Out of the hospital, but not out of the woods.

Venous thromboembolism (VTE) risk for acutely ill medical patients is highest in the first 30 days, starting with hospital admission. See how the threat of VTE events persists long after discharge in acutely ill medical patients, on reverse. Visit VTERiskfacts.com
VTE risk is pervasive, persistent, and preventable, both in and out of the hospital\textsuperscript{1,2}

The period of greatest VTE risk increases and extends through day 30\textsuperscript{1}

Most VTE events occur post-discharge in acutely ill medical patients\textsuperscript{1}

See the full scope of this deadly yet preventable problem\textsuperscript{2,3}

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SLASH DIABETES SPENDING

Five promising treatments to watch
Improve patient support systems
Use tech to your advantage
THERE'S EYLEA—a treatment option that can fit your plans for proven visual acuity outcomes

- EYLEA has proven outcomes as demonstrated in phase 3 clinical trials in patients with Wet AMD, Macular Edema following RVO, DME, and DR in patients with DME.
- With monthly and every-other-month dosing, EYLEA offers flexible dosing options to meet the needs of your providers and your members.

INDICATIONS AND IMPORTANT SAFETY INFORMATION

INDICATIONS

- EYLEA® (aflibercept) Injection is indicated for the treatment of patients with Neovascular (Wet) Age-related Macular Degeneration (AMD), Macular Edema following Retinal Vein Occlusion (RVO), Diabetic Macular Edema (DME), and Diabetic Retinopathy (DR) in Patients with DME.

CONTRAINDICATIONS

- EYLEA® (aflibercept) Injection is contraindicated in patients with ocular or periocular infections, active intraocular inflammation, or known hypersensitivity to aflibercept or to any of the excipients in EYLEA.

WARNINGS AND PRECAUTIONS

- Intravitreal injections, including those with EYLEA, have been associated with endophthalmitis and retinal detachments. Proper aseptic injection technique must always be used when administering EYLEA. Patients should be instructed to report any symptoms suggestive of endophthalmitis or retinal detachment without delay and should be managed appropriately. Intraocular inflammation has been reported with the use of EYLEA.
- Acute increases in intraocular pressure have been seen within 60 minutes of intravitreal injection, including with EYLEA. Sustained increases in intraocular pressure have also been reported after repeated intravitreal dosing with VEGF inhibitors. Intraocular pressure and the perfusion of the optic nerve head should be monitored and managed appropriately.
- There is a potential risk of arterial thromboembolic events (ATEs) following intravitreal use of VEGF inhibitors, including EYLEA. ATEs are defined as nonfatal stroke, nonfatal myocardial infarction, or vascular death (including deaths of unknown cause). The incidence of reported thromboembolic events in wet AMD studies during the first year was 1.8% (32 out of 1824) in the combined group of patients treated with EYLEA. The incidence in the DME studies from baseline to week 52 was 3.3% (19 out of 578) in the combined group of patients treated with EYLEA compared with 2.8% (8 out of 287) in the control group; from baseline to week 100, the incidence was 6.4% (37 out of 578) in the combined group of patients treated with EYLEA compared with 4.2% (12 out of 287) in the control group. There were no reported thromboembolic events in the patients treated with EYLEA in the first six months of the RVO studies.

ADVERSE REACTIONS

- Serious adverse reactions related to the injection procedure have occurred in <0.1% of intravitreal injections with EYLEA including endophthalmitis and retinal detachment.
- The most common adverse reactions (>5%) reported in patients receiving EYLEA were conjunctival hemorrhage, eye pain, cataract, vitreous floaters, intraocular pressure increased, and vitreous detachment.

Please see brief summary of full Prescribing Information on the following page.

EYLEA is a registered trademark of Regeneron Pharmaceuticals, Inc.

REGENERON

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US-PMA-12565
5.3 Thromboembolic Events. There is a potential risk of arterial or venous thromboembolic events (ATEs) following intravitreal use of VEGF inhibitors, including EYLEA. ATEs are defined as nonfatal stroke, nonfatal myocardial infarction, or vascular death (including death due to unknown causes). The incidence of reported thromboembolic events in wet AMD studies during the first year was 1.7% (1.2% for EYLEA and 0.5% for ranibizumab). The incidence in the DME studies from baseline to week 52 was 3.3% (19 out of 578) in the combined group of patients treated with EYLEA and 0.3% (2 out of 678) in the placebo group. From baseline to week 100, the incidence was 6.4% (37 out of 578) in the combined group of patients treated with EYLEA compared with 4.2% (12 out of 267) in the control group. There was no relationship between thromboembolic events and the use of EYLEA treated in the first six months of the RVO studies.

6. ADVERSE REACTIONS

The following adverse reactions are discussed in greater detail in the Warnings and Precautions section of the labeling:
- Endophthalmitis and retinal detachment
- Increased intraocular pressure
- Thromboembolic events

6.1 Clinical Trials Experience. Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be compared directly to rates in other clinical trials of the same or another drug and may not reflect the rates observed in practice. A total of 271 patients treated with EYLEA had the safety population in seven phase 3 studies. Among these, 218 patients were treated with the recommended dose of 2 mg. Serious adverse reactions related to the injection procedure occurred in <0.1% of intravitreal injections with EYLEA including endophthalmitis and retinal detachment. The most common adverse reactions (≥5%) reported in patients receiving EYLEA were conjunctival hemorrhage, vitreous floaters, inflammatory pressure increase, and vitreous hemorrhage.

6.2 Neovascular (Wet) Age-Related Macular Degeneration (AMD). The data described below reflect exposure to EYLEA in 1824 patients with wet AMD. Some patients may need every 4 weeks (monthly) dosing after the first 12 weeks (3 months).

6.3 Macular Edema Following Retinal Vein Occlusion (RVO). The recommended dose for EYLEA is (0.05 mL or 50 microliters) administered by intravitreal injection every 4 weeks (monthly) for the first 5 injections followed by 2 mg (0.05 mL) via intravitreal injection every 8 weeks (2 months). Although EYLEA may be dosed as frequently as 2 mg every 4 weeks (monthly), additional efficacy was not demonstrated in most patients when EYLEA was dosed every 4 weeks compared to every 8 weeks. Some patients may need every 4 week (monthly) dosing after the first 12 weeks (3 months).

6.4 Diabetic Macular Edema. The recommended dose for EYLEA is (0.05 mL or 50 microliters) administered by intravitreal injection every 4 weeks (monthly) for the first 5 injections followed by 2 mg (0.05 mL) via intravitreal injection once every 8 weeks (2 months). Although EYLEA may be dosed as frequently as 2 mg every 4 weeks (monthly), additional efficacy was not demonstrated in most patients when EYLEA was dosed every 4 weeks compared to every 8 weeks. Some patients may need every 4 week (monthly) dosing after the first 20 weeks (5 months).

6.5 Preparation for Administration. EYLEA should be inspected visually for particulates and cloudiness. If particulates, cloudiness, or discoloration are present, EYLEA should not be administered by intravitreal injection once every 8 weeks (2 months). Although EYLEA may be dosed as frequently as 2 mg every 4 weeks (monthly), additional efficacy was not demonstrated in most patients when EYLEA was dosed every 4 weeks compared to every 8 weeks. Some patients may need every 4 week (monthly) dosing after the first 12 weeks (3 months).

7. DOSAGE FORMS AND STRENGTHS

Single-use, glass vial designed to provide 0.05 mL of 40 mg/mL solution (2 mg) for intravitreal injection.

8. CONTRAINDICATIONS

- Patients with a history of known hypersensitivity to aflibercept or any of the excipients in EYLEA.
- Known hypersensitivity to the preservatives used in EYLEA, including benzalkonium chloride.
- Patients with a history of known exposure to immunomodulatory agents, including TNF blockers and other biologic therapies.

9. WARNINGS AND PRECAUTIONS

5.1 Endophthalmitis and Retinal Detachments. Intravitreal injections, including those with EYLEA, have been associated with endophthalmitis and retinal detachments (see Adverse Reactions). Proper aseptic injection technique must always be used when administering EYLEA. Patients should be instructed on the importance of good hygiene and the importance of not sharing devices or dropper tips or lenses. A decision must be made whether to discontinue nursing or to discontinue the drug. It is unknown whether aflibercept is excreted in human milk. Because many drugs are excreted in human milk, a risk to the nursing child cannot be excluded. EYLEA should be considered during breastfeeding. A decision must be made whether to discontinue nursing or to discontinue the drug with EYLEA, taking into account the importance of the drug to the mother.

10. ADVERSE REACTIONS

The following adverse reactions have been identified during postapproval use of EYLEA. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

- Hypersensitivity including rash, pruritus, and urticaria as well as isolated or Stevens-Johnson reactions.

11. USE IN SPECIFIC POPULATIONS

11.1 Pregnancy. Pregnancy Category C. Aflibercept produced embryofetal toxicity when administered every three days during organogenesis to pregnant rabbits at intravenous doses of 0.02 mg/kg/day or, every six days at subcutaneous doses of 0.05 mg/kg. Adverse embryofetal effects included increased incidences of postimplantation loss and fetal malformations, including anasarca, umbilical hernia, diaphragmatic hernia, gastrointestinal, cleft palate, exotrichotic, intestinal atresia, spina bifida, enophthalmos/orchidopelyme, urethral and major vessel defects, and skeletal malformations (fused vertebrae, hemivertebrae, and ribs; supernumerary vertebral arches and ribs; and incomplete ossifications). The maternal No Observed Adverse Effect Level (NOAEL) was 0.01 mg/kg/day. Aflibercept is distributed into the milk of lactating rabbits. The milk: plasma ratio for aflibercept was approximately 1:10 times the plasma concentration observed in humans after an intravitreal dose of 2 mg. It is unknown whether aflibercept is excreted in human milk. Because many drugs are excreted in human milk, a risk to the breastfeeding child cannot be excluded. EYLEA is not recommended for breastfeeding. A decision must be made whether to discontinue nursing or to discontinue the drug with EYLEA, taking into account the importance of the drug to the mother.

11.2 Pediatric Use. The safety and effectiveness of EYLEA in pediatric patients has not been established. The safety and effectiveness of aflibercept in patients 65 years of age and older have not been established. Aflibercept is highly dependent on the sensitivity and specificity of the assays used, sample handling, timing of sample collection, concomitant medications, and reference standards. For these reasons, comparison of the incidence of antibodies to EYLEA with the incidence of antibodies to other products may not be appropriate.

11.3 Nursing Mothers. It is unknown whether aflibercept is excreted in human milk. Because many drugs are excreted in human milk, a risk to the breastfeeding child cannot be excluded. EYLEA should be considered during breastfeeding. A decision must be made whether to discontinue nursing or to discontinue the drug with EYLEA, taking into account the importance of the drug to the mother.

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12.3 Nursing Mothers. It is unknown whether aflibercept is excreted in human milk. Because many drugs are excreted in human milk, a risk to the breastfeeding child cannot be excluded. EYLEA is not recommended for breastfeeding. A decision must be made whether to discontinue nursing or to discontinue the drug with EYLEA, taking into account the importance of the drug to the mother.

12.4 Geriatric Use. In the clinical studies, approximately 76% (2049/2701) of patients randomized to treatment with EYLEA were ≥65 years of age and approximately 46% (1202/2670) were ≥75 years of age. There were no significant differences in efficacy or safety were seen with increasing age in these studies.

13. PATIENT COUNSELING INFORMATION

In the days following EYLEA administration, patients are at risk of developing endophthalmitis or retinal detachment. If the eye becomes red, sensitive to light, or develops a change in vision, advise patients to seek immediate care from an ophthalmologist (see Warnings and Precautions). Patients may experience temporary visual disturbances after an intravitreal administration of EYLEA and the associated eye examinations (see Adverse Reactions). Advise patients not to drive or use machinery until visual function has recovered sufficiently. EYLEA is a registered trademark of Regeneron Pharmaceuticals, Inc. © 2016, Regeneron Pharmaceuticals, Inc. All rights reserved. Issue Date: June 2016 Initial U.S. Approval: November 2010.
Unlock the potential

This issue’s cover story couldn’t be more timely. More than 100 million U.S. adults are now living with diabetes or prediabetes, according to a recent report by the CDC. While the report indicates some progress in fighting diabetes, this is still a staggering figure, and it’s our job as healthcare executives to address it. But how should we? Is more research needed? Better management? More preventive measures? At HealthPartners, our answer has been all of the above. I’m sure many of you would agree.

As an integrated organization, we’re leveraging our care delivery, healthcare financing, and research institute together to fuel change. There’s no one silver bullet. But, here are a few of the ways we are seeing progress.

**Advancing research**

Just last year, we were part of a team that helped bring the first version of an artificial pancreas to market. This device is a closed-loop system that automatically delivers insulin to people with type 1 diabetes based on their blood sugar levels. The International Diabetes Center, which is part of HealthPartners Institute, was one of 10 sites in the world to conduct critical research on the use of this technology.

**A more personalized approach**

We’re also exploring new ways to help members with diabetes achieve better outcomes. This work is going beyond a traditional focus on quality measures and identifying where else we can have an impact on quality of life. For example, we know there is a strong relationship between dental health and diabetes. Among our members with diabetes, the rate of well-controlled blood sugars is 10% higher for those who have had a dental visit compared to those with no dental visit.

Just this month, we launched a personalized outreach campaign to members with diabetes who have both medical and dental coverage with us. We’re letting them know more about the relationship between healthy teeth and gums and diabetes, and about their specific dental benefits.

**Reframing how we think about prevention**

In our commercial health plan members, more than 20% who are prediabetic are diagnosed with diabetes in the following three years. That’s why we’re directly addressing health outside our clinic walls. We have convened communities in a multisector collaboration at four levels: healthy environment, outreach, programs, and clinics. An example of this approach is PowerUp, a community-wide initiative with a long-term strategy to “make it easy, fun, and popular to eat better and move more.”

Facets of the program include robust school wellness policies; healthier food shelves, cafeterias and concessions, and open gyms. A key program is the School Challenge, inspiring kids to eat fruits and vegetables. Now going into its seventh year, the classroom-based program includes more than 60 schools and reaches more than 22,000 students annually.

**What’s ahead?**

As the CDC acknowledged, we’ve made progress. We’re improving how we address people who have developed risk factors and have developed disease. We need to continue to do that, while at the same time, find ways of providing treatments and interventions to help those with diabetes live healthier lives.

In the long run, the real win is primary prevention. What can we do to help people prevent developing risk factors and ultimately diabetes? It’s not easy, but it’s the long view and where we will find the best outcomes and affordability.

Kevin Ronneberg, MD, is a Managed Healthcare Executive editorial advisor and vice president and associate medical director, Health Initiatives, at HealthPartners.
Mission: Managed Healthcare Executive provides healthcare executives at health plans and provider organizations with analysis, insights, and strategies to pursue value-driven solutions.

Roy Beveridge, MD, is senior vice president and chief medical officer for Humana, where he is responsible for developing and implementing Humana’s clinical strategy with an emphasis on advancing the company’s integrated care delivery model.

Mark Boxer, PhD, is executive vice president and global chief information officer for Cigna, where he is responsible for driving the company’s worldwide technology strategy.

Joel V. Brill, MD, is the chief medical officer for Predictive Health, LLC, which partners with stakeholders to improve coverage of value-driven care that optimizes health for people.

David Calabrese, RPh, MHP, is senior vice president and chief pharmacy officer at OptumRx, a pharmacy benefits firm that provides pharmacy care services for more than 65 million lives nationally.


Perry Cohen, PharmD, is chief executive officer of The Pharmacy Group and the TPG family of companies, which provides services to associations, healthcare and information technology organizations, payers and pharmaceutical companies.

Darnell Dent is president and CEO of FirstCare Health Plans, a provider-sponsored health plan serving local communities in West Texas with offices in Ablene, Amarillo, and Lubbock; and, corporate offices in Austin, Texas.

Don Hall, MPH, is principal of DeltaSigma LLC, a consulting practice specializing in strategic problem solving for managed care organizations. He most recently served as president and chief executive officer of a nonprofit, provider-sponsored health plan.

Daniel J. Hilferty, MPA, is president and CEO, Independence Health Group, a leading health insurance organization headquartered in Southeastern Pennsylvania with nearly 8.5 million members in 24 states and Washington, D.C.

Cynthia Hundorfean is president and CEO of Allegheny Health Network (AHN), an integrated healthcare delivery system that serves Western Pennsylvania. AHN is part of the Highmark Health family of companies.

John Mathewson, MHSA, is interim president and CEO for the DC Primary Care Association, an advocacy and infrastructure organization for Washington, D.C., and Maryland area community primary care providers. He has held C-suite roles for managed care, hospital, and home care companies.

Margaret A. Murray, MPA, is the founding chief executive officer of the Association for Community Affiliated Plans, which represents 54 nonprofit safety net health plans in 26 states.

Kevin Ronneberg, MD, is vice president and associate medical director for health initiatives at HealthPartners, an integrated, nonprofit healthcare provider and health insurance company located in Bloomington, Minnesota.

David Schmidt is president of the TPG International Health Academy, which hosts trade/study missions around the world for U.S. healthcare executives. He also provides strategic consulting to health plans and health systems.

Dennis Schmuland, MD, is chief health strategy officer, U.S. Health & Life Sciences division of Microsoft Corp., where he is responsible for setting the company’s strategy and overseeing solutions for the managed care industry.

Paul J. Setlak, PharmD, MBA, is director of field health outcomes at AstraZeneca, where he is responsible for leading field-based clinical and health outcomes activities with payers, integrated delivery networks, health systems, and other groups.

Amy Shin is the CEO of Health Plan of San Joaquin, a not-for-profit plan serving 350,000 Medicaid members in San Joaquin and Stanislaus counties of California. Amy has 20 years of progressive Medicare, Medicaid and commercial managed care leadership experience.

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Diabetes Treatment Advances
Five new approaches could improve care, cut costs

18 New medications  19 Glucose monitors  21 Artificial pancreas
New Skills Sought by Managed Care Organizations

Changing market dynamics shift needs

by AINE CRYTS

Managed care organizations have a brand new relationship to manage: Consumers. Zach Hafner, partner at The Advisory Board Company consulting firm, refers to this shift as the “awakening of the sleeping giant.” But that’s not the only major change the market is experiencing. Plans and providers also face growing demands to improve quality and reduce costs. These pressures are pushing many organizations to value a new set of skills in their leaders. Here’s what they are looking for.

Leaders who can create a consumer-friendly experience

Two of the biggest new trends in leadership roles within managed care organizations are chief customer experience officers and chief transformation officers, says Hafner. These individuals are charged with driving clinical transformation and consumer engagement.

For example, they might lead the charge for mapping out the entire consumer journey, from thinking about the service being provided to determining how best to appeal to consumers. They might also determine how patients will find online scheduling on the health system’s website, for example, and what type of experience patients should have regarding their financing options.

Leaders who can help curb physician burnout

None of the challenges facing healthcare have easy solutions, and physicians are hit particularly hard with new demands, says Alan London, MD, director at BDC Advisors, a healthcare consulting firm. They face pressures to cut costs, increase quality transparency, and improve patient satisfaction.

That’s why physician engagement and satisfaction—and burnout—are big issues that must be tackled by C-suite executives. “We’re increasingly seeing a lot of burnout and turnover among angry providers, who aren’t satisfied [with the practice of medicine],” says London.

What’s needed, he says, is a physician executive who can create bidirectional communication between frontline physicians and...
the C-suite. “Physician CEOs have a level of understanding of providers themselves. [They understand] the blood, sweat, and tears they go through as they care for patients,” says London.

He adds: “There’s been a disconnect between the C-suite and those providing care ... and when doctors aren’t in key roles of leadership in the organization, it sends the message that they’re not important.”

**Leaders who can drive value**

Managed care organizations face growing scrutiny regarding quality and costs. They need leaders who can innovate and identify ways to improve in both areas, says London.

“Leaders who can drive value”

These leaders should be able to take a step back and make smart decisions about where to invest scarce resources. Absent this type of strategic decision-making, there won’t be money to invest in research and improving patient care, he says.

It’s critical to figure out how to deliver “A+ care for less,” says London, adding that this requires executives who can prevent deterioration in the delivery of care while creating the right physician compensation and incentive plans.

**Most effective health IT teams**

Putting together the right team of data specialists is an important part of the future growth of a healthcare organization. Healthcare data is growing at 48% per year since 2013, according to a report by EMC Digital Universe.

Experts say analyzing all that data can’t be an additional responsibility of the IT department. “Healthcare organizations will need to recognize that the skills required for data analytics are not merely an extension of existing personnel but will require additional training or acquisition of staff,” says John Zaleski, chief analytics officer at Bernoulli, which develops medical device integration and clinical surveillance solutions for hospitals and health systems. “Data are becoming more and more part of day-to-day clinical care. As such, the need for those individuals trained in the acquisition, cleaning, interpretation, and identification of value will be required.”

When establishing a data analytics team, the most important players include:

- Chief analytics officer (CAO)
- Data scientist
- Business intelligence manager
- Nursing informatics specialist

For more on each of these roles, visit [http://bit.ly/HealthIT-team](http://bit.ly/HealthIT-team)

**Recommended reading**

With all of the change and uncertainty in healthcare, how can current and future leaders in the payer world prepare? “Stop complaining and get out of your comfort zone. Get out of the echo chamber,” says Don Hall, Managed Healthcare Executive editorial advisor and principal, Delta Sigma, LLC. He says healthcare leaders should add these books to their must-read lists:

- “The Checklist Manifesto: How to Get Things Right,” by Atul Gawande
- “Nuts!: Southwest Airlines’ Crazy Recipe for Business and Personal Success,” by Kevin and Jackie Freiberg

Hall hopes that today’s leaders can tap into the type of disruptive thinking that led Jeff Bezos to create Amazon.com, an online marketplace that had never existed before, and apply those lessons to reinventing healthcare.

**More online**

The newest diabetes technology advances aim to make management a seamless part of patients’ lives. In the next five years, experts say artificial pancreas devices that work on a closed-loop delivery system and require minimal patient maintenance will be smaller and smarter. Also in the pipeline, are advances in glucose-responsive “smart insulins” that turn on or off based on patients’ needs, and stem-cells treatments that can be transplanted into patients with little risk of rejection, says Laurence Alberts, CEO of Cam Med, a medical technology device company.

Here’s more on how new technologies and new technology partnerships could change the landscape of diabetes care.

1/ New applications for wearable technology
Healthcare technology companies are partnering with well-known wearable companies to identify diabetes monitoring and management opportunities.

At press time, Dexcom, a technology company that develops continuous glucose monitoring (CGM) devices, is awaiting FDA approval for a CGM device that works directly with the Apple Watch independently (without the use of an iPhone). Fitbit already has partnerships with Dexcom and Medtronic CGM devices that involve integrating blood sugar data with devices. Fitbit’s recent $6 million investment in, Sano, a startup aiming at creating a coin-sized CGM patch, underscores growing interest in the technology.

Will CGMs deliver?
Despite technology advances, finger pricks continue to be the most accurate way to monitor glucose levels in patients with type 2 diabetes, says Dachis.

“We are huge proponents of continuous glucose monitoring, but it will not end up being the best or most cost-effective solution for a large portion of the market,” he says. “Traditional finger pricks provide the most accurate readings outside of the lab, and they happen to deliver the best diagnostic outcome at the lowest cost. For this reason, we don’t believe traditional blood glucose monitoring is going anywhere for the majority of people with diabetes anytime soon.”

CGM contact lenses
Scientists are exploring how to make CGM a reality through contact lenses. Google began testing contact lens technology for diabetes management in 2014 but has yet to receive FDA approval at press time.

A January 2018 research article in Science Advances lists the possibility of soft, smart contact lenses that can transmit glucose levels from patient tears in real time. The lenses are also transparent and have no bulky technology or edges that can harm patients’ eyes or limit their vision.

Users would be alerted to an increase in glucose levels by an LED light embedded in the lens. The research was conducted by the Ulsan National Institute of Science and Technology in South Korea.

“We report an unconventional approach for the fabrication of a soft, smart contact lens in which glucose sensors, wireless power transfer circuits, and display pixels to visualize sensing signals in real time are fully integrated using transparent and stretchable nanostructures. The integration of this display into the smart lens eliminates the need for additional, bulky measurement equipment,” the article’s authors said.

The contact lenses have been tested on rabbits, not humans, and researchers have yet to determine when testing on humans would begin.
Technology

OneDrop, a diabetes management digital platform that includes blood data transmitted by Bluetooth, also partnered with Fitbit in late 2017 to integrate fitness and diabetes data into the activity tracker. Jeffrey Dachis, founder and CEO of OneDrop, says the company’s partnerships with companies including Fitbit, Apple, and Dexcom will provide patients with “actionable insights” that lead to better outcomes. “Doctors and clinicians don’t have the time or the resources to spend digging through users’ data or helping them engage in the psychosocial issues that happen outside the doctor’s office,” Dachis says. “OneDrop makes sense of the wearable’s data and fills those gaps.”

2/ Removable implant for type 1 diabetics
Researchers at Cornell University have created a removable implant to control insulin for type 1 diabetics. The six-foot thread mimics thousands of islet cells in the patient. It is implanted in the peritoneal cavity (in the abdomen) through a minimally invasive laparoscopic procedure. The thread is easy to remove once it no longer works in the body.

Duo An, a doctoral student in the department of biological and environmental engineering and co-lead author of the paper introducing the technology, says the team is working toward clinical trials. The device could help make diabetes management easier for patients because their blood glucose level will be self-regulated for months or even years, says An.

3/ Flexible insulin-release patch
Makers of a bandage-like insulin delivery system hope the technology can help make children and adult users with type 1 diabetes more comfortable with treatment. The Evopump by Cam Med is an automated insulin delivery patch about the size of a business card that is flexible and has multiple reservoirs for insulin delivery. The device can be worn by patients for about a week, with insulin filled by users and administered in premeasured doses through a thin tube inserted into the body through the patch. The company is calling it a “patch-like-pump,” and it is still in the development stage. Alberts says a prototype could be available to test by the end of 2018.

He hopes the patch will provide an alternative to artificial pancreas devices, which are often large and cumbersome, especially for children and patients with mobility issues. “Many patients would be better off with a pump automatically delivering small doses of medication especially when part of a closed-loop system, yet available pumps are still too chunky, visible, complicated and costly so most patients don’t use them,” says Alberts.

The patch will be cheaper and remove economic barriers that have stalled pump adoption, he says, noting the cost of pump supplies alone can add up to thousands of dollars each year. “For all the technical advances of the artificial pancreas to be realized, these on-body systems need to get smaller, more discreet, out-of-the-way, simpler, and less expensive,” says Alberts.

Donna Marbury is a writer in Columbus, Ohio.
Gene Therapy and Gene Editing

Impact and potential by MARI EDLIN

Although only three gene therapies have been approved in the United States—all in 2017—these innovative treatments are leaving their imprint on the healthcare system.

Novartis’ Kymriah (tisagenlecleucel), a chimeric antigen receptor (CAR) T-cell therapy for certain pediatric and young adults with a form of acute lymphoblastic leukemia received a nod last August, and Kite’s Yescarta (axicabtagene ciloleucel), a CAR T-cell therapy for non-Hodgkin lymphoma, in October.

Spark Therapeutics’ Luxturna (voretigene neparvovec-rzyl) for retinal dystrophy, approved in December, is the first gene therapy in the U.S. to be administered directly, delivering a normal copy of the RPE65 gene into retinal cells.

Price tags for these therapies are unprecedented but hardly unexpected. Luxturna sells for $850,000 per course of treatment, Kymriah for $475,000 per course, and Yescarta for $373,000 per course.

How it works

Gene therapy, which restores an abnormal or mutated gene but does not remove or modify defective DNA, introduces genetic material into cells via a carrier called a vector. Vectors are usually viruses that can infect a cell but won’t cause disease. The two

primary types of viruses are retroviruses that integrate their genetic material into a chromosome for replication and adenoviruses that enter a cell’s nucleus, the latter is most commonly used in cancer treatment.

DNA is either injected or given intravenously directly into a specific tissue (in vivo), or cells can be removed, treated in a lab setting, and returned to a patient to make a functioning protein (en vivo). The latter method is used for Kymriah, in which T-cells are genetically modified to contain a protein that targets and kills leukemia cells.

“Gene editing has tremendous promise; it can fight back against cancer by making cells resistant.”

—BEN SOLOMON, GENEDX

Genome editing, which can facilitate gene therapy, allows DNA to be inserted, deleted, modified, or replaced in a human cell to correct defective DNA. In essence, editing can eliminate problems in DNA and remove deadly inherited diseases.

CRISPR-Cas9 (clustered regularly interspaced short palindromic repeats) is the gene editing technology du jour, in which a Cas9 protein performs like molecular scissors, cutting strands of DNA and shutting off the targeted gene.

“Gene editing has tremendous promise; it can fight back against cancer by making cells resistant,” says Ben Solomon, managing director, GeneDx, a genetic testing company.

Thus far in the United States, CRISPR has not successfully fixed a genetic defect in a human patient, but has in human embryos with a mutation that can cause serious heart problems. China, with fewer regulatory barriers, is far ahead of the U.S. in deploying the technology and has already genetically engineered at least 86 cancer and HIV patients, according to an article in the Wall Street Journal in January 2018.

The University of Pennsylvania is awaiting federal clearance to move ahead with the technology at press time.
**Challenges**

As with any new medical technology, promoting efficacy, safety, and limiting side effects associated with gene therapy are prime objectives. Terence Flotte, MD, provost dean and professor, University of Massachusetts Medical School, says gene therapy treatments could face problems if vectors cannot deliver enough of a correct virus into a sufficient number of cells to make a difference in treating a condition and to uphold safety.

Christos Kyratsous, senior director, infectious disease and viral vector technologies for Regeneron, a biotechnology company, is concerned about how patients’ immune system will respond to gene therapy. “Vectors and/or viruses are foreign to our body; our immune system might start to fight against them and generate a response against it. We are trying to understand this process and exploring ways to avoid it from happening.”

Another unknown, adds Kyratsous, is how long a gene therapy will remain effective once delivered.

Sam Falsetti, PhD, head of medical strategy at Cambridge BioMarketing, a communications company specializing in rare orphan diseases, says another big challenge to gene therapy is the lack of treatment centers across the country.

**Payment models**

One of the biggest unknowns surrounding gene therapy and gene editing is insurance coverage. Falsetti is unsure whether committing to a million-dollar price tag for gene therapy holds more value than spending money for ongoing patient treatment, maintenance, and care using traditional therapy.

He also expresses concern over the economics of a payer covering gene therapy for a member who later moves to another insurer, leaving little time for a payer to recoup its investment.

Spark Therapeutics has three payer programs for Luxturna:

- An outcomes-based rebate arrangement with a long-term durability measure.
- An innovative contracting model.
- A proposal to CMS under which payments for Luxturna would be made over time.

The first arrangement provides rebates to an insurer if patients fail to meet a specified threshold of short-term efficacy, 30 days to 90 days, and long-term durability of 30 months. Spark’s rebates will not exceed those of Medicaid. Harvard Pilgrim Health Care has negotiated with Spark to establish this kind of contract.

“We are looking at innovative efficiencies by targeting the right population,” says Michael Sherman, MD, chief medical officer, Harvard Pilgrim. “Luxturna could be life-changing although expensive. It is difficult to pay such a high price if a drug fails.”

To define “value,” he says, it is critical to look at outcomes compared to costs. “There are medications, such as PCSK9s, that are expensive and effective but only of high value when patients with very high cholesterol take them; otherwise statins would suffice.”

Sherman says Harvard Pilgrim will cover Luxturna despite the price—especially when downstream costs of social services, family support, and the small number of patients who need it are considered. Coverage will be based on the FDA labeling for the drug, and will expedite claims processing and cap out-of-pocket amounts at in-network limits.

In Spark’s innovative contracting model, a commercial payer’s specialty pharmacy, rather than a treatment center, would purchase Luxturna. In return, a payer would agree to put Luxturna on its formulary. Accredo, Express Scripts’ Specialty Pharmacy, is managing the program.

Bill Martin, vice president and general manager, Accredo, says the tab for Luxturna should not be too high for any one insurer, as there are only about 1,000 people with retinal dystrophy in the United States, thus the cost will be spread across many payers.

Harvard Pilgrim has an agreement with Spark to purchase Luxturna directly from the manufacturer and in turn, reimburse treatment centers to administer the therapy.

Martin says this nontraditional model reduces the risk providers and hospitals face in keeping expensive inventory in their possession for such a limited patient population.

Finally, the arrangement with CMS would enable Spark to offer payers an option to spread payment for the drug over multiple

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“*Our clients struggle with how they can ensure [genetic] tests done for members make sense based on evidence, and then pay for them while avoiding those that drive up costs for everyone.*”

— KAREN LEWIS, GENETIC TESTING SOLUTION FOR AIM SPECIALTY HEALTH
years. Otherwise, a one-time payment would tax insurers with tremendous upfront costs, what Martin calls “budgetary shock.”

“I believe that coverage decisions are based on severity and benefit, but affordability is the big problem so we need to do anything we can to manage costs,” Martin says. He anticipates therapy will be a one-time treatment even though he believes reimbursement is not geared toward a single intervention.

Novartis also has developed a value-based arrangement with CMS in which the manufacturer will only accept full payment after patients respond to Kymriah by the end of the first month of treatment.

Gene testing
Genetic testing has a longer history than gene therapy and came to light in the early 1970s with screenings to detect fetal anomalies, such as Down syndrome and Tay-Sachs disease. The science took a dramatic turn in the 1990s, when mutated genes, BRCA1 and BRCA2, were found to be predictive of breast cancer.

Since then, just a drop of saliva can unearth a person’s genetic history, which might supply information for predisposition to certain diseases. Genetic testing also is used in diagnoses, to determine if a person is a carrier of a specific disease, in newborns to detect metabolic disorders, and for pharmacogenetics.

Karen Lewis, solution management director, Genetic Testing Solution for AIM Specialty Health, a Chicago-based specialty benefits management company and Anthem Blue Cross subsidiary, says there are 65,000 clinical genetic tests; however, most do not have clinical evidence.

“Our clients struggle with how they can ensure tests done for members make sense based on evidence, and then pay for them while avoiding those that drive up costs for everyone. It’s challenging for providers to keep up-to-date on data,” Lewis says.

To add to the dilemma, she says that there are only 200 CPT codes for those 65,000 tests with many of the same ones used for different tests.

AIM’s Genetic Testing Solution, implemented in July 2017 for fully insured and self-insured members, provides a real-time, automated system that can deliver prior authorization to doctors and allow them to select tests and labs. Lewis says the method, which incorporates a requirement for genetic counseling, can reduce paperwork errors and cut average time for submitting and processing claims from days to minutes. The prior authorization provides specific CPT code information to insurers facilitating claim processing.

Prior to the implementation, physicians had to verify test orders against medical necessity requirements and once approved, send paperwork to a lab. It was a post-service review.

UnitedHealthcare has implemented a similar program for genetic and molecular tests, which started last November for fully insured commercial members. — Karen Lewis, solution management director, Genetic Testing Solution, AIM Specialty Health

The next frontier: hemophilia
Hemophilia is an inherited bleeding disorder that prevents a person’s blood from clotting properly and is caused by a gene mutation. The most common types of hemophilia are hemophilia A (lack of clotting factor VIII) and hemophilia B (lack of clotting factor IX). “Although the population of patients with hemophilia is small, cost of treatment for an individual patient can be extremely high, from tens of thousands of dollars for each monthly prescription to over a million dollars per year,” says Crystal Blankenship, PharmD, senior clinical consultant for Accredo’s specialty pharmacy’s bleeding disorders therapeutic resource center.

The CDC estimates that about 15% to 20% of patients with hemophilia develop inhibitors that prevent treatments from working, further complicating therapy.

Jennifer Seagle, PharmD, area clinical manager for CompleteRx, says new gene therapy products are expected to be introduced in the next few years, enabling hemophilia patients to produce their own clotting factors, and to maintain the factors they have.

Gene editing defined
Scientists can use gene editing to change the DNA of many organisms, including plants, bacteria, and animals. Editing DNA can lead to changes in physical traits, like eye color, and disease risk. Scientists use different technologies to do this. These technologies act like scissors, cutting the DNA at a specific spot. Then scientists can remove, add, or replace the DNA where it was cut. The first genome editing technologies were developed in the late 1980s. More recently, a new genome editing tool called CRISPR, invented in 2009, has made it easier than ever to edit DNA. CRISPR is simpler, faster, cheaper, and more accurate than older genome editing methods. Many scientists who perform genome editing now use CRISPR. — National Human Genome Research Institute, NIH

Mari Edlin is a frequent contributor to Managed Healthcare Executive. She is based in Sonoma, CA.
Over the past few months, significant advances in diabetes treatment have been made, and more are on the horizon. That’s great news for managed care, because the disease, which affects nearly 10% of Americans, racks up significant costs. Patients with diabetes incur an average of $7,900 more in medical expenses annually than patients who do not have the disease, according to the American Diabetes Association (ADA). Overall, diabetes amounts to a whopping $245 billion in direct medical costs each year, and $69 billion in reduced productivity, according to an ADA study based on 2012 data. The largest cost contributors are hospital inpatient care and medications.

The latest treatment advances could help offset those costs, and others. New medication developments, for instance, are leading to easier medication regimens and, therefore, improve medication adherence. Other treatment innovations are helping prevent diabetes complications from escalating into costly hospital visits. Here’s more on the latest treatment developments healthcare executives should be watching.

DOUBLE-DUTY MEDICATIONS
Poorly controlled diabetes raises heart disease risks, says Roger Kulstad, MD, associate clinical professor of medicine, Division of Endocrinol-
ogy, at the University of Wisconsin School of Medicine and Public Health in Madison, Wisconsin. A study in the *British Medical Journal* estimated that every 1% increase in HbA1c above 6% is associated with a 14% increase in risk of heart attack.

Two classes of diabetes medications, SGLT2 inhibitors and GLP-1 receptor antagonists, show cardiovascular benefits for patients with diabetes at high risk for heart disease. The hope is that the medications may also help prevent or delay cardiovascular disease, says Anders L. Carlson, MD, medical director of the International Diabetes Center in St. Louis Park, Minnesota.

One SGLT-2 inhibitor, empagliflozin (Jardiance), makes patients excrete sugar, salt, and water, says Robert S. Busch, MD, director of clinical research at Albany Med: The Endocrine Group, in Albany, New York. The medication has been shown to lower cardiac death by 38% and heart failure by 35%. A GLP-1 antagonist, liraglutide (Victoza), a daily GLP-1, has been shown to lower cardiac death by 22%.

Also, several GLP-1 therapies only need to be administered once weekly, with a simplified pen. In addition to making management easier, these medications do not cause hypoglycemia (low blood glucose) when used alone or with other drugs that don’t cause hypoglycemia, Busch says. “This is a big concern when using insulin or other standard pills for diabetes (e.g., sulfonylureas), which may cause hypoglycemia and weight gain,” he says. These drugs facilitate weight loss and lower blood sugar by several mechanisms, including increasing insulin from the pancreas only if sugar is high, decreasing appetite, and delaying stomach emptying.

**MORE EFFECTIVE INSULIN**

Insulin therapies, another type of diabetes treatment, are undergoing an era of rapid change. New forms of insulin are two to five times more concentrated, says Carlson. “This allows for higher doses to be used in patients who require them or those who want fewer injections.” New combinations of injectable forms of insulin with another non-insulin hormone are also available. “These drugs have the potential to reduce the number of injections patients need every day,” he says.

Newer insulins under development act faster to lower blood glucose and may be taken after meals. “The new options aim to more closely mimic the body’s natural insulin response, which helps to prevent complications of wide swings in blood glucose levels,” says Carlson.

Busch says some concentrated insulins have a smoother, “peakless” mechanism of action. “Because of this, they are less likely to cause hypoglycemia than traditional basal insulins,” he says. Hypoglycemia is one of the biggest obstacles in treating patients with diabetes because of the risk of fainting and the impact on the heart.

A higher concentrated form of insulin, glargine (Toujeo), was FDA approved in March 2017 and is more effective than standard basal insulin Lantus, says Busch. Another higher concentrated form of insulin from Novo Nordisk, degludec (Tresiba), was redesigned to last longer, keep glucose levels more stable, and prevent hypoglycemia.

**MORE EFFECTIVE MONITORS**

Glucose monitoring devices continue to evolve. Abbott’s FreeStyle Libre, now available in the United States, has a factory-calibrated glucose sensor that can be worn up to 10 days and provides patients with nearly real-time blood glucose levels. A small filament placed under the skin measures glucose levels in skin tissue. Users then use a handheld reader to scan the sensor and learn their glucose level.

Because the device is factory-calibrated, no routine fingerstick blood glucose tests are required. “This is a major advantage to many patients who do not like to stick their fingers, and has been a goal among the diabetes community for decades,” Carlson says.

*Continued on page 21*
Four plans lower diabetes costs

By Karen Appold

Health insurers are finding ways to control costs and improve the quality of diabetes care. Here’s a snapshot of promising programs.

Cigna focuses on engagement
Since 15% to 30% of people with prediabetes will develop type 2 diabetes within five years without lifestyle changes, Cigna focuses on early engagement, starting with an online gamified health risk assessment to determine an individual’s diet and exercise practices, says Scott Josephs, MD, national medical officer. The risk assessment includes screening for body mass index, blood pressure, cholesterol, and blood sugar, as well as a claims analysis to detect prediabetes. Based on that analysis, Cigna engages at-risk customers through online, onsite, and telephone coaching to improve diet and exercise.

The insurer offers a digital diabetes prevention program from Omada Health that features an evidence-based approach to empower individuals to make sustainable behavioral changes supported by social connectivity and personal accountability. The program provides personal health coaching, onsite wellness education classes, and incentives for completing health assessments and preventive exams. In addition, Cigna’s wellness programs are often augmented with incentives to employees who improve their health, such as premium discounts or funds to an employee’s health savings account.

Priority Health focuses on prevention
The health plan based in Grand Rapids, Michigan, is offering the nationally recognized Diabetes Prevention Program (DPP) as a preventive benefit for commercial and Medicare members. “By working closely with physicians and DPP providers, we are increasing referrals and access to DPP groups across Michigan for members at risk for developing type 2 diabetes,” says James D. Forshee, MD, senior vice president and chief medical officer. “This is crucial for increasing awareness of prediabetes and decreasing the progression to diabetes.”

DPP is an evidence-based, structured lifestyle change program. “Having a program backed by institutional findings allows participants to learn how to make lifestyle changes that will reduce their risk for type 2 diabetes,” Forshee says. “These changes include losing a modest amount of weight, increasing activity, and decreasing stress in a supportive group environment.”

Priority Health is also proactively engaging members with unmanaged diabetes. Care managers work with members to address their needs, provide easier access to their benefits, and increase access to programs.

Since Priority Health began offering the DPP in 2013, 65% of participants have met their weight loss goals and 43% exceeded their goals. Seventy two percent also met the goal of exercising 150 minutes or more each week.

Community Health Choice focuses on support
The Houston-based plan believes it is at the forefront of slowing the prevalence of diabetes while improving care and lowering costs by being a founding member of Cities Changing Diabetes, a global partnership between health organizations, researchers, and civic leaders in response to the dramatic rise of urban diabetes. Houston is the only U.S. city in this global initiative, which includes Rome, Mexico City, Shanghai, and other major urban areas encompassing almost 70 million people. As part of the endeavor, Community Health Choice helps facilitate an in-person support group for people with diabetes and creates peer support booklets to encourage groups to discuss actions for healthier lifestyles. The program is currently being tested citywide through community organizations.

“We hope to see our members engage in more preventative behaviors, such as walking and losing weight, and having conversations about the cause and effect of diabetes, as a result of our initiative,” says Daisy Morales, vice president, Community Affairs, Community Health Choice. “When compared with other diseases, diabetes genuinely can be prevented by choices. We believe we are investing in our members’ health with this program, because it helps them to make choices that prevent diabetes.”

Health Care Service Corp. focuses on adherence
In 2016, Health Care Service Corp., an independent licensee of the Blue Cross and Blue Shield Association, launched Pharmacists Adding Value & Expertise (PAVE), to improve members’ medication adherence. The PAVE program works directly with select pharmacies to promote medication adherence for Medicare, Medicaid, and retail-exchange members with a focus on adherence to diabetes, hypertension, and cholesterol medications. Since the program began, adherence among PAVE program members in four states for diabetes-related medications has increased on average by 9%, says H. Scott Sarrahn, MD, divisional senior vice president and chief medical officer, government programs.

Health Care Service Corp.’s support for Blue Cross and Blue Shield members with diabetes begins with their initial diagnosis. Members receive a “first fill” diabetes mailer designed to educate them on care and provide them with clinically appropriate information. The PAVE program also partnered in 2017 with Albertsons stores to offer free in-person diabetes management classes for Medicare Advantage and Medicaid members in four states. The classes include a grocery store tour focused on healthy food choices led by a registered dietitian and a question and answer session with an in-store pharmacist to teach participants more about diabetes and treatments.
Monitoring devices will continue to get smaller, more accurate, and more integrated into smart devices. Medtronic and Dexcom also offer advanced glucose monitoring devices. These devices do require occasional fingersticks for calibration, however, they have the advantage of notifying patients if their glucose levels are dropping rapidly or if they decline while sleeping. A glucose sensor can also alert patients if their glucose is rising too rapidly, says Kulstad.

**RELEASE OF THE ARTIFICIAL PANCREAS**

Medtronic released its MiniMed 670G automated insulin delivery pump in 2017, a major step toward a fully automated insulin delivery system, also known as the artificial pancreas, for type 1 diabetes patients. “This is the first commercially available device to use continuous glucose monitoring information to adjust insulin doses,” Carlson says. “Using an algorithm inside the insulin pump, the system adjusts insulin doses up or down accordingly to target a healthy glucose level.”

Data show the device improves diabetes control and results in more time spent in an ideal blood glucose range. “This is important because both high and low glucoses are associated with significant complications and costs,” Carlson says.

He says the next advancement to watch for is a fully “closed loop” device that is smart enough to give a quick burst of insulin when patients eat without patients having to tell the device they are going to eat. Currently, patients must first enter their blood glucose and amount of estimated carbohydrates in the meal. Then, based on programmed settings, the pump delivers an appropriate burst of insulin.

**PROMising CELL-BASED THERAPIES**

Researchers are also starting to test stem cells that act as pancreas cells and aid in insulin production. “They are put into ‘capsules,’ placed in the body, and start to secrete insulin,” says Susan Renda, DNP, assistant professor at Johns Hopkins School of Nursing in Baltimore. “Although much more studying needs to be done, it could be a promising treatment for type 1 diabetes.”

Karen Appold is a medical writer in Lehigh Valley, Pennsylvania.

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**Promoting cheaper medication alternatives**

Adam C. Powell, PhD, president of Payer+Provider Syndicate, a healthcare consulting company, says MCOs should consider funding clinical pharmacy services for diabetes management. These pharmacists can work with patients to develop medication regimens and better identify interactions between their diseases and medications.

**AMA calls on payer partners to curb type 2 diabetes**

The AMA is developing models to help galvanize more physicians to screen their at-risk patients for prediabetes and refer those at high risk to the National Diabetes Prevention Program (DPP), which has been shown to cut in half the risk of progressing to type 2 diabetes. It is also forging partnerships to expand enrollment and coverage of the DPP. Last year, Anthem Blue Cross Blue Shield implemented coverage of the DPP in two states and is expanding coverage nationwide—a move that is prompting other health plans to expand pilots through their physician networks. Read more about the DPP from the AMA president: bit.ly/AMA-pres-perspective.
RA, Cancer, Hep C Spending

What to expect in the next five years

Inflammation conditions took the lead in drug spending in 2017—a 15.3% increase over 2016—with $157.49 per person per year. Spending is expected to climb another 16% in 2018, 15% in 2019, and 14% in 2020, according to the “Express Scripts 2017 Drug Trend Report.”

Oncology ranked third after diabetes in spending with a 17.4% increase over 2016—$70.66 per person per year—with projected increases of 17%, 13%, and 11.3% for 2018, 2019 and 2020, respectively, the report says.

Hepatitis C indicates a decline in spend from 2017 to 2020, ranking 14th in Express Scripts’ top therapy classes with a decrease of 31.2% in 2017 compared to 2016, and additional projected decreases of 11.1%, 0.1% and 1.6%, from 2018 to 2020, respectively.

While inflammatory conditions and oncology remained first and third on the spend list for 2015 and 2016, hepatitis C fell from fourth in 2015 to 11th in 2016.

RA outlook

Ken Majkowski, PharmD, chief pharmacy officer, Community Service Partnership for FamilyWize, an online prescription savings company, believes RA drug costs might decrease with the introduction of biosimilars for Humira (adalimumab) and Remicade (infliximab).

Humira’s dominance in the RA marketplace is to blame for high costs, says Christine Strahl, PharmD, senior manager of specialty pharmacy programs for HealthPartners, a health plan. “Discounts have not kept pace with Humira’s rising cost even though there is competition. With the largest list of indications, it remains in the driver’s seat.”

Glen Stettin, MD, senior vice president and chief innovation officer for Express Scripts, agrees with his PBM’s trend report: Utilization of RA drugs will increase. However, he is more optimistic about the opportunity to leverage existing competition by indication through formulary preferences, keeping RA drug prices in tow.

Cancer developments

Jessica Turgon, principal at ECG, a management consulting firm, predicts that prices for cancer drugs will rise in the next five years as the FDA approves more drugs for oncology conditions. “Manufacturers are trying to recoup their investment in developing high-cost drugs, but they are feeling pressure from the industry to keep increases at 10% or lower,” she says. “There are no price controls.”

Strahl says there are only about two to three drugs per cancer indication so there’s not much activity by manufacturers to discount them. “It’s up to PBMs and insurers to pressure them; manufacturers

Eight ways to address the high-cost drug paradigm

In addition to the common tools used to manage drug costs, pharmacy experts emphasize these approaches:

- Introduce a narrow network or limited distribution for drugs.
- Use personalized medicine to ensure drugs are appropriate for specific individuals.
- Deploy real-time, robust data and analytics to determine cure and endpoint measures.
- Utilize pharmacy case management to determine which medications optimize clinical benefits and cost-effectiveness.
- Manage site of care by indication.
- Deploy a split-fill option, especially for some oncology conditions to mitigate waste. In case members cannot tolerate a certain medication, they only receive seven to 14 days of medication with a half copayment until there is assurance they will remain on therapy.
- Use specialty pharmacy support to increase adherence and decrease side effects.
- Partner with physicians to align goals in appropriate care and monitor side effects for which they share in savings.
- Manage site of care by indication.
Pharmacy Best Practices

are primarily in the driver’s seat,” she says.

Stettin expects a robust oncology pipeline but going forward, he also predicts less competition due to specification. On the other hand, he anticipates that generic versions of Gleevec could impact drug pricing.

Mona Chitre, PharmD, chief pharmacy officer and vice president, clinical operations and health innovation, Excellus BlueCross BlueShield, attributes the rising cost of oncology drugs to new combinations such as Opdivo (nivolumab), which has been used as a single agent to treat metastatic melanoma and is now prescribed in combination with Yervoy (ipilimumab). The price has jumped from a $150,000 single agent to $250,000 for both.

David Lassen, PharmD, chief clinical officer, Prime Therapeutics, a PBM, attributes the higher cost of oncology drugs to their marked improvement in efficacy, advancement toward a cure, lack of competition, and new drugs targeting additional indications.

**Hep C highlights**

Stettin says hep C drug utilization has tanked and will be flat by 2019 to 2020 even though drugs for the condition are expensive. “Hepatitis C is extremely well managed, and we have identified those who need the drugs and ensured adherence,” he says.

Strahl, of HealthPartners, also expects utilization to decrease but right now she says there is a slight increase with new drugs that fight resistance experienced by some patients on other drugs. Among them is Mavyret (glecaprevir/pi-brentasvir).

HealthPartners has created a Pharmacy Navigator program for hep C that supports members on high-cost drugs through personalized outreach to increase adherence and contain costs.

**Q:** What is the biggest opportunity to reduce specialty pharmaceutical costs?

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<th>Percentage</th>
<th>Opportunity</th>
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<tr>
<td>39%</td>
<td>Performance-based (outcomes-based) pricing</td>
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<tr>
<td>23%</td>
<td>More aggressive and expansive utilization management strategies</td>
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<tr>
<td>11%</td>
<td>Exclusive specialty pharmacy contracting</td>
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<td>10%</td>
<td>Increased government regulation</td>
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<td>5%</td>
<td>Formulary exclusions</td>
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<td>12%</td>
<td>Other*</td>
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*Other responses included: Increase formulary addition of biosimilars and more competition on the product and supply chain side

Source: The more than 100 responses received to the Managed Care Pharmacy Survey 2018. Full survey findings will be released in June 2018.

**Are value contracts the solution?**

Although HealthPartners supports value-based contracting and is in discussion with manufacturers, the insurer does not yet have any such contracts in place. Strahl says that if they do participate in value-based arrangements, contracts must represent a true risk-sharing partnership. “The models we have seen from manufacturers thus far place a high administration burden compared to current contracts,” she says.

Majkowski says it is difficult to define “success” in determining value-based contracts, making it necessary for contracts to establish measurable endpoints upon which assessments can be based.

Express Scripts deploys value-based programs to manage drug costs for RA and oncology. Its Oncology Care Value Program aligns the cost of a medication with its outcomes for various types of cancer, providing payers with drug discounts and early discontinuation reimbursements. Formulary pricing is based on indications.

The Inflammatory Conditions Care Value Program combines indication-specific formulary management, care management, value-based contracting, intervention outreach, therapy effectiveness assessments, and patient education. Express Scripts refunds a participating plan sponsor up to $6,000 if a patient discontinues any preferred, anti-inflammatory medication within the first 90 days.

**Specialty drug growth**

Dan Hardin, senior vice president and general manager, pharmacy benefit solutions for Nashville-based Change Healthcare, which provides revenue and payment cycle management, says specialty drug costs will continue to grow. The pipeline has more than 900 specialty drugs in development and no “me-too” drugs.
Diabetes remains the top overall traditional drug spend category for commercial, Medicare D, and Medicaid clients, according to the “2017 Drug Trend Report” from Prime Therapeutics.

“Drugs used to treat diabetes contribute a large portion of overall drug costs for our health plan clients,” says Patrick Gleason, PharmD, senior director of Health Outcomes at Prime.

“Outcomes-based contracts, known at Prime as CareCentered Contracts, are one of the ways we are working to manage costs by aligning drug cost to clinical value for many disease states, including diabetes.”

A March 2017 Prime study determined that the mean total cost of care for members with diabetes was $15,771—2.5 times higher than the cost of care for members without diabetes. The excess cost of someone with diabetes includes more than three times higher drug costs, and stems from treating comorbid conditions such as hypertension, hyperlipidemia, and cardiovascular disease, says Gleason.

Farrah Wong, PharmD, senior director, Pipeline and Drug Surveillance at OptumRx, says disease management is key to preventing complications, and that clinical care programs provide enhanced engagement, which leads to faster identification of gaps in care, improved adherence, increased satisfaction, and more “empowered” members. Clinical management strategies such as step therapy and supply limits will also help manage diabetes drug spend,” she says.

Recent approvals

The FDA approved these diabetes therapies in December 2017:

**Merck’s Steglatro** (ertugliflozin) for glycemic control in adults with type 2 diabetes. Steglatro is the fourth approved sodium glucose cotransporter (SGLT2) inhibitor and is available as monotherapy as well as in combination with sitagliptin or metformin.

**Sanofi’s Admelog** (insulin lispro injection), a follow-on product to Eli Lilly’s Humalog, for adults and pediatric patients aged three years and older with type 1 or type 2 diabetes.

**Novo Nordisk’s Ozempic** (semaglutide), for improved glycemic control in adults with type 2 diabetes. Ozempic is a once-weekly subcutaneously injected glucagon-like peptide 1 (GLP-1) agonist.

Promising pipeline

Currently, all marketed GLP-1 agonists are administered subcutaneously; however, an oral formulation of semaglutide is being studied by Novo Nordisk at press time.

“If approved, oral semaglutide will provide prescribers and patients an alternative to subcutaneous GLP-1 agonists in treating type 2 diabetes,” says Wong.

Lexicon Pharmaceuticals and Sanofi submitted a New Drug Application to the FDA for sotagliflozin, an orally-delivered investigational dual SGLT1 and SGLT2 inhibitor, intended for use in combination with insulin therapy to improve glycemic control in adults with type 1 diabetes. If approved, it may be the first oral therapy option for these patients.

“Typically, type 1 diabetes is more difficult to manage than type 2 diabetes and has limited options; the cornerstone of type 1 diabetes therapy is insulin,” says Wong. “If approved, sotagliflozin will provide another treatment option for patients with type 1 diabetes whose glucose levels are not controlled with insulin.”

Much of diabetes drug innovation is in formulation of the drug rather than novel drug class, Wong says. “As these drugs come to market with easier to administer dosages, it will provide alternative treatment options for diabetic patients.”

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**Erin Bastick, PharmD, RPh** is staff pharmacist at Southwest General Health Center, Middleburg Heights, Ohio.
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managed healthcare executive
One of the best ways to engage physicians and other clinicians in health system initiatives is to ask for their help and insight, says Zoe Tenney, a family nurse practitioner and clinical quality supervisor at Blue Hill Memorial Hospital, which is part of Brewer, ME-based Beacon Health, the accountable care organization (ACO) arm of Eastern Maine Healthcare Systems.

Equally important is the language used when interacting with physicians. “Don’t talk in terms of insured lives or other executive-level terms,” Tenney says. Instead, point out a real clinical problem that needs to be solved—and ask for their ideas on how to solve it.

That approach is what Tenney says led to more effective STD screenings at Beacon Health, more specifically, chlamydia screenings for women between the ages of 16 and 24. Chlamydia is a growing problem in Maine. Cases in the state increased 76% between 2010 and 2017, according to the Maine Centers for Disease Control and Prevention.

To help address this problem, Blue Hill revamped the wellness visit protocol for young women in this age range, which starts with a letter that is sent to the patient’s home—most likely, this letter is read by the patient’s parents. Included in that letter, which orients the patient regarding what the annual visit will cover, is a statement that all women between the ages of 16 and 24 will take part in an STD test during the visit.

Normalizing the STD test is important, says Tenney, because then the young woman and her parents won’t be alarmed when it shows up on the explanation of benefits from their insurer. Screening as many young women as possible is helpful as well, because many won’t be honest about their sexual activity, she adds. When the patient arrives for her annual wellness visit, a medical assistant takes a urine sample as a standard protocol.

Blue Hill has a goal to screen at least 35% of patients in this age range annually. One of the challenges Tenney and her team face is convincing college students to come in for screenings; it’s also difficult because many of these patients are self-pay and decline because of the cost associated with the test. (She adds that some patients are tested anonymously outside the clinic, which means those numbers aren’t available.)

A health system spokesperson says that Blue Hill has a monthly meeting that involves all staff—including clinicians—where quality improvement plans, such as this revamp of the annual wellness visit, are developed. At these clinician-led meetings,
performance improvement plans are finalized. "Without the [clinician] commitment to quality improvement and engagement, the goal couldn’t be met," the spokesperson says.

Blue Hill now screens 28% of young women for chlamydia, compared to just 17% in January 2016, says Tenney.

MAKE IT EASY FOR PHYSICIANS
Beacon Health has also collaborated with physicians to improve care for patients with chronic obstructive pulmonary disease (COPD), says Will Seavey, PharmD, BCPS, director of pharmacy and care delivery. Called a COPD exacerbation kit, an order set within the EHR provides nurses with standard guidelines for assessing patients’ COPD. Depending on the result, patients may receive antibiotics and/or steroids for treatment. Patients’ physicians must approve in advance that a nurse can do the assessment, which is noted in the EHR.

Before this protocol was implemented, physicians performed all assessments, which ate up their time and made it difficult to get patients in for same-day appointments, says Seavey. And, even when the practice could accommodate same-day appointments, squeezing in patients through the day completely threw off physicians’ schedules.

The biggest impact of the new protocol? More same-day appointments are available, which means fewer expensive emergency room visits, says Seavey. (While he was unable to provide specific metrics, a health system spokesperson says that the hospitals and primary care clinics that use the COPD exacerbation kit most often have lower admission rates for COPD.

Seavey says that for the COPD assessment to be successful, physicians need to develop trusting relationships with nurses. But getting physicians onboard with the new protocol "wasn’t a big stretch," particularly because physicians knew it would save time. "Clinical providers want to do the right thing. They want to do the best by their patients. It’s not hard to get the message through," says Seavey.

ASK FOR THEIR PROBLEM LIST
Another facility that’s demonstrated success with provider engagement is Stanford Children’s Hospital. It asks physicians to prioritize the problems they want solved within their specialties, says Andrew Ray, director of professional revenue cycle.

For example, the urology department wanted to get patients with testicular torsion, where blood supply is cut off from the organ, into surgery faster to reduce the likelihood of permanent damage.

To identify how to best treat this condition in a more timely manner, members of the urology team did a literature review and visited facilities that were successfully triaging their patients with this condition. What they learned has resulted in significant improvements in coordinated care between the hospital, operating rooms, urologists, and nursing staff, says Ray.

Ray says the two main changes are quicker and better identification of testicular torsion—which required training of the triage clinical staff—and then providing a more clear protocol for how to take action. This includes communication to the urologic surgeon on duty, mobilization of the operating room team, preparation of the operating room, scheduling adjustments with the operating room, and patient transport to the operating room.

He adds that operating room availability is "always a challenge," so getting clinical and operating room scheduling staff in agreement on these cases is key. "In the typical triage sense, the most urgent/emergent needs are handled before planned or routine needs, so a lot of that was facilitated by education and gaining consensus with [clinical] and operational staff on the need for urgent treatment for this condition. That allows for

“How technology helps engage docs
Documenting that high-value care is being delivered is key when attempting to secure value-based reimbursement. That’s why Stanford Children’s Hospital tweaked its EHR to make it easier for physicians to document care.

For example, a field within the EHR prompts providers to conduct and document reproductive health screenings for patients 15 years and older. Previously, many clinicians were documenting these assessments in free text within the EHR and, thus, it was not easily reportable.

Questions included in this assessment include asking the patient about sexual activity and if young women are experiencing regular menstruation. Ray adds that providers also use this opportunity to educate patients about ways to limit their chances of getting pregnant and contracting an STD, in addition to equipping patients with condoms.
**Special Report**

“Clinical providers want to do the right thing. They want to do the best by their patients. It’s not hard to get the message through.”

WILL SEAVEY, BEACON HEALTH

**Effective triaging of patient operating room needs and current cases,** says Ray.

**GIVE THEM A REASON**

David Hanekom, MD, CEO at Arizona Care Network, a 5,000-physician ACO that treats patients in Maricopa and Pinal counties, notes that 90% of its physicians are independent, which means they don’t work for the network. This can be particularly challenging, because the ACO has to provide these independent physicians with a reason to want to be involved in ACO-related initiatives, he says.

To encourage care coordination, the health system provides monetary incentives if physicians meet standards related to:

- Depression screening
- Statin therapy for the prevention and treatment of cardiovascular disease
- Control of diabetic patients’ A1c levels
- Coordinating in-network care

Since the health system needs to communicate with a broad audience of providers, it also focuses on ongoing communication, from e-mails to in-person meetings to site visits, to address issues at the practice level.

Other features of Arizona Care Network’s success include publishing quality data for individual providers to show where they rank compared to their peers; and care management, which includes nurses and behavioral health specialists who assess social determinants of care, ensure patients understand care plans, and remove adherence barriers, says Hanekom.

Arizona Care Network has reduced rates of hospitalization, emergency room use, and heart attacks among Medicare patients with screening, hypertension control, smoking cessation, and other care coordination activities. From 2016 through 2017, UnitedHealthcare members attributed to the ACO’s providers had a 10.4% reduction in inpatient admissions for heart-related events and a 13% reduction in the need for cardiac bypass and angioplasty.

Aine Cryts is a writer based in Boston.

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**Three other ways to get physician buy-in**

1. **Educate providers on thinking behind quality measures.**
   Clinicians want to help patients and see improvements in health, but often they don’t understand what’s behind the measures they are asked to meet, says Jatin Dave, MD, MPH, chief medical officer at the New England Quality Care Alliance, a network of almost 1,800 community and academic physicians in Massachusetts.
   “Once we help them understand why we are doing what we are doing, they are really smart about finding ways to improve performance,” he says.
   “Our organization is made up of really small independent practices with very limited back-end infrastructure, but we performed remarkably well on quality because once we explained to them what really matters, they were able to make the necessary changes.”

2. **Ease burdens and provide support.**
   Dave says healthcare leaders should recognize the burden of the quality improvement system on clinicians. “We have been getting regular and consistent feedback that we have gone overboard in measuring quality,” he says.
   He cites several reports detailing the burden of quality reporting on physicians, stating that the average physician spends about 100 working days each year on reporting quality measures. This is a huge contributor to physician burnout and dissatisfaction, he says. The sense is that the industry is more focused on measures and control than on innovation and improvement.
   “We have to recognize that this is where we are right now and try to balance that,” he says. “If we don’t make clinicians feel like we are listening to their feedback and working to reduce the measurement burden, we will lose our credibility as healthcare leaders.”

3. **Engage in dialogue.**
   “At the end of the day, engagement doesn’t mean they have to agree with everything we are saying. Agreeing to engage in healthy debate and dialogue can also help drive improvements,” Dave says.
   “As long as they are giving feedback in a constructive and professional manner, we should listen intently and try to make changes.”
Books You Should Read This Year

by AUBREY WESTGATE

“Dreamland: The True Tale of America’s Opiate Epidemic” by Sam Quinones
“This work provides one of the most comprehensive and engaging overviews of how communities across the country have fallen victim to the intersection between prescription opioid over-promotion and over-prescribing and illicit heroin trafficking.” —David Calabrese
“It’s a great overview of the causes of the supply and demand for opioids.” —Margaret Murray

“Payoff: The Hidden Logic That Shapes Our Motivations” by Dan Ariely
“This book reveals the complexities and unique determinants of motivation, confirming that one-size-fits-no-one when it comes to the special elixir of intrinsic and extrinsic forces that move each of us to act. In healthcare management and practice, there are still too many one-size-fits-all workforce incentives, technology solutions, guidelines, and even care plans.” —Dennis Schmuland

“The Drug Hunters: The Improbable Quest to Discover New Medicines” by Donald R. Kirsch, PhD and Ogi Ogas, PhD
“The authors provide amazing insight into the difficulties in creating new drugs and offer one of the best histories of the pharmacological industry I’ve read.” —Don Hall

“Hidden Keys to Success” by Benjamin Hardy
“It hasn’t been released yet, but I’m anxious to read it. It’s getting great reviews by the insiders who have read it already. It talks about how you have to proactively shape your environment to really be successful. Willpower alone won’t do it.” —Cynthia Hundorfean

“An American Sickness: How Healthcare Became Big Business and How You Can Take It Back” by Elisabeth Rosenthal
“Healhcare execs should read this book because their members are. It’s a vivid and not particularly positive picture of the mess we call our healthcare system. I like the author’s perspective on ways we can improve the industry.” —Don Hall

“Young, Gifted and Black: A Biography of Kamala Harris” by J. Anthony Lukashenko
“Told as [her] father would have told it.” —Martha T. Sonksen

“Being Mortal” by Atul Gawande, MD
“As someone who is very concerned with all of the aspects of end of life care, I found this book very compelling.” —David Schmidt

IN CASE YOU MISSED IT To learn more about these board members, see PAGE 9
Six Ways to Support Diabetic Patients

Strategies to consider by AINE CRYTS

Patients with diabetes work very hard to manage their disease, says Elizabeth Seaquist, MD, professor of medicine at the University of Minnesota and endocrinologist with the University of Minnesota Health in Minneapolis. That’s why she refrains from using the word “compliance” when discussing patients’ adherence to treatment plans. Seaquist describes diabetes management as “all consuming,” and she says continuous blood glucose monitoring devices (CGMs) can be a huge benefit to patients, despite their increased cost relative to glucose testing strips, because they are the easiest way for patients to determine their blood sugar levels.

Her preference for CGMs underscores a critical element of diabetic patient support: Identifying ways to make self-management easier. Here are six other ways providers can help patients manage this daunting disease.

1. Advise patients to eat like the athletes they admire

The biggest way to maintain control of diabetes is to eat properly, says David Klonoff, MD, clinical professor of medicine at the University of California San Francisco and editor-in-chief of the Journal of Diabetes Science and Technology.

Klonoff encourages patients to eat like athletes, such as Patriots’ quarterback Tom Brady. Brady’s diet includes copious amounts of water, in addition to smoothies, fish, vegetables, turkey and chicken burgers, and salads.

“We should probably all be eating this diet,” says Klonoff, who encourages patients to drink only zero-calorie liquids such as water, coffee, and tea. Even a little diet soda is acceptable, he says.

2. Tailor medications to patients’ needs

Seaquist laments that some payers base their diabetes medication coverage decisions on cost and side effects, rather than what works best for patients.

Some of the newer diabetes medications, which are more expensive than older treatments, only need to be taken daily or weekly, she says. Thus, these treatments are more likely to be embraced by patients, particularly when adhering to treatment plans has been difficult in the past.

Providing patients with access to daily or weekly medications may keep them out of the hospital and prevent complications, says Seaquist. “[Hospital admissions are] very costly. Well-controlled blood sugar is cost-effective and worth it.”

3. Assess patients’ distress level

Pavan Chava, DO, senior physician section head of endocrinology at New Orleans-based Ochsner Health System, says that while many patients with diabetes suffer from depression, others are suffering from “distress.” The source of that distress, which could be related to their interaction with their physician, or their financial or emotional concerns, is assessed by Ochsner’s diabetes educators who are dieticians, nurses, and social workers.

A patient’s distress is determined by a series of questions. Responses are ranked from 1—not a problem—to 5—a very serious problem. Some of the questions include:

Rates of very poor glycemic control have not improved since 2005

In 2005, 29.7% of all U.S. patients with diabetes had very poor glycemic control (A1c higher than 9%).

In 2014, that percentage had climbed to 31.1%.*

*In a commercial HMO population that includes either type 1 or type 2 diabetes.

Do you feel overwhelmed by the demands of living with diabetes?
Do you feel that you’re often failing with your diabetes routine?
Do you feel angry, scared, and/or depressed when thinking about living with diabetes?
Do you feel that your doctor doesn’t know enough about diabetes and diabetes care?

Diabetes educators use the responses to connect patients with appropriate resources, says Chava. For example, educators connect patients unable to afford medications to financial counseling and give them referrals to nonprofits and pharmaceutical companies that can provide discounted medications. They also connect patients experiencing emotional difficulties to psychiatrists or psychologists.

When a patient’s distress is related to their physician, the physician receives that feedback. Often, having awareness, helps, says Chava, who suggests providing physicians with motivational interviewing techniques.

Educate patients on appropriate exercise

Many patients with diabetes don’t know the appropriate workouts, says Klonoff. For example, overweight patients with diabetes should refrain from running outside or on the treadmill, which is bad for their knees and hips. Better alternatives include elliptical machines, biking, and swimming, he says.

Just as important is educating patients about how to best manage their disease while they’re working out, says Seaquist. That’s because patients always need to know the status of their blood sugars, which is another reason she recommends continuous glucose monitoring devices. When a patient is working out on an elliptical machine, it’s very difficult to take out a testing strip and test blood, she says.

Garner family support

Eating food can be a communal or even a spiritual experience, says Seaquist. Take, for example, celebrating Ramadan, which requires Muslim observers to fast and then feast. Patients need to be able to cope with these scenarios—and family support can help, she says.

Family members also need to communicate about ways to manage the disease as a family unit. As with managing any chronic disease, this requires the patient with diabetes to discuss with their family members the best way to communicate about their condition, says Seaquist. “Some people are thrilled to have someone else take care of them all the time. Other people are more independent and only want their spouse to interfere if there’s a dangerous situation.”

Stave off loneliness

Zubin Eapen, MD, system chief medical officer at Cerritos, CA-based CareMore, a health plan and provider that is an Anthem subsidiary, says that many of the organization’s senior patients live alone and experience loneliness, which can make fighting diabetes more difficult.

In response, CareMore developed the Togetherness Program, which matches employee volunteers in clinical or administrative roles to patients experiencing loneliness.

These relationships are sustained by regular phone calls, as determined by patients’ needs. Some patients receive phone calls as often as once a week, says Eapen. The program, which serves all patients—not just those with diabetes—provides a social outlet. CareMore also learns more about patients’ needs because of these ongoing interactions.

Aine Cryts is a writer based in Boston.

Costs rise

Total projected U.S. medical costs (in billions) for type 2 diabetes and related complications

More than $1,000 cost burden for every person in the U.S.

Source: William H. Polonsky, PhD, CDE and Steven V. Edelman, MD
**Fertility coverage becoming the norm**
The percentage of employers offering fertility benefits is expected to grow from 55% in 2017 to 66% by 2019. Of the employers offering fertility benefits, 65% offer fertility services to same-sex couples—that’s expected to increase to 81% by 2019.

Source: Willis Towers Watson

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**Needless antipsychotics rampant in nursing homes**
In an average week, more than 179,000 older people, many with dementia, are given antipsychotic medications without a diagnosis for which the drugs have been approved and often without their or legal proxies’ informed consent.

Source: Human Rights Watch

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**Patient out-of-pocket costs**
In 2017, on average, 49% of patient out-of-pocket costs per healthcare visit were below $500; 39% were $501 to $1,000; and 12% were more than $1,000.

Source: TransUnion Healthcare analysis

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**Most common reasons for ED visits**
- Chest pain
- Shortness of breath/difficulty breathing
- Abdominal pain
- Headache
- Vomiting
- Fractures/sprains
- Syncope or fainting
- Motor vehicle accidents
- Fever
- Cough
- Infections such as cold or flu

Source: Emergency department physicians at Wake Forest Baptist Health, Winston-Salem, NC

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**Five findings about ED use**
1. ER visits were the most frequent type of outpatient service between 2012 and 2016.
2. Higher ER costs and a slight increase in use drove 40% of the increase in outpatient spending between 2012 and 2016.
3. Patients older than 45 visited the ER more in 2016 than in 2012.
4. Boys (under 18) had 7.8% more ER visits in 2016 than in 2012, while girls had 4.1% more visits.

Source: Emergency department physicians at Wake Forest Baptist Health, Winston-Salem, NC

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**Voice-enabled healthcare answers**
The number of commonly asked healthcare questions that Cigna’s “Answers by Cigna” voice-control skill for Amazon Alexa will be able to answer. The hands-free skill is aimed at personalizing and simplifying health benefits information and is designed to demystify language about healthcare.

Source: Cigna