BYTE-SIZE HEALTH CARE—THE AGE OF “BIG DATA”

Major recent advances in analytics have tremendous potential for developing customized health care plans and furnishing assistance in figuring out how best to use different kinds of health workforce practitioners in providing care. The term “Big Data” implies gigantic volumes of linkable information derived from various sources, such as health care, the environment, and social media. Just exactly how large are these data sets can range from what climate scientists dealt with years ago to the amounts of information retrievable on the Internet today.

Meanwhile, the advent of the age of Big Data poses some interesting challenges. Apart from collecting and storing data, a major objective consists of finding potentially interesting patterns and learning how to use them effectively. A promising step in that direction, as reported on June 6, 2016 in the journal Proceedings of the National Academy of Sciences of the USA, is an investigation known as the Observational Health Data Sciences and Informatics (OHDSI) collaboration. It resulted in the creation of an international data network with 11 data sources from four countries, including electronic health records and administrative claims data on 250 million patients.

All data were mapped to common data standards, patient privacy was maintained by using a distributed model, and results were aggregated centrally. Treatment pathways were elucidated for type 2 diabetes mellitus, hypertension, and depression. The pathways revealed that the world is moving toward more consistent therapy over time across diseases and across locations, but significant heterogeneity remains among sources, pointing to challenges in generalizing clinical trial results. The findings indicate that large-scale international observational research is feasible.

Researchers at Stanford University have responded to the federal government’s Cancer Moonshot Initiative by proposing the development of a global map as a means of enabling patients to share their data anonymously, indicate what they want done with their information, and then make it available to anyone on Earth in one second. Doing so will make it possible to derive answers to relevant questions, such as: Where is everyone located on Earth who has cancer? What are their ages? What kinds of diagnoses have been made? Did their cancers metastasize?

As an example of finding potentially interesting patterns, by analyzing data already shared by individuals who had purchased their own genetic profiles via an online service, it was possible to leverage the statistical power of a huge sample size to detect genetic signals associated with depression. The August 1, 2016 issue of the journal Nature Genetics describes a study in which 17 genetic variations linked to depression were found at 15 genome locations. There also was evidence of an overlap between the genetic basis of depression and other mental illnesses. The findings are viewed as an important step in enabling the public to understand that depression is a brain disease, with it’s own biology.
This month’s invited guest sharing some thoughts through the President’s Corner is Dr. Stacy Gropack, who serves as Dean of the LIU Post School of Health Professions and Nursing. Known by many for her ASAHP contributions in the area of interprofessional education and practice, she has provided much energy, time and wisdom to promoting IPE/IPP through her leadership as Chair of this Interprofessional priority delineated within ASAHP’s Strategic Plan. She is the newly appointed ASAHP representative to the Interprofessional Education Collaborative (IPEC) and has already begun engaging with this important group. I asked her to provide some early impressions to the following questions:

**Question: What is ASAHP's role in IPEC?**
As the leading organization representing allied health professions schools, the Association of Schools of Allied Health Professions (ASAHP) serves as a collaborative resource and advocate for interprofessional education to students, faculty, professional accrediting bodies, and practitioners through instruction, research and service. It is ASAHP’s position that it is essential for all health professions programs and schools to provide interprofessional learning opportunities for students from a variety of health disciplines. IPE must foster competencies beyond clinical care, including leadership, advocacy, and evidence-based practice. Students from all programs should participate in interprofessional placements that provide interaction and collaboration with at least one other health discipline in the care of actual patients/clients and families.

The Interprofessional Education Collaborative (IPEC) came together in 2009 with the intent of developing core competencies for interprofessional collaborative practice. The original IPEC report represented six founding professions: dentistry, nursing, medicine, osteopathic medicine, pharmacy, and public health. Currently IPEC has 9 institutional members, and 12 supporting organizations including ASAHP. Of the IPEC membership, ASAHP is the only organization that is truly interprofessional, representing schools and programs that provide education to a variety of health professionals involved in the delivery of health or related services pertaining to the identification, evaluation and prevention of diseases and disorders; dietary, food and nutrition services; rehabilitation and health systems management, among others. We believe ASAHP’s unique membership and mission will help to extend and enhance the work of IPEC given its broad view of health profession education and practice.

**Question: Why are we a part of this and the importance that our role plays?**
As mentioned, IPEC has been instrumental in creating core competencies for interprofessional collaborative practice. At the Inaugural Council Meeting of the IPEC membership held in Washington, D.C. this June, a revised set of competencies was presented (https://ipecollaborative.org/uploads/IPEC-2016-Updated-Core-Competencies-Report_final_release_.PDF) and discussed. The new competencies are clearly more patient-centered, have greater emphasis on population health, and emphasize the development of a new workforce including community workers and health advisors. Although the competencies have been presented in theory, discussion revolved around the need for application, operationalization, and assessment of achievement of the competencies in education and practice. As an organization that represents health professions programs and schools, ASAHP has the resources and expertise to contribute to the further development of the IPEC competencies allowing them to be more useful in practice, educational and research environments.

ASAHP has identified Interprofessionalism as one of its strategic planning priorities. The alignment of IPEC’ s future initiatives in the areas of faculty development, implementation and assessment of core competencies, and creating partnerships clearly align with ASAHP’s strategic objectives of advocacy, clinical education and creating corporate alignment and partnerships. It is essential that as truly the only interprofessional organization represented in IPEC that ASAHP take the lead in collaborating with IPEC on such initiatives as curriculum development and integration of interprofessional competencies, providing faculty development for creating and implementing interprofessional programming, development of sponsored scholar or residency programs, providing education to our communities and higher education administration, and facilitating research in interprofessionalism.

**Question: What have you learned to date regarding our challenges/opportunities?**
Although IPEC originated in 2009, and there is currently a plethora of information on interprofessional education and practice, there is still a great need to further explore collaboration, and effective implementation and assessment of interprofessional education and practice. It is evident that an ongoing relationship between ASAHP and IPEC will move both organizations forward in preparing future health professionals for team-based care that is effective and efficient. A main objective of ASAHP’s strategic planning committee on interprofessionalism will be to foster a strong relationship with IPEC and work in tandem to achieve competence among our students and health professionals.
UNFINISHED CONGRESSIONAL BUSINESS

Both the House and the Senate adjourned for a nearly two-month break on July 14, 2016 in advance of the parties’ presidential nominating conventions followed by their normal August recess. Although not in session, some important unfinished business has been in the news that includes a failure to produce a funding bill that needs to be sent to President Obama for his signature as a means of successfully combating the Zika virus. As the summer progresses, the number of new cases of this disease continues to rise. The U.S. Department of Health and Human Services (HHS) already has declared a public health emergency in Puerto Rico, indicating that the Zika virus poses a significant threat to public health on the island.

For example, as of August 22, more than 10,000 Puerto Ricans had been diagnosed with the virus, including at least 1,035 pregnant women. White House sources project that 25% of the territory’s residents will contract the virus this year. The number of Florida residents who have contracted Zika also continues to rise. That state has increased the number of individuals being tested for the virus by tenfold while the rest of the nation has doubled testing rates. As more testing is implemented, it is likely that there will be an increase in the number of confirmed Zika cases.

The Obama Administration has responded by reprogramming money within the National Institutes of Health (NIH) and the Biomedical Advanced Research and Development Authority (BARDA) to address the virus and to avoid any funding lapses. The shift will have an impact on some agencies within HHS, including the Centers for Medicare and Medicaid Services (CMS) and the Substance Abuse and Mental Health Services Administration (SAMHSA). Until a more secure funding line is established through appropriations developed by Congress, other public health priorities, such as addressing mental health issues and reducing opioid abuse and addiction are jeopardized.

Zika presents just one more reason why eternal vigilance is needed to prevent new and existing infectious diseases from exerting a devastating toll on human life. Changes in ecological conditions can produce an increase in favorable breeding conditions for mosquitoes and other disease vectors when uninhabited parts of the globe undergo transformations when roads through them are built and accompanying forms of infrastructure are developed. The search for a Zika vaccine is underway. Although there are ample funds for at least the next three or four months, that amount of time may not suffice for one to be discovered. Given the likelihood that vaccine development efforts will have to continue in 2017, the situation provides a strong rationale for the government to allocate the necessary funds.

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<th>2016 ASSOCIATION CALENDAR OF EVENTS</th>
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<td><strong>September 12, 2016</strong>—Institutional Profile Survey Data Collection Period Opens</td>
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<td><strong>October 17-18, 2016</strong>—Leadership Development Program in New Orleans, LA—Part II</td>
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<td><strong>October 19-21, 2016</strong>—Annual Conference in New Orleans, LA</td>
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<tr>
<td><strong>November 30, 2016</strong>—Institutional Profile Survey Data Collection Period Ends</td>
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<td>Note: Efforts are underway to identify future conference locations</td>
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AFFORDABLE CARE ACT DEVELOPMENTS

The Patient Protection and Affordable Care Act (ACA) that became law in March 2010 has led to transformations in the financing and delivery of health care services. Given the size of the U.S. economy, which is the largest in the world, and the fact that nearly 20% of it involves health, it is not too surprising that developments in the news, both pro and con, are generated quite frequently.

Insurance Premium Rate Hikes
Based on approved premium rates that were released in August 2016, significant increases are in store for health insurance purchasers in 2017 in certain states. Insurance regulators announced an average increase of 62% for the biggest plan in Tennessee, 43% in Mississippi, and 23% in Kentucky for large carriers. Insurers claim that as a result of big losses during the early years of implementation of the 2010 health law, they need to raise prices substantially in order to continue offering coverage. Federal officials also have indicated that some increases reflect the planned end of provisions in the law designed to cushion insurers.

Insurance Companies Abandoning Exchanges
Earlier this year, UnitedHealth Group decided to stop selling individual health insurance in most exchanges (commonly known as marketplaces). More recently, Aetna announced that it will stop selling insurance in 11 of the 15 states where it has been active and will abandon expansions that previously had been announced in five other states. The reduction means that coverage will drop from being available in 778 counties in 2016 to 242 counties in 2017. Currently, more than 11 million Americans purchase their health coverage through the federal and state marketplaces.

A new analysis from the firm Avalere indicates that nearly 36% of exchange market rating regions may have only one participating insurance carrier offering plans for the 2017 plan year and there may be some sub-region counties where no plans are available. Nearly 55% of exchange market rating regions may have two or fewer carriers. Seven states (Alaska, Alabama, Kansas, North Carolina, Oklahoma, South Carolina, Wyoming) will have only one carrier per rating region in each rating region in the state in 2017.

Meeting The Challenge Of Making Insurance Coverage Affordable And Available
An Issue Brief from the Office of The Assistant Secretary for Planning and Evaluation in HHS released in August 2016 examines how the combination of tax credits and the opportunity to shop around for coverage through the marketplace would protect consumers in a hypothetical scenario with much higher premium increases than what occurred last year. Focusing on a hypothetical scenario of a 25% increase in premiums for all marketplace qualified health plans, the overwhelming majority of marketplace consumers would be able to purchase coverage for less than $75 per month, just as they could in 2016.

A paper from the Brookings Institution envisions a solution in the form of making the exchanges one big marketplace for everyone buying individual coverage. The 12 million purchasers who obtain coverage through the ACA would merge with the roughly nine million who buy policies outside the exchanges. A model already exists in what was developed in the nation’s capital by the D.C. Health Benefit Exchange Authority. From the day it began providing coverage, the D.C. Health Exchange has required that all individual insurance policies be purchased through it and nearly uninterrupted service has been provided since it came into existence in late 2013. Once enrolled, customers’ applications go directly to the private company of their choice, where service is the same as it would have been had they applied directly to the insurer. Because the D.C. individual market is one big marketplace, there is no “inside” and “outside” the exchanges, with profit in one area and loss in the other. Vermont is the only state that has developed the same framework.
DEVELOPMENTS IN HIGHER EDUCATION

Higher education has drawn increased amounts of attention in recent years. The costs associated with obtaining a college degree and the growing amounts of student debt involved in doing so are two main factors that are of concern to policymakers. The article on page one of this issue of TRENDS has a focus on the emergence of “Big Data.” Given the steady appearance of even huger amounts of data, it will be necessary to have a cadre of computational scientists able to conduct analyses effectively. Similarly, the health professions depend on attracting students who are sufficiently prepared academically in science and mathematics. Among the 64% of students who graduated from high school in 2016 and took the ACT test, the average score in mathematics was 20.6 and 20.8 in science. (The highest possible score on each part of the ACT is 36).

Separating Learning From Credentialing

Periodically, recommendations are made by different groups regarding how to improve the quality of higher education. In a new report issued by the Information Technology and Innovation Foundation (ITIF), a tech policy think tank based in the nation’s capital, the federal government is urged to adopt policies to help separate learning from credentialing, which currently occurs mostly in the form of traditional college diplomas. The purpose is to allow individuals to demonstrate educational mastery to prospective employers more effectively. A proposition is advanced that given the need to build up America’s skilled workforce, now is the time to create alternative paths to certification that would allow students to pursue their best options for learning while applying competitive pressure on colleges and universities to improve quality and reduce costs.

The report calls on Congress to enact a series of reforms when it reauthorizes the Higher Education Act. (It can be accessed at http://www2.itif.org/2016-disrupting-higher-education.pdf?_ga=1.153960445.459835666.1472402498):

• Establish a process to accredit organizations that provide certifications;
• Encourage federal agencies to accept alternative certifications in lieu of degree requirements;
• Require the administration to encourage the private sector to recognize and rely on alternative certifications in their hiring decisions;
• Allow students to use federal aid for alternative learning options, such as MOOCs;
• Ensure graduate programs consider applicants with alternative certifications; and
• Require the administration to conduct a regular survey of employer needs.

Political Party Platforms

Every four years when the Democratic and Republican Parties hold their national conventions, it is customary for each one to produce a Platform Report that specifies their respective principles and policies across a broad range of issues. The conventions held in July 2016 were no exception, with both parties indicating what they hope to achieve in the realm of higher education involving matters, such as how to make college more affordable and refinancing student loans at lower rates.


QUICK STAT (SHORT, TIMELY, AND TOPICAL)

Cardiovascular Health Disease By Occupational Group In 21 States
According to the Centers for Disease Control and Prevention (CDC), cardiovascular disease (CVD) accounts for one of every three deaths in the United States, making it the leading cause of mortality in the country. Cardiovascular morbidity and mortality account for an estimated annual $120 billion in lost productivity in the workplace. Thus, workplaces are viable settings for effective health promotion programs. To determine if an association between occupation and seven cardiovascular health metrics (CHMs) exists, CDC analyzed data from the 2013 Behavioral Risk Factor Surveillance System (BRFSS) industry and occupation module. Among all occupational groups, community and social services employees (14.6%), transportation and material moving employees (14.3%), and architecture and engineering employees (11.6%) had the highest adjusted prevalence of meeting two or fewer CHMs (e.g., not smoking, being of normal weight, having normal glucose and cholesterol levels).

Trends In Employer-Sponsored Health Insurance
According to a report by the Agency for Healthcare Research and Quality (AHRQ), from 2014 to 2015, there was no significant change in the overall percentage of private-sector employees covered by a health insurance plan offered by their employers (the "enrollment rate") and no significant change in the enrollment rate at large firms (with 100 or more employees). While there was no significant change in these rates, there was an increase in the number of enrollees overall, from 55.8 million in 2014 to 57.3 million in 2015 and the number of enrollees at large firms from 42.8 million to 44.4 million as employment increased, both overall and among large firms. In contrast, the enrollment rate for employees in small firms (with fewer than 50 employees) declined from 28.3% to 27.1% as the number of enrollees remained constant from 2014 to 2015 (8.9 million enrollees in both years) and employment grew.

HEALTH TECHNOLOGY CORNER

Integrated Hollow Microneedle-Optofluidic Biosensor For Therapeutic Drug Monitoring
Researchers at the University of British Columbia and the Paul Scherrer Institut (PSI) in Switzerland have created a microneedle drug monitoring system that could replace invasive blood draws, improve patient comfort, and reduce costs. The microneedle is a small, thin patch that looks like a hollow cone that is pressed against a patient’s arm during medical treatment. It measures drugs in the bloodstream without requiring a blood draw or piercing the skin. The team developed this microneedle to monitor an antibiotic that is used to treat serious infections and is administered through an intravenous line. Researchers discovered that fluid just below the outer layer of skin, instead of blood, could be used to monitor levels of antibiotic in the bloodstream.

Wearable Biosensors Studied For Clinical Monitoring And Treatment
Investigators at Seoul National University in Korea have been working to develop a noninvasive way to monitor blood glucose using a tiny wearable electronic biosensor that detects glucose levels in sweat. Early research demonstrated that their Band-Aid–sized device not only monitors sweat glucose, but also might be coupled with microneedles to deliver medication. The device is part of a new generation of flexible, wearable biosensors being developed worldwide as potential clinical tools. The devices build on the successes of the now ubiquitous wearable fitness trackers that measure activity, heart rate, and sleep using mobile technology. They go a step further integrating advances in nanotechnology and materials science to detect clinically meaningful metabolites and other compounds in sweat and other bodily fluids.
**AVAILABLE RESOURCES ACCESSIBLE ELECTRONICALLY**

ASAHP Submits State Authorization Comments To Department Of Education

ASAHP submitted comments on August 24, 2016 to the U.S. Department of Education on the *Program Integrity and Improvement Notice of Proposed Rulemaking (NPRM)* that was proposed by the Department in July. The comments outline the unintended consequences of state authorization and note ASAHP’s encouragement that the NPRM includes federal recognition of state authorization reciprocity agreements as well as the elimination of a requirement that states conduct an “active review” of out-of-state institutions, a provision contained in previous drafts. If the Department is to issue a final rule, it must be done no later than October 31 in order to take effect by July 1, 2017. The comments can be accessed at [http://www.asahp.org/wp-content/uploads/2016/08/ASAHP-State-Authorization-NPRM-Response-8-24-161.pdf](http://www.asahp.org/wp-content/uploads/2016/08/ASAHP-State-Authorization-NPRM-Response-8-24-161.pdf).

**Realizing The Potential Of Telehealth**

An aging population, increasing chronic illness, and accelerating health costs are just a few factors compelling health systems to rethink patient care. Could telehealth be part of the solution? A Deloitte Center for Health Solutions health policy brief explores the regulatory landscape around telehealth. Some recent studies show that telehealth visits are associated with lower costs than traditional in-office visits and could result in Medicare savings, while others are concerned about its potential to increase costs in a fee-for-service environment. Under new value-based payment models that reward outcomes (including lower total cost of care) rather than utilization, telehealth may be a cost-effective solution to provide access to care and, ideally, reduce unnecessary hospital care. Given these trends, providers and health plans should continue to monitor the complex and ever-evolving policy landscape around telehealth, and consider adopting targeted strategies for telehealth that encourage self-care and increase medication adherence to realize the clinical and economic benefits. The policy brief can be accessed at [file:///C:/Users/Tom/Downloads/us-lshc-realizing-the-potential-of-telehealth.pdf](file:///C:/Users/Tom/Downloads/us-lshc-realizing-the-potential-of-telehealth.pdf).

**Patients’ Ability To Access Their Hospital Electronic Records Grows**

A report from the American Hospital Association (AHA) indicates that hospitals are offering individuals more electronic access to their medical information than ever before. For example, 92% of hospitals last year offered patients the ability to view their medical records online, up from 43% in 2013; 84% allowed patients to download information from their medical record, up from 30% in 2013; and 70% allowed a referral summary to be sent to a third party, up from 13% in 2013. Patients also have a growing ability to interact with their providers and perform routine tasks online, such as pay bills (74%), securely send messages to their care providers (63%), and make medical appointments (45%). The report can be accessed at [http://www.aha.org/research/reports/tw/16jul-tw-healthIT.pdf](http://www.aha.org/research/reports/tw/16jul-tw-healthIT.pdf).

**Integrating Health Literacy, Cultural Competence, And Language Access Services**

CHRONIC DISEASE PREVENTION

The National Institute on Minority Health and Health Disparities (NIMHD), part of the National Institutes of Health, is launching the Transdisciplinary Collaborative Centers (TCC) for Health Disparities Research on Chronic Disease Prevention program. The purpose is to respond to the need for more robust, ecological approaches to address chronic diseases among racial and ethnic minority groups, under-served rural populations, individuals of less privileged socio-economic status, along with groups subject to discrimination who have poorer health outcomes often attributed to being socially disadvantaged. Two centers will focus their research efforts on development, implementation, and dissemination of community-based, multilevel interventions to combat chronic diseases such as heart disease, cancer, and diabetes. The centers will share approximately $20 million in funding over five years, pending available funds.

Where individuals live, work, and play has significant impact on the development and progress of chronic diseases and conditions. The new TCC program looks beyond individual behavioral risk factors to engage the family, community, healthcare systems, and policy impacts that also affect one’s health. Encouraging researchers to use a transdisciplinary, collaborative, and systems approach to address disparities in chronic disease prevention, the program will emphasize prevention, early detection, and early treatment. Studies have shown that early treatment improves health outcomes in many conditions, implying that early detection is important to combating disease progression. Individuals from health disparity populations generally have lower detection rates, however, leading to later-stage diagnosis and treatment, which can have a negative impact on disease outcomes.

MEDICARE SPENDING IN THE LAST YEAR OF LIFE

Current research suggests that Medicare spending on the oldest beneficiaries in their last year of life may not be as high as previously thought. The Kaiser Family Foundation (KFF) analyzed spending trends in Medicare and found that spending per person in the last year of life peaks at age 73 and then decreases as individuals age. According to the analysis, average spending on individuals who died at age 73 in 2014 was $43,353. The older the enrollee, the lower the spending was in the last year of life. Spending has become less concentrated over the last decade for beneficiaries who died. In 2000, 18.6% of Medicare spending went to pay for services for beneficiaries who died that year, which decreased to 13.5% of Medicare spending in 2014. The change could be due in part to more beneficiaries aging into the system, skewing the Medicare population toward a younger, healthier group. It also could be due to per capita spending on patients who die in any given year growing more slowly than that for survivors.

ADOLESCENT BIRTH RATE IN DECLINE

Teenage mothers who end their education prematurely in order to give birth may be at a disadvantage socially, economically, and health wise. Moreover, their offspring may experience the same kinds of deficits in life. The good news is that the teen birth rate in the U.S. dropped for another consecutive year, continuing a long-term decline. According to the 2016 edition of America’s Children: Key National Indicators of Well-Being, in 2014 the adolescent birth rate was 11 births per 1,000 girls ages 15 to 17 years, down from 12 per 1,000 in 2013. Racial and ethnic disparities in adolescent birth rates also have declined, although substantial differences persist. The annual report is published by the Federal Interagency Forum on Child and Family Statistics. This year’s report is the 18th in an ongoing series and presents key indicators of children’s well-being in seven domains: family and social environment, economic circumstances, health care, physical environment and safety, behavior, education, and health.