatitis B and C, treatment for STIs, and vaccination for HBV if warranted.

Although a PrEP prescription can be given to a wide range of people, the FDA approved Truvada for those considered most vulnerable to infection, such as men who have sex with men (MSM) who engage in anal intercourse without a condom with an HIV-positive partner or a partner of unknown HIV status, and anyone who has an HIV-positive partner or partners. Many people, however, do not consider themselves to be at risk even when they are. The Truvada PrEP label notes that people at risk include those who engage in sexual activity in a high-prevalence area or social network and have one or more of the following: (a) inconsistent or no

condom use, (b) diagnosis of sexually transmitted infections (STIs), (c) exchange of sex for commodities (money, food, shelter, or drugs), (d) use of illicit drugs or alcohol dependence, (e) history of incarceration, or (f) sexual partners of unknown HIV status with any of the above risk factors.

Individuals who have used post-exposure prophylaxis (PEP) multiple times are also good candidates for PrEP because of their continuing risk for HIV. PEP is a course of HIV medications taken for 28 days after exposure to HIV to prevent infection; it must be started as soon as possible but no later than 72 hours after exposure.

Although pregnant women were not enrolled in PrEP studies, there is hope for PrEP to help serodiscordant couples (where one partner is positive and one is negative) conceive without transmitting the virus. Last year, the DHHS perinatal HIV guidelines added a section on the use of PrEP and HIV therapy to prevent transmission in sero-different couples trying to conceive; go to aidsinfo.nih.gov. The Bay Area Perinatal AIDS Center (BAPAC) is leading the charge for safer conception options, including MSM, plus a new providers list at pleasePrEPme.org; go to hiv.ucsf.edu/care/perinatal.html.

Unlike HIV therapy, which is long-term, PrEP may be used just for periods of time when HIV-negative individuals are vulnerable to infection. It takes about 7 days to reach protective drug levels in the rectal tract, and about 21 days to reach protective levels in vaginal tissue.

The two studies that led to Truvada's approval for PrEP, iPrEx (in high-risk MSM and transgender women) and Partners PrEP (in serodiscordant couples, most of them heterosexual), showed efficacy rates between 90%–92% when participants take their meds. PrEP with Truvada has also been studied in other patient populations, including younger single men and women, injection drug users, and women. In all the studies, the common theme is that PrEP is effective if you take it every day. Other drugs are being studied for use as HIV PrEP, including long-acting injection formulations requiring only one injection every two months.

Providers, as well as potential patients, are still learning about PrEP, and some continue to be reluctant to prescribe PrEP. Read the PDF of the CDC brochure *Talk to Your Doctor about PrEP*. The brochure includes resources for providers. HIV specialists may be best for a PEP or PrEP prescription, as they are familiar with the medications; find providers at hivma.org and aahivm.org. HIV specialists are generally in high demand, however, and advocates are looking to make Truvada for PrEP much more accessible. There is also a complex set of standards to use in prescribing PrEP that may cause many providers to turn away, including a call for safer sex counseling. Requirements for a PrEP prescription can be burdensome. The FDA required a Risk Evaluation and Mitigation Strategy (REMS) for Truvada for PrEP, the central component of which is a training and education program to help prescribers in counseling PrEP patients. The National Alliance of State and Territorial AIDS Directors (NASTAD) developed a guide to help providers bill for PrEP services available at nastad.org/resource/billing-coding-guide-hiv-prevention. Two excellent websites for finding a PrEP provider are preplocator.org and aidsvu.org. All you need to do is put in your ZIP code and a list of providers who prescribe Truvada for PrEP will appear.

Insurance coverage of PrEP has become less of a concern. Providers are reporting widespread acceptance of PrEP prescriptions by insurers. Gilead Sciences also helps patients work with their insurance, including pre-authorizations, as well as provides free PrEP to uninsured patients who are eligible and co-pay assistance up to $3,600 a year; contact the patient assistance hotline at (855) 330-5479 or go to Gilead.com/truvada_assistance_program. Patients may also have to advocate on their own behalf; keeping good notes of conversations and other communication is a good idea. Also, check out Prep4love.com.

Myprepexperience.blogspot.com invites people to write about the issues they've had with insurers and also tracks Medicaid eligibility for PrEP. Demonstration projects providing free PrEP to study its use in the real world can be found at PrEPWatch.org from AVAC and projectinform.org/prep. Providers can use V107 as a medical billing code for PrEP (exposure to infectious disease, including HIV).

Robert Grant, MD, principal investigator for the iPrEx study, wrote in an article for POSITIVELY AWARE, "The combination of highly active antiretroviral interventions for both HIV prevention and treatment has led to unprecedented optimism about the prospect of ending AIDS."

Also go to tpan.com/prep. View PA's special issues on PrEP at positivelyaware.com.

DOWN THE ROAD

New drugs, new treatment strategies, and other changes coming your way

DRUG TYPE:
HIV drug in development
Generic HIV drug
Hepatitis C drug in development

2017

raltegravir QD A once-daily dose of Isentress. Approval expected in May.

ibalizumab A monoclonal antibody entry inhibitor given by infusion; an injectible may become available. Approval expected in June.

sofosbuvir/valpatasvir/voxilaprevir (GS-9857) A single-tablet regimen (STR) made up of direct-acting antivirals, two of them pangenotypic.

glecaprevir/pibrentasvir A pangenotypic regimen with two direct-acting antivirals.

2018

bictegravir/emtricitabine/tenofovir alafenamide (GS-9883) An STR containing an integrase inhibitor (INSTI) that does not require boosting.

darunavir/cobicistat/tenofovir alafenamide/emtricitabine The first single-tablet regimen containing a protease inhibitor.

fostemsavir An HIV entry inhibitor that targets a different step of the viral lifecycle, it offers promise for individuals with virus that has become highly resistant to other HIV drugs.

doravirine/tenofovir disoproxil fumarate/lamivudine A single-tablet regimen containing a non-nuke that may work in those who have developed resistance to other non-nukes, with no food restrictions.

dolutegravir/rilpivirine New co-formulation of already approved INSTI and non-nuke; first STR using only two drugs.

Sustiva (efavirenz) expected to go generic first quarter.

efavirenz/tenofovir disoproxil fumarate/lamivudine expected to be available as generic first quarter; STR similar to Atripla.

Tenofovir disoproxil fumarate/lamivudine expected to be available as generic first quarter; fixed-dose combination similar to Truvada. Not studied or recommended for use as PrEP.

2019

cabotegravir/rilpivirine LA A long-acting injectable containing an INSTI and an NNRTI.

Prezista (darunavir) goes generic.

2020-2021

Emtriva (emtricitabine) goes generic.

Truvada (tenofovir disoproxil fumarate/emtricitabine) goes generic.

Atripla (efavirenz/tenofovir disoproxil fumarate/emtricitabine) goes generic.

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ILLUSTRATION: ISTOCKPHOTO

Hep C treatment for HIV co-infection

Key points for people living with HIV and HCV

BY **ANDREW REYNOLDS**

It wasn't that long ago when treating hepatitis C was limited to two drugs: pegylated interferon and ribavirin. These medications were very challenging. People had to take them for a year, inject one of them, suffer severe side effects, and worst of all, they were not very effective at curing people. They also weren't very good for people living with HIV.

Today, HCV treatment is easier than ever. **For most people it can be completed in 12 weeks (some people may need 24 weeks), with few pills** (and no injections!), and manageable side effects that are usually quite mild.

Best of all, they cure people at very high rates—90 to 100% of the time. They work very well in people living with HIV. HIV infection might complicate treatment, but it's nothing that can't be managed and you can still be cured of HCV.

The following are some key points for people living with HIV and HCV. This information comes from the two leading professional guidelines for managing and treating HIV and HCV, respectively. They guide your medical providers in their practice, and offer valuable information to you, too.

Managing HIV in co-infected persons

Managing and treating your HIV makes sense for your immune system and keeping your HIV viral load undetectable, but it's good for your HCV, too. HIV treatment slows down liver damage and reduces the risk of liver-related problems for people who are co-infected.

There could be drug interactions between your HIV and HCV medications. In these cases, there may be a need to switch your HIV regimen to accommodate the HCV treatment. If you can't (or don't want) to switch, you may be able to try an HCV treatment that doesn't interact with your HIV medication. Make sure your treatment providers for both your HIV and HCV are aware of all the medications you're taking so that they can help you manage any potential interactions.

The most important thing is that you should not stop taking your HIV treatment so that you can treat your HCV. You can take treatment for both at the same time.

What to take

Everyone with HCV should be treated for it regardless how much liver damage the person has, and people with HIV/HCV co-infection are no exception.

The AASLD/IDSA Guidance states that **people who are co-infected can be treated and re-treated with the same hepatitis C direct acting antivirals (DAAs) as those who are not.** There may be some drug interactions between HIV and HCV meds, so make sure all your medical providers know what you're taking. See the POSITIVELY AWARE Annual HCV Drug Guide (July+August 2016).

When to begin HCV treatment for co-infected persons

As soon as possible. Co-infected persons who are cured of HCV have lower risk of liver problems down the line. **The sooner you get cured, the less likely the liver damage.** Even if you find out that your liver has more advanced damage, getting cured reduces the risk of long-term problems. Depending upon how much damage there is, you might even be able to reverse it.

The only time you might consider holding off on HCV treatment is if your CD4 cells are below 200. It might make sense to wait a bit for the HIV meds to suppress the virus and give your immune system a chance to recover. Talk with your medical provider about the best course of action here.

Maximizing treatment effectiveness

Adherence to your HIV medications is extremely important for keeping your viral load suppressed and minimizing the risk of developing drug resistance.

The same is true of your HCV medications: **The better you are at taking your HCV medications, the better your chance at being cured.**

Adherence is more than just taking the pills every day. It includes taking them as prescribed to avoid drug interactions that might weaken the DAA's effectiveness. Check with your medical provider about everything you're taking—prescribed and over-the-counter—to make sure you can take them safely and to maximize your chance at a cure.

Preventing re-infection after treatment

You can get hepatitis C more than once. After you've been cured, it will still be important to prevent re-infection with HCV. If you inject drugs, use new syringes and injecting equipment and avoid sharing them. **HIV-positive people are more vulnerable to sexual transmission of HCV**, so minimizing your risk of exposure to HCV through safer sex practices (condoms for anal sex, gloves for fisting and so on) can offer you protection from re-infection.

After you've been cured, and if you have ongoing risk that could lead to re-infection, you won't be able to use the standard HCV test, which looks for antibodies—you'll always have HCV antibodies. You'll need to get tested for HCV by taking a viral load test that checks for the actual virus itself.

We can end this

We can end co-infection. Through improved HCV awareness, routine HCV testing, and expanding HCV treatment, the health and well-being of people living with HIV will improve. It's not easy, but we have the tools and the ability.

If you have any questions about HCV treatment, call The Support Partnership's national hepatitis C helpline: HELP-4-HEP, (877) 435-7443.

See the recommendations from the AASLD/IDSA HCV Guidance: Recommendations for Testing, Managing and Treating Hepatitis C (hcvguidelines.org) and the Guidelines for the Use of Antiretroviral Agents in HIV-1-Infected Adults and Adolescents, aidsinfo.nih.gov/guidelines/html/1/adult-and-adolescent-treatment-guidelines/0.

WHAT IS ODEFSEY®?

ODEFSEY is a 1-pill, once-a-day prescription medicine used to treat HIV-1 in people 12 years and older. It can either be used in people who are starting HIV-1 treatment, have never taken HIV-1 medicines before, and have an amount of HIV-1 in their blood ("viral load") that is no more than 100,000 copies/mL; or in people who are replacing their current HIV-1 medicines and whose healthcare provider determines they meet certain requirements. These include having an undetectable viral load (less than 50 copies/mL) for 6 months or more on their current HIV-1 treatment. ODEFSEY combines 3 medicines into 1 pill taken once a day with a meal. ODEFSEY is a complete HIV-1 treatment and should not be used with other HIV-1 medicines.

ODEFSEY does not cure HIV-1 infection or AIDS. To control HIV-1 infection and decrease HIV-related illnesses, you must keep taking ODEFSEY. Ask your healthcare provider if you have questions about how to reduce the risk of passing HIV-1 to others. Always practice safer sex and use condoms to lower the chance of sexual contact with body fluids. Never reuse or share needles or other items that have body fluids on them.

IMPORTANT SAFETY INFORMATION

What is the most important information I should know about ODEFSEY?

ODEFSEY may cause serious side effects:

- **Buildup of an acid in your blood (lactic acidosis),** which is a serious medical emergency. Symptoms of lactic acidosis include feeling very weak or tired, unusual muscle pain, trouble breathing, stomach pain with nausea or vomiting, feeling cold (especially in your arms and legs), feeling dizzy or lightheaded, and/or a fast or irregular heartbeat.
- **Serious liver problems.** The liver may become large and fatty. Symptoms of liver problems include your skin or the white part of your eyes turning yellow (jaundice); dark "tea-colored" urine; loss of appetite; light-colored bowel movements (stools); nausea; and/or pain, aching, or tenderness on the right side of your stomach area.
- **You may be more likely to get lactic acidosis or serious liver problems** if you are female, very overweight, or have been taking ODEFSEY or a similar medicine for a long time. In some cases, lactic acidosis and serious liver problems have led to death. Call your healthcare provider right away if you have any symptoms of these conditions.
- **Worsening of hepatitis B virus (HBV) infection.** ODEFSEY is not approved to treat HBV. If you have both HIV-1 and HBV and stop taking ODEFSEY, your HBV may suddenly get worse. Do not stop taking ODEFSEY without first talking to your healthcare provider, as they will need to monitor your health.

Who should not take ODEFSEY?

Do not take ODEFSEY if you take:

- **Certain prescription medicines for other conditions.** It is important to ask your healthcare provider or pharmacist about medicines that should not be taken with ODEFSEY. Do not start a new medicine without telling your healthcare provider.
- **The herbal supplement** St. John's wort.
- **Any other medicines to treat HIV-1 infection.**

What are the other possible side effects of ODEFSEY?

Serious side effects of ODEFSEY may also include:

- **Severe skin rash and allergic reactions.** Skin rash is a common side effect of ODEFSEY. Call your healthcare provider right away if you get a rash, as some rashes and allergic reactions may need to be treated in a hospital. Stop taking ODEFSEY and get medical help right away if you get a rash with any of the following symptoms: fever, skin blisters, mouth sores, redness or swelling of the eyes (conjunctivitis), swelling of the face, lips, mouth, or throat, trouble breathing or swallowing, pain on the right side of the stomach (abdominal) area, and/or dark "tea-colored" urine.
- **Depression or mood changes.** Tell your healthcare provider right away if you: feel sad or hopeless, feel anxious or restless, have thoughts of hurting yourself (suicide) or have tried to hurt yourself.
- **Changes in liver enzymes.** People who have had hepatitis B or C or who have certain liver enzyme changes may have a higher risk for new or worse liver problems while taking ODEFSEY. Liver problems can also happen in people who have not had liver disease. Your healthcare provider may do tests to check your liver enzymes before and during treatment with ODEFSEY.
- **Changes in body fat,** which can happen in people taking HIV-1 medicines.
- **Changes in your immune system.** Your immune system may get stronger and begin to fight infections. Tell your healthcare provider if you have any new symptoms after you start taking ODEFSEY.
- **Kidney problems, including kidney failure.** Your healthcare provider should do blood and urine tests to check your kidneys. Your healthcare provider may tell you to stop taking ODEFSEY if you develop new or worse kidney problems.
- **Bone problems,** such as bone pain, softening, or thinning, which may lead to fractures. Your healthcare provider may do tests to check your bones.

The most common side effects of rilpivirine, one of the medicines in ODEFSEY, are depression, trouble sleeping (insomnia), and headache.

The most common side effect of emtricitabine and tenofovir alafenamide, two of the medicines in ODEFSEY, is nausea.

Tell your healthcare provider if you have any side effects that bother you or do not go away.

What should I tell my healthcare provider before taking ODEFSEY?

- **All your health problems.** Be sure to tell your healthcare provider if you have or have had any kidney, bone, mental health (depression or suicidal thoughts), or liver problems, including hepatitis virus infection.
- **All the medicines you take,** including prescription and over-the-counter medicines, vitamins, and herbal supplements. Other medicines may affect how ODEFSEY works. Keep a list of all your medicines and show it to your healthcare provider and pharmacist. Ask your healthcare provider if it is safe to take ODEFSEY with all of your other medicines.
- **If you are pregnant** or plan to become pregnant. It is not known if ODEFSEY can harm your unborn baby. Tell your healthcare provider if you become pregnant while taking ODEFSEY.
- **If you are breastfeeding** (nursing) or plan to breastfeed. Do not breastfeed. HIV-1 can be passed to the baby in breast milk.

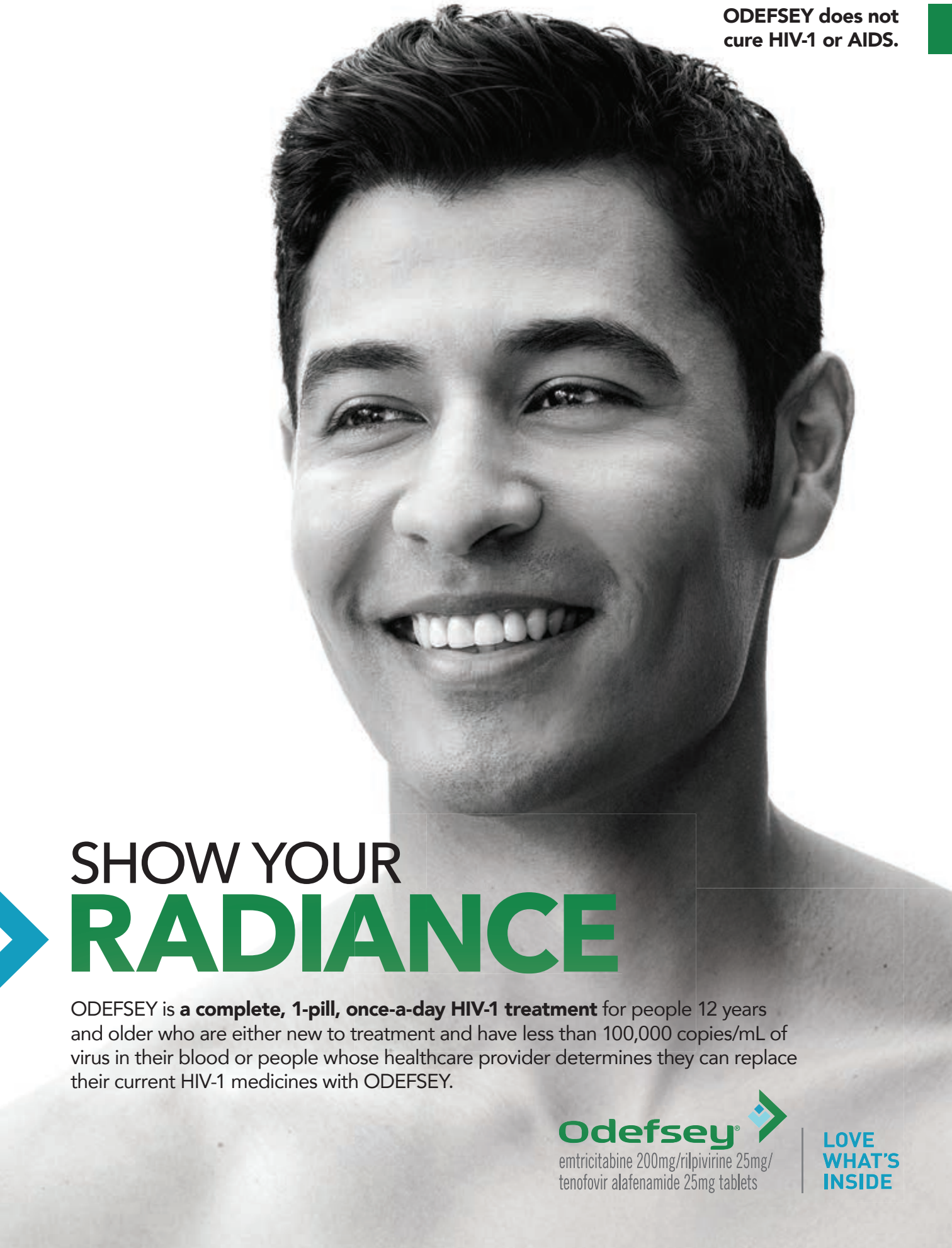
Ask your healthcare provider if ODEFSEY is right for you, and visit ODEFSEY.com to learn more.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch, or call 1-800-FDA-1088.

GILEAD

Please see Important Facts about ODEFSEY including important warnings on the following page.

ODEFSEY does not cure HIV-1 or AIDS.



SHOW YOUR RADIANCE

ODEFSEY is **a complete, 1-pill, once-a-day HIV-1 treatment** for people 12 years and older who are either new to treatment and have less than 100,000 copies/mL of virus in their blood or people whose healthcare provider determines they can replace their current HIV-1 medicines with ODEFSEY.

Odefsey®
emtricitabine 200mg/rilpivirine 25mg/
tenofovir alafenamide 25mg tablets

LOVE WHAT'S INSIDE

Odefsey®
emtricitabine 200mg/rilpivirine 25mg/
tenofovir alafenamide 25mg tablets

(oh-DEF-see)

IMPORTANT FACTS

This is only a brief summary of important information about ODEFSEY® and does not replace talking to your healthcare provider about your condition and your treatment.

MOST IMPORTANT INFORMATION ABOUT ODEFSEY

ODEFSEY may cause serious side effects, including:

- **Buildup of lactic acid in your blood (lactic acidosis),** which is a serious medical emergency that can lead to death. Call your healthcare provider right away if you have any of these symptoms: feeling very weak or tired, unusual muscle pain, trouble breathing, stomach pain with nausea or vomiting, feeling cold (especially in your arms and legs), feeling dizzy or lightheaded, and/or a fast or irregular heartbeat.
- **Severe liver problems,** which in some cases can lead to death. Call your healthcare provider right away if you have any of these symptoms: your skin or the white part of your eyes turns yellow (jaundice); dark "tea-colored" urine; loss of appetite; light-colored bowel movements (stools); nausea; and/or pain, aching, or tenderness on the right side of your stomach area.
- **Worsening of hepatitis B (HBV) infection.** ODEFSEY is not approved to treat HBV. If you have both HIV-1 and HBV, your HBV may suddenly get worse if you stop taking ODEFSEY. Do not stop taking ODEFSEY without first talking to your healthcare provider, as they will need to check your health regularly for several months.

You may be more likely to get lactic acidosis or severe liver problems if you are female, very overweight, or have been taking ODEFSEY or a similar medicine for a long time.

ABOUT ODEFSEY

- ODEFSEY is a prescription medicine used to treat HIV-1 in people 12 years of age and older who have never taken HIV-1 medicines before and who have an amount of HIV-1 in their blood ("viral load") that is no more than 100,000 copies/mL. ODEFSEY can also be used to replace current HIV-1 medicines for some people who have an undetectable viral load (less than 50 copies/mL), have been on the same HIV-1 medicines for at least 6 months, have never failed HIV-1 treatment, and whose healthcare provider determines that they meet certain other requirements.
- **ODEFSEY does not cure HIV-1 or AIDS.** Ask your healthcare provider about how to prevent passing HIV-1 to others.

Do NOT take ODEFSEY if you:

- Take a medicine that contains: carbamazepine (Carbatrol®, Epitol®, Equetro®, Tegretol®, Tegretol-XR®, Teril®), dexamethasone (Ozurdex®, Maxidex®, Decadron®, Baycadron™), dexlansoprazole (Dexilant®), esomeprazole (Nexium®, Vimovo®), lansoprazole (Prevacid®), omeprazole (Prilosec®, Zegerid®), oxcarbazepine (Trileptal®), pantoprazole sodium (Protonix®), phenobarbital (Luminal®), phenytoin (Dilantin®, Dilantin-125®, Phenytek®), rabeprazole (Aciphex®), rifampin (Rifadin®, Rifamate®, Rifater®, Rimactane®), or rifapentine (Priftin®).
- Take the herbal supplement St. John's wort.
- Take any other HIV-1 medicines at the same time.

POSSIBLE SIDE EFFECTS OF ODEFSEY

ODEFSEY can cause serious side effects, including:

- Those in the "Most Important Information About ODEFSEY" section.
- Severe skin rash and allergic reactions.
- Depression or mood changes.
- Changes in liver enzymes.
- Changes in body fat.
- Changes in your immune system.
- New or worse kidney problems, including kidney failure.
- Bone problems.

The most common side effects of rilpivirine, one of the medicines in ODEFSEY, are depression, trouble sleeping (insomnia), and headache.

The most common side effect of emtricitabine and tenofovir alafenamide, two of the medicines in ODEFSEY, is nausea.

These are not all the possible side effects of ODEFSEY. Tell your healthcare provider right away if you have any new symptoms while taking ODEFSEY.

Your healthcare provider will need to do tests to monitor your health before and during treatment with ODEFSEY.

BEFORE TAKING ODEFSEY

Tell your healthcare provider if you:

- Have or have had any kidney, bone, mental health (depression or suicidal thoughts), or liver problems, including hepatitis infection.
- Have any other medical condition.
- Are pregnant or plan to become pregnant.
- Are breastfeeding (nursing) or plan to breastfeed. Do not breastfeed if you have HIV-1 because of the risk of passing HIV-1 to your baby.

Tell your healthcare provider about all the medicines you take:

- Keep a list that includes all prescription and over-the-counter medicines, vitamins, and herbal supplements, and show it to your healthcare provider and pharmacist.
- Ask your healthcare provider or pharmacist about medicines that should not be taken with ODEFSEY.

HOW TO TAKE ODEFSEY

- ODEFSEY is a complete 1-pill, once-a-day HIV-1 medicine.
- Take ODEFSEY with a meal.

GET MORE INFORMATION

- This is only a brief summary of important information about ODEFSEY. Talk to your healthcare provider or pharmacist to learn more.
- Go to ODEFSEY.com or call 1-800-GILEAD-5
- If you need help paying for your medicine, visit ODEFSEY.com for program information.

GILEAD

KNOW WHERE TO LOOK

Finding assistance programs to help pay for your meds

Today's therapies are vastly improved over the first drugs used to treat HIV, but these advancements continue to come at a cost. The prices of HIV drugs continue to rise every year at an average of 7–9 percent. While in the past this usually hasn't directly affected someone who has drug coverage through their health insurance plan, increasingly individuals are having to pay co-insurance (a percentage of the cost) on their medications. The good news is that help is out there. ADAPs, several nonprofit organizations, and the pharmaceutical companies themselves have assistance programs in place to help you pay for the treatment you need.

CO-PAY AND PATIENT ASSISTANCE PROGRAMS

Most pharmaceutical companies provide some level of assistance through a patient assistance program (PAP) for people who can't afford certain medications. These PAPs are typically for patients without insurance or are underinsured who don't qualify for Medicare, Medicaid, or AIDS Drug Assistance Programs (ADAP). Qualifications and criteria vary by program and are based on a percentage of Federal Poverty Level (FPL). Patients or providers should contact the program to see if they are eligible.

Many companies also have co-pay assistance programs (CAPs) for those who have drug coverage through privately held insurance. These programs may cover all or part of the drug co-pay, co-insurance, and deductibles up to a specified amount, and typically don't have any income requirements. Certain restrictions and eligibility requirements apply (for example, recipients of ADAP, Medicare, and Medicaid may not be eligible). Individuals can get the co-pay card directly from their provider, the manufacturer's website, or by calling a toll-free number. Some programs have a reimbursement process in place if you are required to pay the co-pay out of pocket.

Some PAPs and CAPs will make exceptions in an effort to ensure people have access to the medications they need. For example, for a person on ADAP who has insurance but who has a high deductible, a CAP may cover a certain percentage. Be sure to ask for an exception or review if you are at first denied.

AIDS DRUG ASSISTANCE PROGRAMS (ADAPS)

Many state ADAPs can help pay out-of-pocket costs for HIV drugs obtained through some insurance plans. ADAPs can also help pay premiums in some states. Check with your state ADAP to learn what your state offers, as well as the income limits.

It is critical to consult a trained enrollment "navigator" when choosing an insurance plan. Contact your local HIV/AIDS service organization for help or a referral.

MEDICARE PART D

The Affordable Care Act provides for closing the Medicare Part D prescription drug benefit "donut hole" or coverage gap by 2020. Beneficiaries receive a 50% discount on covered brand name drugs while they are in the "donut hole," with increased savings on prescription drugs while they are in the coverage gap until the gap is fully closed. In addition, ADAP benefits are now considered as contributions toward Medicare Part D's True Out of Pocket spending limit ("TrOOP"), so ADAP clients who have Medicare Part D should be able to benefit.

HARBORPATH AND THE COMMON PAP FORM

HarborPath is a non-profit organization that helps uninsured people living with HIV/AIDS and/or hepatitis C to gain access to brand name prescription medication at no cost, by providing case managers with a single online portal for PAP applications and medication fulfillment through a mail-order pharmacy. Go to harborpath.org.

The Department of Health and Human Services (DHHS), along with seven pharmaceutical companies, NASTAD (National Alliance of State and Territorial AIDS Directors), and community stakeholders developed a common patient assistance program application that can be used by both providers and patients. To download the form, go to hab.hrsa.gov/patientassistance.

ADDITIONAL PROGRAMS

Co-pay and patient assistance programs are also available for hepatitis B and C drugs, and medications or treatments used for other HIV-related conditions such as lipodystrophy—some of these are included in the co-pay and PAP charts at right. There is even a separate assistance program for Truvada as prevention, or PrEP (pre-exposure prophylaxis).

The Patient Assistance Network Foundation expanded eligibility criteria for HIV treatment and prevention (including PEP and PrEP). Those who qualify (you must have insurance and income below 500% FPL) are eligible to receive a grant of up to $7,500 a year to help cover out-of-pocket costs for meds. You may apply for a second grant during your eligibility period depending on available funding. Go to panfoundation.org/hiv-treatment-and-prevention.

To learn more about other patient assistance or co-pay programs for drugs used to treat HIV, certain opportunistic infections, or other conditions, talk to your provider, contact the manufacturer directly, or go to pparx.org and needymeds.org. For help in getting many medications not covered by ADAP, including alternative therapies and generics, even if you receive medicines through another discount program, go to SurvivorRxPlan.com.

STAY INFORMED AND UP TO DATE

Keeping the lines of communication open between you and your health care provider, pharmacist, and case manager is essential when managing your health, so stay informed. Use the adjacent chart to check specific details.

SPECIAL THANKS to Britten Pund, Associate Director of Health Access, NASTAD, for her review of this article; Jason Lancaster for updating the accompanying charts; and the Fair Pricing Coalition (FPC) for some of the information herein. Go to fairpricingcoalition.org or hivhealthreform.org.

PHOTO: ISTOCKPHOTO

KNOW WHERE TO LOOK: PAYING FOR HIV MEDS

Co-pay and patient assistance programs that could help pay for your meds

DRUG	COMPANY	CO-PAY PROGRAM	PATIENT ASSISTANCE	DETAILS
Aptivus	Boehringer Ingelheim	None.	800-556-8317; rxhope.com or pparx.org	Patient assistance program only.
Atripla	Gilead Sciences and Bristol-Myers Squibb	877-505-6986; gileadadvancingaccess.com	866-290-4767	Co-pay program covers up to $6,000 per year with no monthly limit.
Combivir	ViiV Healthcare	None.	877-784-4842; viivconnect.com	No co-pay card; generic available. Patient assistance program only.
Complera	Gilead Sciences	877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	Co-pay program covers up to $6,000 per year with no monthly limit.
Crixivan	Merck & Co.	None.	800-652-3430; merckhelps.com	Patient assistance program only.
Descovy	Gilead Sciences	877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	Co-pay program covers up to $3,600 per year with no monthly limit
Edurant	Janssen Therapeutics	866-961-7169; edurant.com; jtsavings.com	800-652-6227; jjpaf.org	Co-pay program covers up to $7,500/year with no monthly limit. Card available through provider or at jtsavings.com.
Emtriva	Gilead Sciences	877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	Card available through your provider, AIDS service organization, and pharmacy. Co-pay program covers up to $3,600 per year with a monthly maximum of $300.
Epivir	ViiV Healthcare	None.	844-588-3288; viivconnect.com	No co-pay card; generic available. Patient assistance program only.
Epzicom	ViiV Healthcare	None.	844-588-3288; viivconnect.com	No co-pay card; generic available. Patient assistance program only.
Evotaz	Bristol-Myers Squibb	888-281-8981; bms3assist.com	888-281-8981; bms3assist.com	Co-pay program covers up to $7,500 per year with no monthly limit.
Fuzeon	Genentech	None.	pparx.com	Patient assistance program only.
Genvoya	Gilead Sciences	877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	Co-pay program covers up to $6,000 per year with no monthly limit.
Intelence	Janssen Therapeutics	866-961-7169; intelence.com; jtsavings.com	800-652-6227; jjpaf.org	Co-pay program covers up to $7,500/year with no monthly limit. Card available through provider or at jtsavings.com.
Invirase	Genentech	None.	pparx.org	Patient assistance program through pparx.org.

Isentress	Merck & Co.	isentress.com	800-850-3430; merckhelps.com	Co-pay program covers up to $6,600 per year per prescription.
Kaletra	AbbVie, Inc.	866-525-3872; kaletra.com	800-222-6885; abbviepaf.org	Co-pay program covers up to $100 per month per prescription.
Lexiva	ViiV Healthcare	844-588-3288 viivconnect.com	844-588-3288 viivconnect.com	Co-pay program covers up to $2,400 per year with no monthly limit.
Norvir	AbbVie, Inc.	800-441-4987; norvir.com	800-222-6885; abbviepaf.org	Co-pay program covers up to $100 per month per prescription.
Odefsey	Gilead Sciences	877-505-6986; gileadadvancingaccess.com odefsey.com	800-226-2056; gileadadvancingaccess.com	Co-pay program covers up to $6,000 per year with no monthly limit.
Prezcobix	Janssen Therapeutics	866-961-7169; prezcobix.com; jtsavings.com	800-652-6227; jjpaf.org	Co-pay program covers up to $7,500/year with no monthly limit. Card available through provider or at jtsavings.com.
Prezista	Janssen Therapeutics	866-961-7169; prezista.com; jtsavings.com	800-652-6227; jjpaf.org	Co-pay program covers up to $7,500/year with no monthly limit. Card available through provider or at jtsavings.com.
Rescriptor	ViiV Healthcare	844-588-3288; viivconnect.com	844-588-3288; viivconnect.com	Co-pay program covers up to $2,400 per year with no monthly limit.
Retrovir	ViiV Healthcare	None.	877-784-4842; viivconnect.com	No co-pay card; generic available. Patient assistance program only.
Reyataz	Bristol-Myers Squibb	888-281-8981; bms3assist.com	888-281-8981; bms3assist.com	Co-pay program covers up to $7,500 per year with no monthly limit.
Selzentry	ViiV Healthcare	844-588-3288; viivconnect.com	844-588-3288; viivconnect.com	Co-pay program covers up to $2,400 per year with no monthly limit.
Stribild	Gilead Sciences	877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	Co-pay program covers up to $6,000 per year with no monthly limit.
Sustiva	Bristol-Myers Squibb	888-281-8981; bms3assist.com	888-281-8981; bms3assist.com	Co-pay program covers up to $7,500 per year with no monthly limit.
Tivicay	ViiV Healthcare	844-588-3288; viivconnect.com	844-588-3288; viivconnect.com	Co-pay program covers up to $6,000 per year with no monthly limit.
Triumeq	ViiV Healthcare	44-588-3288; viivconnect.com	877-784-4842; viivconnect.com	Co-pay program covers up to $6,000 per year with no monthly limit.
Trizivir	ViiV Healthcare	None.	877-784-4842; viivconnect.com	No co-pay card; generic available. Patient assistance program only.
Truvada	Gilead Sciences	877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	Co-pay program covers up to $3,600 per year with no monthly limit.
Tybost	Gilead Sciences	877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	Co-pay program covers up to $600 per year with a monthly maximum of $50.
Videx EC	Bristol-Myers Squibb	None.	pparx.org	No co-pay card; generic available. Patient assistance program through pparx.org.
Viracept	ViiV Healthcare	844-588-3288; viivconnect.com	844-588-3288; viivconnect.com	Co-pay program covers up to $2,400 per year with no monthly limit.
Viramune XR	Boehringer Ingelheim	None.	pparx.org	No co-pay card for Viramune; available as generic. Patient assistance program through pparx.org.
Viread	Gilead Sciences	877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	Co-pay program covers up to $3,600 per year with a monthly maximum of $300.
Zerit	Bristol-Myers Squibb	None.	pparx.org	No co-pay card; generic available. Patient assistance program through pparx.org.
Ziagen	ViiV Healthcare	None	844-588-3288; viivconnect.com	No co-pay card; generic available. Patient assistance program only.

KNOW WHERE TO LOOK: PAYING FOR HIV PREVENTION (PrEP) AND FOR HIV-RELATED CONDITIONS

HIV PREVENTION

DRUG	COMPANY	CO-PAY PROGRAM	PATIENT ASSISTANCE	DETAILS
Truvada for PrEP	Gilead Sciences	877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	For HIV-negative individuals to prevent HIV. Truvada for PrEP Medication Assistance Program (MAP) covers co-pays up to $3,600/year with no monthly cap (additional support considered on case-by-case basis—call number); for uninsured provides free drug for those with incomes below 500% FPL.

HIV-RELATED CONDITIONS

DRUG / ASSAY	COMPANY	CO-PAY PROGRAM	PATIENT ASSISTANCE	DETAILS
Androgel (testosterone gel 1% & 1.62%) For adult males with low or no testosterone	AbbVie, Inc.	855-243-5162; androgel.com	800-222-6885: abbviepaf.org; pparx.org	Co-pay: Patient pays first $10, then covers up to $100 per month for a total of 12 transactions. Card available through provider or print the card online.
Axiron (topical liquid testosteronel solution 30 mg/1.5 mL) For adult males with low or no testosterone	Eli Lilly and Company	877-929-4766; axiron.com	855-559-8783; lillycares.com	Co-pay: First month free; patient pays first $25, then covers up to $75 per month. Card available online. Free 30-day sample through Axiron representative.
Egrifta Injectable for treating HIV-related excess belly fat (lipohypertrophy)	Theratechnologies	844-347-4382; egrifta.com	844-347-4382; egrifta.com	Call number or go to egrifta.com for program details.
Fortesta (testosterone gel 2%) For adult males who have low or no testosterone)	Endo Pharmaceuticals	800-462-3636; fortestagel.com	None.	Co-pay amount depends on the type of patient's insurance (commercial vs. government vs. no insurance).
Mytesi Anti-diarrheal approved for use in those with HIV/AIDS and on antiretroviral therapy.	Napo Pharmaceuticals	877-336-4377; mytesi.com	888-527-6276; mytesi.com/mytesi-savings.html	Pay no more than $25 with a max benefit of $100 on each prescription.
HLA-Aware HLA-B*5701 test to determine if a person can start taking Ziagen, Epzicom, Trizivir, or Triumeq	LabCorp/ ViiV Healthcare	viivhcdxresource.com/home	877-844-8872; viivhcdxresource.com/HLA/AwareProgram	Covers entire cost of test for insured/uninsured if you qualify. Test must be ordered by provider. Contact local ViiV rep, order online, or call.
Natesto (testosterone) nasal gel For adult males with low or no testosterone	Aytu BioScience	855-298-8246; natesto.com	None.	No PAP. Co-pay: Patient pays first $25, then up to $150 per prescription.
Procrit Treats anemia due to zidovudine therapy	Janssen Pharmaceuticals	None.	800-652-6227; jjpaf.org	No co-pay program, PAP only. Medicare Part D Extra Help with Low-Income Subsidy available; go to secure.ssa.gov/i1020/start
Radiesse Injectable facial filler approved for use in people with HIV to treat facial fat loss (lipoatrophy)	Merz Aesthetics	None.	866-862-1211; radiesse.com	No co-pay program. PAP is sliding scale based on patient's annual income up to $50,000; reimbursement goes directly to physician.
Sculptra Injectable facial filler approved for use in people with HIV to treat facial fat loss (lipoatrophy)	Galderma	None.	866-735-4137 needymeds.org	No co-pay program. PAP provides two kits and one follow-up kit. Free for those with an annual income below $23,760 , and then on a sliding scale up to $61,940.
Serostim Injectable human growth hormone used for treating HIV-associated wasting in those on ART	EMD Serono	877-714-2947; serostim.com	877-714-2947; serostim.com; 866-962-1128	Co-pay program covers up to $1,500 per prescription with a maximum of 12 discounts per lifetime.
Trofile Assay A test to determine the tropism of a person's HIV to see if a CCR5 antagonist (such as Selzentry) would be effective	Monogram Biosciences	None.	877-436-6243; monogrambio.com; viivhcdxresource.com/TropismTesting/TAP	Gateway coverage for uninsured/underinsured; assists in prior authorization or if insurance reimbursement is denied. ViiV also has Tropism Access Program (TAP) for ADAP eligible; see website, or contact state ADAP.

POSITIVELY AWARE

READER SURVEY

Hey, it's been a while since our last survey, and we want to hear from you!

Please take a few minutes to fill out the survey below—it would really help us out. Then just scan or take a picture of the page and email it to us at readersurvey@tpan.com. You can also tear out, fold, tape and mail the survey to us at no charge. (If you use your own envelope and stamp, it'll save us postage.) Or, if you prefer, take the survey online at positivelyaware.com/2017survey. All responses are completely anonymous. **Thank you for your help!**

1. I primarily read POSITIVELY AWARE:
- ❑ In print
- ❑ Online/Internet

2. I rely on POSITIVELY AWARE for (check all that apply):
- ❑ HIV treatment and drug information
- ❑ The latest HIV-related medical and scientific information
- ❑ Stories about the lives of those living with HIV
- ❑ Information related to HIV and aging
- ❑ Stories about TPAN, POSITIVELY AWARE's non-profit publisher

3. I read POSITIVELY AWARE because:
- ❑ I am an individual living with or affected by HIV
- ❑ I am a healthcare provider
- ❑ I work at an AIDS service organization or community-based organization
- ❑ Other: _____

4. I get my POSITIVELY AWARE: (check all that apply):
- ❑ As a subscriber
- ❑ From a household member/friend/relative who subscribes
- ❑ From a doctor/health care organizer
- ❑ From a case manager/AIDS service organization
- ❑ Online/Internet
- ❑ Other: _____

5. I was born in the year: _____

6. My gender:
- ❑ Male
- ❑ Female
- ❑ Transgender (M-F)
- ❑ Transgender (F-M)
- ❑ Other: _____

7. My ethnicity:
- ❑ American Indian or Alaskan Native
- ❑ Arab or Middle Eastern
- ❑ Asian
- ❑ Black or African American
- ❑ Hispanic or Latino
- ❑ Native Hawaiian or other Pacific Islander
- ❑ White
- ❑ Other: _____

8. I live in ZIP code: _____

9. My annual household income is:
- ❑ Less than $15,000
- ❑ $15,000–$34,999
- ❑ $35,000–$49,999
- ❑ $50,000–$74,999
- ❑ $75,000–$99,999
- ❑ $100,000 or more

10. My HIV status is:
- ❑ HIV-positive
- ❑ HIV-negative
- ❑ Unknown
- ❑ I prefer not to disclose

(If you chose HIV-negative or declined to disclose, skip to question 14)

11. I have been HIV-positive for:
- ❑ Less than 1 year
- ❑ 1 to 5 years
- ❑ 6 to 10 years
- ❑ 11 to 15 years
- ❑ More than 15 years
- ❑ N/A

12. My HIV treatment:
- ❑ I am currently on HIV medication
- ❑ I am not currently on HIV medication
- ❑ I was taking HIV medication but stopped
- ❑ I am considering starting HIV medication

13. As someone living with HIV, my biggest concern is:

_____

14. I am, or have been, treated for the following (check all that apply)**:**
- ❑ Hepatitis C
- ❑ Cervical cancer
- ❑ Anal cancer
- ❑ Heart disease
- ❑ Arthritis
- ❑ High blood pressure
- ❑ Diabetes
- ❑ None of the above
- ❑ I prefer not to disclose

15. Other comments: _____

_____

_____

_____

_____

_____

TEAR ALONG THIS LINE

TEAR ALONG THIS LINE

FOLD ALONG THIS LINE

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TAPE FLAPS TOGETHER. **DO NOT STAPLE!**

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RIDE FOR AIDS CHICAGO
JULY 8–9, 2017

THIS IS YOUR YEAR.

Challenge yourself to give back this year. Join TPAN's 100- and 200-mile cycling fundraiser, the **Ride for AIDS Chicago**. The Ride benefits HIV/AIDS services and related programming in Chicago. Riders receive free online and in-person cycling training and fundraising assistance.

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rideforaids.org

TPAN 30 YEARS