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THERAPEUTIC DIGEST

CARDIOLOGY

INNOVATION IN THE FACE OF CHALLENGES

IN COLLABORATION WITH thinkgen

AUGUST 2020

EDUCATION HAS AN IMPACT

The Power of Virtual Patient Simulation in CME

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Medscape EDUCATION

Simulation as we think of it today has been used in medical education since the 18th century,[1] and has continued to evolve into realistic and medically accurate physical and digital solutions designed to allow learners to simulate a scenario-based encounter with a patient in a safe environment.

Virtual Patient Simulations

Virtual patient simulation is an impactful way to help clinicians learn. Virtual patient simulations are goal-oriented, case-based, and rule-based, and are a great way to engage learners through active decision-making. The structured format of virtual patient simulation is designed to develop competencies that can be applied in real-world practice. Virtual patient simulation excels at supporting learning through engagement in complex analysis and decision-making with an ever-changing clinical encounter.

MedSims is an award-winning virtual patient simulation solution from Medscape, having won:

- ACEhp Award for Outstanding Outcomes in 2020
- ACEhp Award for Innovation in CPD for the CE/CPD Professional in 2018
- 2nd place for the Technology Innovation Award at the International Meeting on Simulation in Healthcare (IMSH) in 2017

By presenting patient encounters in an immersive multimedia instructional environment, MedSims' virtual patient simulation replicates real-world clinical practice to allow learners to recognize and diagnose a disease, establish and tailor an individual treatment plan using a robust medication database, and determine ongoing disease management. Immediate feedback is provided to each learner based on their in-platform actions and clinical decision-making.

The MedSims platform is a proven education solution. A recent study by the Calibre Institute for Quality Medical Education resulted in a superior instructional design score for MedSims virtual patient simulation, with a "high potential to engage physicians and lead to improvements in practice (ie, to achieve desired outcomes)".[2]

MedSims in Cardiac Care

Medscape Education recently launched a MedSims cardiology activity titled *Treating Complex Patients With Stable Arterial Disease*. In the activity, learners were presented with two patient case scenarios that tested their ability to:

- Communicate via virtual interview to identify important case information
- Order an accurate and effective patient assessment for risk of bleeding vs the risk of cardiovascular events in complex patients with coronary artery disease
- Tailor stroke prevention therapy in complex patients with atrial fibrillation
- Develop a patient-centered care plan to improve stroke prevention in patients with atrial fibrillation

Eight hundred sixty-four (864) learners participated in the simulation and subsequently showed strong improvement from pre-to-post assessment. Furthermore:

- Across both cases, cardiologists more than doubled their pre-guidance performance by accurately diagnosing the patient's condition once expert faculty authored guidance was presented
- Cardiologists demonstrated significant learner behavior change by appropriately tailoring stroke prevention medications in complex patients with stable arterial disease, producing relative change percentage increases in the triple digits from pre-to-post education
- Cardiologists also demonstrated significant learner behavior change in all five decision points related to developing a patient-centered care plan to improve stroke prevention in patients with atrial fibrillation

Medscape Education has been a leader in digital CME for more than 25 years, with a current membership of over 5 million physicians worldwide who deploy Medscape for the learning that they need. As a trusted learning partner for the medical community with proven ability to deliver education that makes an impact, Medscape is committed to delivering digital CME to learners where, when, and how they want to learn.

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Written by Kristina Erfe Pines

Cardiology

Innovation in the Face of Challenges

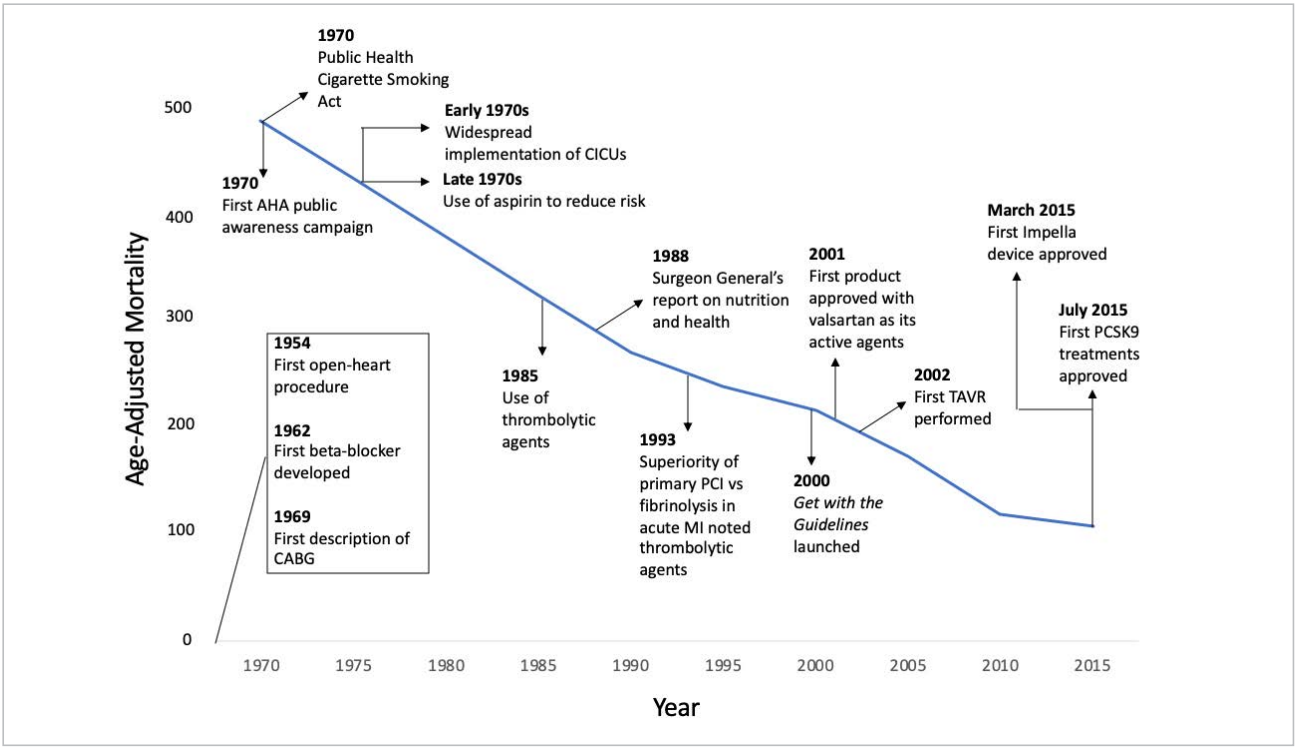
The past half-century has witnessed remarkable and unprecedented progress in addressing cardiovascular disease (CVD), marked by a large and continuing reduction in CVD-related mortality. Yet, even with this progress, CVD remains the leading cause of death and disability both in the United States and globally, affecting 85.6 million Americans and accounting for one in every six healthcare dollar spent[1]. Despite promising new models of care and further opportunities for biomedical innovation, recent trends are concerning. The decline in population mortality rates for CVD is slowing, with increases for some group (i.e. age-adjusted stroke mortality rose by 0.8% from 2016 to 2017)[2]. Cardiovascular drug innovation is lagging, large variations in outcomes exist, and CVD costs are continuing to rise. As our nation's population ages, there is an urgent need for action to improve innovation in treatment of and payment for cardiovascular health.

There is no question that medicine and society benefited mightily from the Golden Age of Cardiology from the 1970s onward, when age-adjusted death rates plummeted by as much as 70% in some western countries. Fueling the progress were evidence-based medications targeting low-density lipoprotein (LDL) cholesterol and high blood pressure in people at risk for heart disease, by advanced new surgical and catheter-based techniques for repairing damaged arteries, and by sweeping public health and education campaigns that touched off dramatic reductions in smoking and cholesterol levels. However, the increases in hypertension, diabetes mellitus, and obesity observable between 2000 and 2016, and the disproportionate increase in these cardiovascular risk factors in young people and women have become problematic[3].

CARDIOVASCULAR MORTALITY IS NO LONGER FALLING

From the first open heart procedure in 1954 to the public health interventions and clinical innovations, we have consistently seen new and more effective ways to improve cardiovascular health and to treat CVD. As a result, there has been a substantial and unprecedented reduction in the age-adjusted mortality rates from CVD over the past 50 years, as shown in Figure 1.

Ischemic Heart Disease Mortality Over Time (Figure 1)

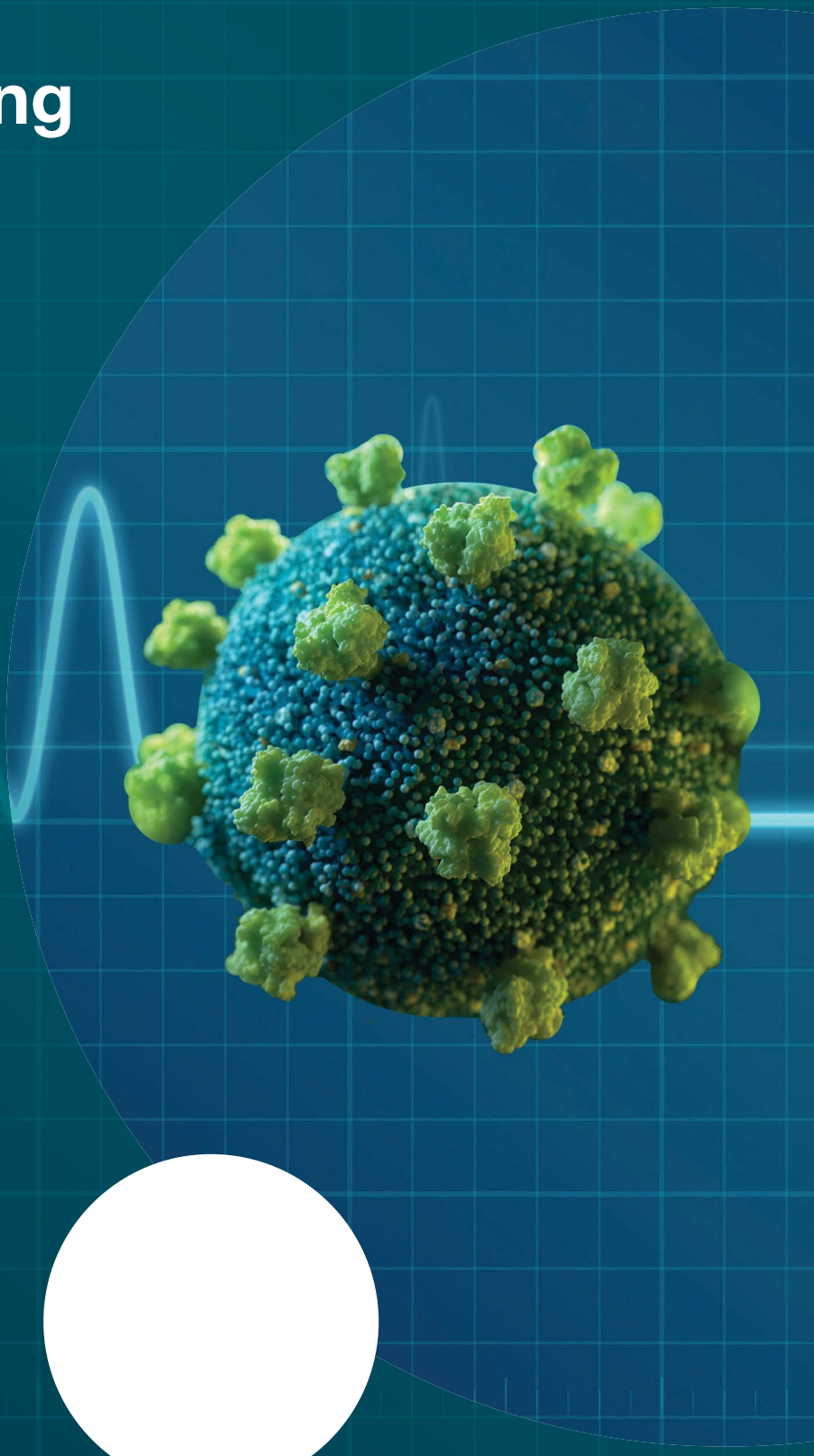


Sources: Mortality data and selected intervention dates are sourced from studies conducted by Navel and Braunwald[4]. Recent mortality data is drawn from the National Vital Statistics System[5].
Abbreviations: AHA: American Heart Association, CABG: coronary artery bypass grafting; CICU: cardiac intensive care unit; MI: myocardial infarction; PCI: percutaneous coronary intervention; PCSK9: proprotein convertase subtilisin/kexin type 9; and TAVR: transcatheter aortic valve replacement

Despite this progress, CVD remains the leading cause of death both globally and in the United States. It accounts for 17.3 million deaths globally per year and is expected to account for >23.6 million deaths per year by 2030[6]. Most strikingly, the large mortality declines appear to be dissipating:

- In recent years, age-adjusted CVD mortality has remained essentially flat whereas cancer mortality rates have continued to decrease ~1.5% annually from 2000 to 2015[7].
- CVD mortality declines have slowed for all races and ethnicities, with increases in some groups, such as large increases in mortality for rate, middle-aged, non-Hispanic white Americans[8].
- The decline in in-hospital mortality for heart failure is also leveling off. In-hospital heart failure mortality decreased from 6.5% in 1993 to 3.1% in 2010 but has not changed significantly since, with 2015 mortality at 2.8%[9].
- Declines in age-adjusted stroke mortality have similarly plateaued. Whereas stroke mortality decreased annually from 1999 to 2013. Rates have risen and fluctuated since 2017.

COVID-19: Keeping your clinical trial on track



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In addition to study teams working with customer teams to develop study-specific plans to minimize the risk to study timelines, ICON has a range of services and tools that can be adopted to mitigate disruption to trial timelines including:

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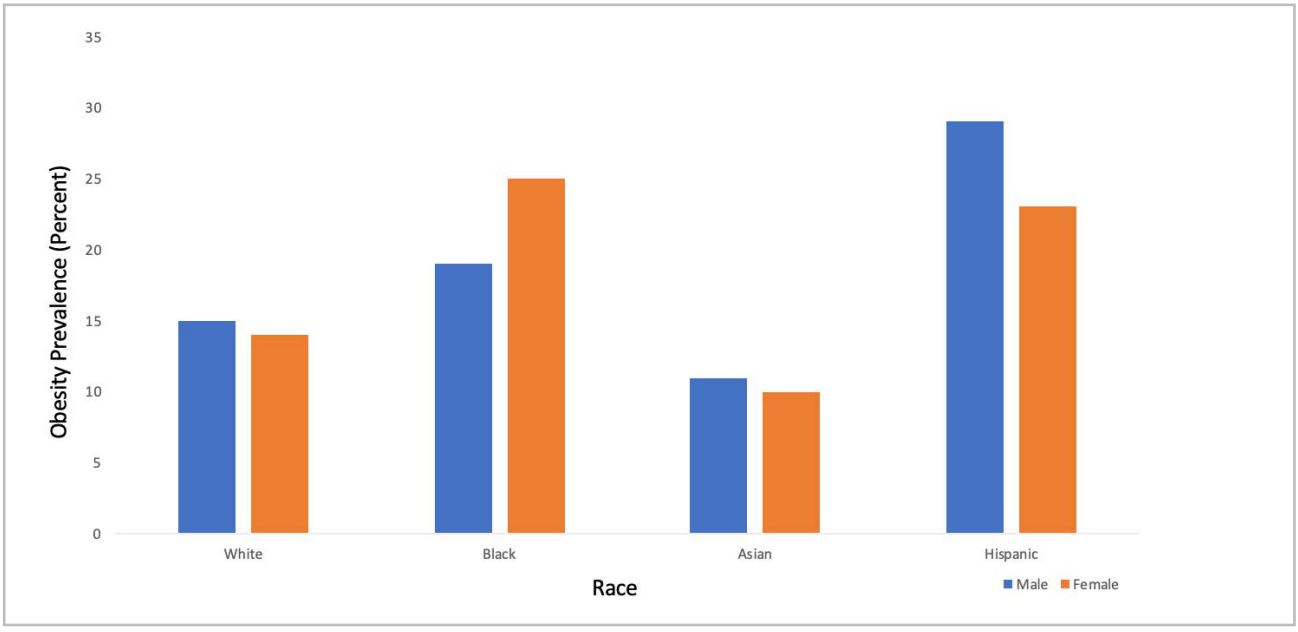
CARDIOVASCULAR HEALTH DISPARITIES PERSIST

Cardiovascular mortality trends differ substantially among different groups, and the evolving picture is complex and multidimensional. Outcomes and quality continue to vary by sex, race, and ethnicity[10].

In recent years, cardiovascular mortality is increasingly determined by geographic location, wealth, and education[11]. Disparities may be attributable to lower access to basic primary care and treatments to modify cardiovascular risk factors, challenges with social determinants (e.g. income and educational attainment), and modifiable risk factors (e.g. diet, physical activity, and smoking)[12]. For instance, evidence shows that access, use of treatments, and long-term adherence can vary on the basis of sex and race; examples include reduced use of statin therapies by sex[13,14], increased odds of statin nonadherence for women and nonwhites[15], and less access to the intravenous tissue-type plasminogen activator for acute ischemic stroke for black patients[16]. Moreover, risk factor trends such as childhood obesity show substantial differences by race[17].

Obesity Rates in Children in 2015 to 2016, by Race and Sex (Figure 2)



Source: Centers for Disease Control and Prevention

INNOVATION ACROSS THE SPECTRUM OF CARE

The era of cardiology in the 2020s will seek to maximize gains by addressing patient needs at both extremes of the health spectrum — from identifying and treating cardiovascular disease at individuals' cellular levels to nipping heart disease in the bud through bold preventive strategies and campaigns focused on changing risky behavior in entire populations. In other words, turning the tide on cardiovascular mortality by treating it as a lifetime, cumulative problem versus scrambling to put out the fires once they've spread.

Advanced medical devices and innovative drugs will be crucial to that effort. For example, transcatheter aortic valve replacements (TAVR) and other minimally invasive procedures like mitral valve repair, and tricuspid and pulmonary valve replacement will continue to transform the treatment landscape for structural heart disease. Mitral valve repair is projected by analysts to surpass the explosive growth of TAVR by 2023, fueled by Abbott's MitraClip, which new three-year data presented at TCT 2019 showed can increase life expectancy and quality of life compared with standard medical therapy[18]. The growth of mechanical circulatory support devices such as Abiomed's family of Impella heart pumps and LivaNova's Tandem Heart — used during high-risk revascularization to maintain adequate perfusion and prevent irreversible end-organ damage — also are expected to significantly improve mortality by serving as a bridge to recovery or to organ transplant.

Experts say drugs that build on the success of statins over the past 30 years will grow in importance in the decade ahead. Among the most promising, they say, are PCSK9 inhibitors, a biologic class of drugs that could further reshape the field of cholesterol lowering. Approved in 2015 by the FDA for familial hypercholesterolemia and atherosclerotic disease that needs additional LDL lowering, PCSK9 inhibitors are injectable, monoclonal antibodies that encode an enzyme that regulates LDL cholesterol levels. With the FOURIER and ODYSSEY OUTCOMES clinical trials having shown dramatic lowering of LDL and risk for heart attack and stroke, PCSK9 inhibitors (which are taken with statins) could be poised for major growth in the decade ahead[19,20].

The ability to pharmacologically affect PCSK9 has left scientists wondering if the next breakthrough could be editing or altering the mutation in the PCSK9 gene — first discovered in 2003 in three French families whose members had potentially lethal levels of LDL — thus conferring protection against heart disease for life. Given the advances in gene editing technologies like CRISPR that scenario could well play out in the coming decade. The FDA, for example, approved in May 2018 an intravenous therapy to treat spinal muscular atrophy that delivers through a viral vector a fully functioning copy of a gene to replace the mutated version. In cardiology, people with high levels

of lipoprotein(a) and cardiovascular disease also could be candidates for gene transfer therapy that targets LPA, the gene that encodes lipoprotein.

Another class of drugs with potential disruptive impact for treating hyperlipidemia in the coming years is small interfering RNA. The novel approach embodied by these drugs targets the root cause rather than just the symptoms of the disease by blocking the production of specific cellular proteins, such as amyloid. RNA interference drugs include inclisiran, which in the ORION-11 trial — presented at the 2019 European Society of Cardiology conference — demonstrated significant and sustained reductions in LDL cholesterol compared to placebo.

The CANTOS trial was a major step in demonstrating that powerful anti-inflammatory drugs that block key components of the inflammatory cascade involved in atherosclerotic heart disease can improve patient outcomes. Nevertheless, the results remain unconvincing to some in the field, reinforcing the need for additional studies to establish a clear linkage between inflammation and cardiovascular events[21].

Patients with worsening heart failure and reduced ejection fraction who received the investigational drug vericiguat had a significantly lower rate of cardiovascular death or heart failure hospitalization compared with those receiving a placebo, based on research presented at the American College of Cardiology's Annual Scientific Session Together with World Congress of Cardiology. Vericiguat is a novel drug — known as a guanylate cyclase stimulator — that is designed to enhance cyclic guanosine monophosphate production, which is a pathway that is critical for normal cardiac and vascular function but not currently targeted by existing heart failure drugs. While the drug has been tested in smaller groups of patients in phase II trials, the phase III VICTORIA (Vericiguat Global Study In Subjects With Heart Failure With Reduced Ejection Fraction) trial represents the first time vericiguat has been evaluated in a large group of patients with worsening heart failure receiving optimal standard of care treatments for their condition.

A new study published recently on The Lancet[22] estimate that if certain heart failure patients were prescribed a four-pill regimen — including three recently approved therapies — they could live up to six years longer. The new study focused on patients who had heart failure with reduced ejection fraction, which refers to how much blood the heart pushes out with each contraction. Reduced ejection fraction affects about half of heart failure patients. For a long time, the standard medication regimen for those patients was a beta blocker plus an ACE inhibitor or an angiotensin II receptor blocker (ARB). All three drugs lower blood pressure and ease the heart's workload through different mechanisms. But more recently, clinical trials have found that three other drug types can help patients live longer, beyond standard drugs alone. One is a medication called Entresto,

which combines the ARB valsartan with another drug, sacubitril. Another is a diabetes drug called dapagliflozin (Farxiga), which was recently shown to benefit heart failure patients with or without diabetes. The third drug class is actually an old one: mineralocorticoid receptor antagonists, which includes spironolactone and eplerenone. They help control blood pressure by blocking a hormone called aldosterone.

Determining which individuals could be helped most by inflammatory medicines is the role of biomarkers — a role that promises to grow exponentially in tandem with personalized medicine based on genetic signatures and biochemical parameters of individual patients. C-reactive protein (CRP) is an established inflammatory marker found in the blood that's regarded by some physicians as an even better predictor of cardiovascular disease than LDL. Another blood-based biomarker making headway as a screening tool, often in conjunction with CRP, is myeloperoxidase, an enzyme in leukocytes that has been linked in numerous studies to inflammation and cardiovascular disease. Recent clinical evidence also shows that two blood biomarkers — elevated brain natriuretic peptide and elevated fibroblast growth factor-23 — could potentially identify patients with atrial fibrillation, which often goes undiagnosed until a stroke has occurred.

USHERING IN A NEW ERA WITH MOBILE DEVICES & WEARABLES

Leading the way for potential transformative impact over the next decade is the convergence of digital health and analytics. This new schema will channel cardiovascular medicine in a preventive direction that's practiced largely outside the hospital and clinic, and is powered by the countless daily decisions patients make regarding their physical activity, diet, medication adherence and self-monitoring of key health signals like blood pressure, heart rate and rhythm, and weight. Making all of this possible is the new generation of mobile devices and wearable sensors that could turn healthcare into a proactive vs. reactive enterprise.

As mobile devices connected to smart phones become ever more sophisticated and dependable in monitoring and predicting atrial fibrillation, ischemia, heart failure and much more, it seems only a matter of time before hospital admissions and readmissions are reduced and, just as importantly, patients become highly engaged, well-informed self-managers of their health. The government, for its part, is expected to soon finalize rules that will enable patients to have their medical record information sent directly to third-party apps like Apple Health Records, a giant step that hopefully will help people better manage their illnesses and understand their treatment choices.

Much of modern medicine has already migrated outside the hospital, where the movement will intensify as devices that can detect fluid in the lungs of heart failure patients, for example, enter the

mainstream. In perhaps a hint of what's to come, researchers at Sensible Medical based in Israel have developed a vest that patients wear over their clothes that uses radar technology to scan inside the body and monitor fluid accumulation in the lungs. The information is then transmitted wirelessly to their physician. Also, on the near horizon are devices strapped to the arm or forehead that can collect entire metabolic panels noninvasively and micro-radar sensors that will detect heart and lung activity without the need for electrodes.

Preventing physicians from being inundated by the avalanche of patient data flowing from mobile devices and wearable sensors will be the twin buffers of artificial intelligence (AI) and machine learning. These algorithmic tools will enable cardiologists to identify with more precision patients at high risk for catastrophic cardiac events and potentially change their course by initiating preventive therapy. "It is likely that AI will become essential to the practice of clinical medicine," asserts a Journal of the American College of Cardiology report. "... AI will drive improved patient care because physicians will be able to interpret more data in greater depth than ever before."[23]

LATEST DEVELOPMENTS IN CARDIOLOGY 2019-2020

Increased Indications for Transcatheter Mitral Valve Repair

Currently, the only transcatheter mitral valve repair (TMVr) device that has been approved by the FDA is the MitraClip, which uses the edge-to-edge surgical method of valve repair. The MitraClip has also recently been approved for use on heart failure patients with functional mitral regurgitation, which could lead to market growth for this device. Many other companies are in the process of developing TMVr and transcatheter mitral valve replacement (TMVR) devices, but one TMVR device that stands out is Abbott's Tendyne, which is still in trials. Currently, no TMVR devices have been approved for use, as it is an extremely technically challenging process with significant risks of fatal repercussions. Additionally, once approved, TMVR will be limited to patients who are at high-risk for complications from traditional open-heart mitral valve replacement. The markets for both TMVR and TMVr devices have the potential to take off if this method of treatment becomes a reality for all patients.

MitraClip

One potential driving factor for the MitraClip market is the large patient population globally. In the United States alone, over 4 million people are estimated to have mitral valve disorders. Many of

these patients are also over the age of 65, and some physicians are reluctant to perform open heart surgery in this situation. This could also lead to growth in this market, as it presents an alternative to open heart surgery.

One factor limiting the MitraClip market is that it is a difficult procedure to perform. It takes approximately 100 procedures for a surgeon to become efficient and effective at providing treatment with the device. As more physicians become trained in this area, the market will also have more opportunity to grow[24].

However, as more transcatheter mitral valve repair and replacement devices are developed, the increased competition could stunt the growth of the MitraClip. There are currently more than 20 companies in the process of developing transcatheter mitral valve replacement technology, and, while many of these companies are in the pre-clinical stage of development, several have obtained CE-mark approval and have trials planned in the United States.

Tendyne

Although it is not yet approved for use by the FDA, Abbott's Tendyne has been showing promising results in its trial period. This device is unique, as it would be the first device that allows full replacement of the mitral valve without open-heart surgery[25]. If this device is approved, it could drive the market for TMVR, but could hurt the growth of the MitraClip, as it creates more alternatives to open-heart surgery.

Transcatheter Aortic Valve Replacement Market Could be on the Cusp of a Major Breakthrough

Transcatheter aortic valve replacement (TAVR) treatment is still only available to patients posing an intermediate or high-risk to complications surrounding open-heart surgery. Despite this, the TAVR market has grown quickly, and these devices are proving to be just as, if not more, effective than open heart surgery. Currently, the market is dominated by medical device juggernauts, Edwards Lifesciences and Medtronic, but Boston Scientific has recently entered into the market with approval for its Lotus TAVR device. These three companies' devices have proven to be safer than previous models and are in a battle to gain approval to operate on low-risk patients, which would drastically increase the size of the current TAVR market.

Edwards LifeSciences TAVR Valves

Edwards Lifesciences, which is the leader in the cardiac surgery market, also dominated the market for transcatheter heart valve replacements[26]. The company's Sapien line of devices was the first to enter the market for TAVR and has remained the leading device. Edwards Lifesciences currently offers the Sapien 3 and the Sapien XT in the United States. Specifically, the Sapien 3 has shown to significantly reduce the risk of mortality and stroke when compared with open heart surgery. The future is bright for Edwards Lifesciences TAVR devices as, following positive test results, FDA approval for low-risk patients is expected later this year.

Medtronic TAVR Valves

Medtronic also has a strong presence in the TAVR market with multiple devices, including the Evolut R and the Evolut PRO[27]. Medtronic's Evolut PRO features a unique design and has a surrounding wrap created from porcine heart tissue. If Edwards Lifesciences is able to penetrate the low-risk patient market, Medtronic's share in the TAVR market will likely undergo a significant decrease.

Boston Scientific TAVR Valve

With its recent FDA approval, the Boston Scientific Lotus Edge TAVR device provides another option for patients with high-risk of complications from open-heart surgery[28]. This valve is designed to reduce the risk of paravalvular leak. Having recently entered the market for intermediate and high-risk patients, the Lotus Edge TAVR device is unlikely to win approval to operate on low-risk patients. Despite this, this device could be presented with an opportunity to increase its popularity in the market for high-risk patients, while Edwards Lifesciences and Medtronic continue to focus attention on low-risk patients.

Drug-Coated Balloons Expand on Traditional Balloons

Featuring a drug coating designed to combat restenosis, drug-coated balloons have emerged as a promising technology for treating peripheral arterial disease. Working in a similar way to the traditional balloon, drug-coated balloons are also available in many different sizes. The market for drug-coated balloons has been growing at a rapid pace over the past couple of years[29].

Traditional balloon procedures have been linked to restenosis, and if the rate of restenosis continues to rise as it has in recent years, the prevalence of drug-coated balloons will increase as a solution to this problem. This market is also dependent on incidents of peripheral arterial disease, which becomes more common in aging patients.

Recently, the drug-coated balloon market, once an engine of MedTech growth, was dealt a blow, as the FDA escalated concerns of increased two-year mortality rates in patients treated with paclitaxel-coated devices. This was highlighted when Medtronic issued a recall for their below the knee specialized drug-coated balloons. The FDA has also warned physicians that certain types of drug-coated balloons can have negative side effects when used with certain groups of patients. Despite these negatives, the drug-coated balloons have proven to be effective in many different procedures.

Medtronic's iPad Based Pacemaker System

Recently, the FDA has approved Medtronic's new iPad-based pacemaker system. The CareLink SmartSync system enables physicians to monitor and program bluetooth pacemaker devices using a tablet[30].

This next-generation programmer connects a base station and patient connecter through a mobile app, which allows physicians to monitor the data. Medtronic has dealt with issues surrounding the safety of their devices that run with wireless technology in the past, but this device comes with top-notch security controls designed to prevent cyberattacks.

If this bluetooth system can prove to be a secure way for physicians to receive data from patients' cardiac implants, it has potential for significant applications in the medical market.

Latest Take-Home Technological Developments in Cardiology

In the age of pocket computers, and global connectivity only a click away, it was only a matter of time before the medical industry adapted to the new technology. In recent years, there have been many new developments that essentially put a doctor at one's fingertips. These devices include mobile heart rate monitors and other devices that can alert doctors of possible trauma before it occurs.

CardioMEMS

This device provides a way to stop heart problems before they occur and has the potential to be adopted by anyone with a history of heart problems, a significantly sized market. Originally developed by St. Jude Medical, CardioMEMS is a device that alerts doctors that a previous heart failure could be getting worse, before symptoms arise. This small system is implanted in the pulmonary artery and can take pressure readings using a personal monitor, which then securely sends results to a physician. An issue holding this device back is that it was denied reimbursement coverage in a multitude of states and, without this, consumers could have difficulty justifying its high cost. Despite this, this device still has potential, as its innovative technology has the ability to save lives[31].

AliveCor Kardia

AliveCor integrated data from Omron HealthCare Bluetooth-enabled home blood pressure devices into its electrocardiogram technology for mobile devices and developed its AliveCor Kardia Mobile application. This app was the first consumer ready, clinically validated monitor that gave users the opportunity to take a medical-grade electrocardiogram from the comfort of their own homes. Before this, no other platform allowed users to monitor atrial fibrillation and blood pressure to evaluate a more accurate risk for stroke. This product has potential for large growth, as convenience is becoming increasingly valuable, but it is also at risk for increased competition as more companies become aware of this technology[32].

CONCLUSION

Cardiovascular disease is the costliest disease in the United States, with direct medical costs of $555 billion in 2016. By 2035, that figure is expected to double to $1.1 trillion[33]. While the prevalence of cardiovascular disease is certainly a major contributor, so, too, is the high use of technology in the field, including imaging and devices.

Perhaps one class of drugs that consumes much of the focus regarding cost in this field is the PCSK9 inhibitors. The enthusiasm within the medical community about their capacity to reduce events in patients with atherosclerotic cardiovascular disease (ASCVD) was often tempered by their cost. When initially approved, the PCSK9 inhibitors were priced at up to $15,000 a year, more than 100 times the cost of generic statins. For a drug that must be taken for a lifetime, whether a PCSK9 inhibitor or a statin, costs take on a greater concern.

The most recent cost-effectiveness analysis of alirocumab found the drug would be cost effective at a price up to $6,319 per year at the $100,000 willingness to pay threshold, based on an economic analysis of patients in the recently released ODYSSEY OUTCOMES study[34].

As the outcomes data with the PCSK9 inhibitors pile up more and more convincingly, companies like Amgen and Sanofi-Regeneron are also taking steps to address access by lowering costs. In October 2018, Amgen dropped the list price of evolocumab by 60%[35], while Sanofi-Regeneron lowered the price of alirocumab in return for exclusivity on pharmacy benefit manager Express Scripts' national formulary.

The new *ACC/American Heart Association Guideline on the Treatment of Blood Cholesterol* not only incorporated the use of PCSK9 inhibitors for the first time, it included a value statement that underscores the need for clinicians and patients to factor in the cost of drugs in determining the most appropriate treatment strategy[36]. It remains to be seen if recent reductions in pricing for some PCSK9 inhibitors and results from clinical outcomes results from studies like ODYSSEY OUTCOMES could alter the value equation down the road.

This requires that cardiovascular professionals work with policy makers and third-party payers to ensure that while innovating can create reimbursement structures that favor appropriate evidence-based innovation and don't end up stifling its dispersion because of economic incentives.

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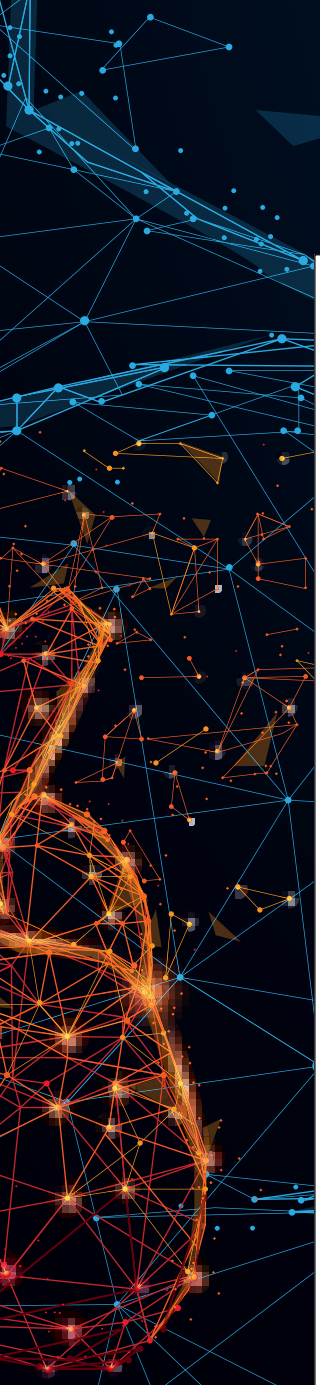

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THERAPEUTIC DIGESTS

2020 THERAPEUTIC TOPICS:

Gene Therapy

Mental Health

Alzheimer's Disease

Medical Cannabis

Diabetes

Infectious Diseases

Oncology

Cardiology

Digital Therapeutics

Women's Health

Central Nervous System

Rare Disease