

JUNE 2021

HIGHLIGHTS

Federal Government Funds	2
ASAHP Calendar of Events	2
Health Reform	3
Higher Ed Developments	4
Quick STAT	5
Health Technology Corner	5
Obtainable Resources	6
Health Monitoring	7
Cognitive Epidemiology	7



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HOME CARE IN THE HEALTH SPECTRUM

Donald Berwick, former president of the Institute for Healthcare Improvement who also served as acting administrator of the Centers for Medicare & Medicaid Services (CMS) during the Obama administration, indicated in a webinar on value-based care sponsored by the Duke Margolis Center for Health Policy on June 10, 2021 that “the reliance on hospitals is one of the biggest mistakes in design we have -- home is the hub. Anything the Center for Medicare and Medicaid Innovation (CMMI) can do to advance the shift of the center of care to home and community is good.” Assuming that a widespread transformation of that nature is on the horizon, there will be significant impacts on the workforce needed to provide health and health-related social services. A related aspect is the extent to which technology will play a role in efforts to address the requirements of patients with multiple chronic ailments. The U.S. population not only is experiencing a growth in the number of individuals aged 65 and older, but many of them also will live alone and will require various forms of assistance if an aim is to enable them to continue to exist independently.

One element in the technological armamentarium is the employment of robots as assistive devices. The entire May 2021 issue of the journal *Cyberpsychology, Behavior, and Social Networking* was devoted to this topic. A rationale for doing so is that pandemic living has blurred the boundary between what is “real” and what is “virtual,” merging the computer-generated and the physical in a tightly woven web. Although research about technology development during this pandemic is only just now becoming available, an observable truth is that COVID-19 has increased a reliance on technology, and that likely includes robots. While in 2018, global sales of consumer robots totaled an estimated \$5.6 billion, the market is expected to more than triple to \$19 billion by the end of 2025 because robotics are perceived as going from a nascent industry to a more robust presence in furnishing patient care. A major objective is to manufacture social robots able to engage with humans and to provoke an emotional connection so that interactions between the two will feel much more like a relationship with a “someone” rather than a “something.”

A common belief is that robots eventually will become sophisticated enough that they will be indistinguishable from humans, but this assumption begets two questions. First, is existing theorizing about interpersonal, human-human relationships applicable to studying human-robot relationships? Secondly, given the present state of knowledge, should human-robot interaction designers' goal be to mimic them? Among the topics discussed in this journal issue is the notion of peer pressure on human risk-taking behavior. The results of one investigation show both possible benefits and perils that robots might pose to human decision-making. Although increasing risk-taking behavior in some cases has obvious advantages, it also could have detrimental consequences that only now are beginning to emerge. An example of a possible negative outcome is whether robots could increase risky behaviors such as smoking and substance abuse. Clearly, any possible happenings of that nature should be avoided vigorously.



PROJECTED GOVERNMENT SPENDING

Coming weeks and months will help to define how much money the federal government will allocate for a wide variety of purposes that affect health care and higher education both in calendar year 2021 and in the upcoming new fiscal year that begins next October 1. Spending occurs in three major ways.

Mandatory spending represents the largest share of the government's budget. Amounts are not fixed and some money is directed to what are called entitlement programs, such as Medicare and Social Security. The key determinant is eligibility to participate in these programs. Once individuals are deemed eligible, the government is obliged to pay whatever costs are involved in meeting its obligations.

Expenditures that tend to merit the most attention in the mass media are called *discretionary*. They can vary in amounts from one year to the next and depend on agreements being reached on how much of a President's proposed budget will be accepted by Congress. Oftentimes, amounts for the 12 major categories are not agreed upon for the start of a new fiscal year. Whenever that situation occurs, either short-term or long-term continuing resolutions known as CR's enable the government to continue functioning uninterrupted. Sometimes, the final outcome is the enactment of omnibus legislation that encompasses several of the 12 appropriation bills.

Another important category affects the academic community and it involves student financial support. One aspect pertains to student loans, a topic that regularly is addressed in this newsletter. Congress sets the terms regarding how much money will be dispersed to colleges and universities to benefit student borrowers. Current overall student debt is approximately \$1.7 trillion. Many individuals find it extremely difficult to repay their loans. Policymakers often debate whether it is feasible to forgive a portion of this debt.

As reported on this page in the April 2021 issue of this newsletter, the **Biden administration** submitted a preliminary budget proposal to Congress on the 9th of that month for FY 2022. A more complete version was sent on May 22. Some of its main spending requests include:

\$131.8 billion for Department of Health & Human Services (23.5% increase over FY 2021)

\$51.9 billion for National Institutes of Health (21% increase over FY 2021)

\$9.5 billion for Centers for Disease Control & Prevention (21.4% over FY 2021)

\$7.8 billion for Health Resources & Services Administration (8.5% over FY 2021)

\$854 million for HRSA's Title VII Health Professions and Title VIII Nursing (12.1 % over FY 2021)

2021-2022 ASSOCIATION CALENDAR OF EVENTS

October 18-19, 2021—Leadership Development Program—Session I in Long Beach, CA

October 20-22, 2021—ASAHP Annual Conference in Long Beach, CA

May 12-13, 2022—Leadership Development Program—Session II in Columbus, OH

October 19-21, 2022—ASAHP Annual Conference in Long Beach, CA

HEALTH REFORM DEVELOPMENTS

In his book, *Reflections On The Revolution In France*, **Edmund Burke** stated in 1790: “When I see the spirit of liberty in action, I see a strong principle at work; and this, for a while, is all I can possibly know of it. The wild *gas*, the fixed air is plainly broke loose: but we ought to suspend our judgment until the first effervescence is a little subsided, till the liquor is cleared, and until we see something deeper than the agitation of a troubled and frothy surface.” Some ambitious plans by **President Biden** and congressional Democrats are at a juncture where various restraints in policy-making progress are beginning to manifest themselves as both intra- and inter-party disagreements become more prominent, revealing that some early froth has begun to subside.

June 17, 2021 marked another important day in the history of the *Affordable Care Act*. The U.S. Supreme Court on a 7-2 vote ruled that a lawsuit led by several Republican states and the former **Trump administration** challenging the constitutionality of this legislation did not have legal standing because the provision did not injure the plaintiffs. The decision preserves the law, thus guaranteeing continued access to health plans by its beneficiaries. The case centered upon the constitutionality of maintaining the ACA in place after the penalty for the individual mandate, a requirement that individuals enroll in a health insurance plan, had been zeroed out. In a decision in 2012, the court ruled on a 5-4 vote that the penalty was a tax. When a 2017 reform law eliminated the tax, plaintiffs argued that the entire law no longer was constitutional.

Medicare’s Role In Meeting The Costs Of Vaccinations For COVID-19

As a major force in the provision and financing of health care services, the Medicare program is making it possible to furnish assistance for home-bound beneficiaries who have difficulty meeting the costs of being vaccinated during the current pandemic. The agency has agreed to pay an additional \$35 per dose for COVID-19 vaccine administration in that setting. The purpose is to facilitate access to immunizations for individuals who find it difficult either to leave their homes or seek vaccinations in a community setting. The Centers for Medicaid & Medicare Services (CMS) estimates that the policy will aid 1.6 million adults age 65 or older. An additional payment increases the cost per vaccine dose from \$40 to \$75, depending on geographic location to account for costs associated with providing the vaccine at home and monitoring patients after the drug is administered.

In a related action, U.S. Department of Health and Human Services (HHS) Secretary **Xavier Becerra** notified insurers and providers in a letter sent on June 9, 2021 to remind them that they have signed agreements to cover the administration of COVID-19 vaccines free-of-charge to patients, and group health plans and health insurers of their legal requirement to provide coverage of COVID-19 vaccinations and diagnostic testing without patients encountering any cost.

Limits Imposed On Use Of The Reconciliation Mechanism For Budgetary Matters

The December 2020-January 2021 issue of the newsletter in this column explained how Congress is able to use budget reconciliation procedures to pass some tax and spending measures in areas, such as Affordable Care Act enhancement, pandemic relief, and climate change. The process begins with a budget resolution. Next, reconciliation legislation is then considered using a fast-track process that can be passed by a simple majority without having to be filibustered in the Senate. This approach has attractive features since the Senate is split 50-50. Democrats expressed considerable enthusiasm over the prospect of using multiple reconciliation initiatives to advance **President Biden’s Build Back Better**, which is a comprehensive undertaking aimed at enacting the American Jobs Plan, the American Families Plan, and various health care reform proposals designed to expand the Medicare program and lower the price of prescription drugs.

Their hopes were dashed, however, when Senate Parliamentarian **Elizabeth MacDonough** ruled that Democrats can only use the budget reconciliation process one more time during 2021 to pass one legislative package with a simple-majority vote. Her position is that a revision to the 2021 budget resolution cannot be discharged automatically from the Senate Budget Committee, requiring Democrats to secure at least one Republican vote on a panel where members are split 11-11 along party lines.

DEVELOPMENTS IN HIGHER EDUCATION

Occupants of the White House can change whenever an election occurs. Regardless of whether a presidential administration is Democrat or Republican, its members tend to focus on many of the same issues that characterize the sphere of higher education. Now that **President Biden's** team is firmly established at the U.S. Department of Education, an effort will be made not only to undo various policies implemented during the **Trump administration**, but also to place greater emphasis on topics which it perceives as being essential.

Efforts to make changes will include altering Title IX regulations installed by former Education Secretary **Betsy DeVos** regarding sexual misconduct at schools and colleges. Another topic that has attracted an increased amount of attention in recent months in various states is the issue of transgender students and their desire to play scholastic sports on women's teams. For-profit colleges' policies also will come under review since the previous administration either scaled back or eliminated rules involving "gainful employment" regulations that were formulated during the Obama administration.

Mandatory Requirements Involving Vaccinations And Mask Wearing

Many colleges and universities around the nation are faced with the more immediate task of deciding which safety policies need to be in place as students return to campus this coming fall. The kinds of questions posed by academic administrators include whether to require or just recommend that students be vaccinated. Related matters entail which vaccines have been fully approved by the U.S. Food & Drug Administration. Compared to individuals age 65 and older, college age students are at less risk of: being infected by the coronavirus, experiencing deadly symptoms if they do contract the disease, and spreading it after becoming infected. A debatable proposition advanced by some critics of vaccination policy is whether any student who already has antibodies from COVID-19 should be vaccinated at all.

Beginning with the appearance of this disease, individuals of all ages were required to wear masks. Campus administrators have to decide which procedure to mandate. Current guidance from the Centers for Disease Control & Prevention stipulate that wearing masks is optional only for individuals who are fully vaccinated. Part of the uncertainty is whether to require that masks be worn indoors or should the same restriction apply to outdoors on campus? A related consideration is whether football stadiums be open to fans who can fill every available seat or should the number be limited because of social distance policies?

International And Domestic Student Enrollment Trends

The Institute of International Education on June 10, 2021 released the findings of its fourth survey in the organization's *COVID-19 Snapshot Survey Series*, examining the effects of the COVID-19 pandemic on international educational exchange to and from the United States. The new survey data find that U.S. institutions are focusing on bringing students back to campus, with 86% planning some type of in-person study in fall 2021. None of the reporting institutions intends to offer virtual instruction only. Mirroring this finding, 90% of institutions plan to offer in-person study to international students. For that group, applications are up 43% for the 2021-2022 academic year, almost double the increases reported one year ago by institutions.

Meanwhile, the National Student Clearinghouse Research Center provided a final tally of the enrollment decline higher education experienced during the spring term of 2021. Total college enrollment declined 3.5% percent from a year earlier, a shortfall of 603,000 students, which is seven times worse than the reduction one year earlier. Male student enrollment was down 5.5%, or 400,000 students, from a year ago compared with a drop of only 2%, for women, or 203,000 students. Although enrollment fell in almost every undergraduate major tracked by the research center, psychology, and computer and information science were among the few bright spots at four-year institutions. Enrollment in those majors was up 4.8% percent and 3%, respectively, from a year ago.

QUICK STAT (SHORT, TIMELY, AND TOPICAL)

Rural-Urban Disparity In Mortality In The U.S. From 1999 To 2019

According to an article in the June 8, 2021 issue of the *Journal of the American Medical Association*, less is known about recent trends in rural-urban differences in age-adjusted mortality rates (AAMRs) overall in the U.S. So, investigators analyzed all deaths occurring in the U.S. using the Centers for Disease Control and Prevention Wide-Ranging Online Data for Epidemiologic Research database from 1999 to 2019. Rural residents experienced greater mortality and the disparity between rural and large metropolitan areas tripled from 1999 to 2019. Even though there were reductions in AAMRs for all ages, there was a 12.1% increase in the AAMR for rural residents aged 25 to 64 years, which was driven by an increasing AAMR among Non-Hispanic White individuals. Non-Hispanic Blacks, however, had greater AAMRs across all three U.S. Census-categorized areas than all other racial/ethnic groups. These trends could be exacerbated further by rural hospital closures and the COVID-19 pandemic.

Less Traffic, Fewer Collisions, Increased Motor Vehicular Deaths In 2020

Many individuals started working from home in March 2020 because of COVID-19, removing a commute from their daily routine. Yet, motor vehicle deaths in 2020 are estimated to be the highest since 2007 despite the decrease in miles driven, and surveys show that dangerous driving behaviors actually have increased during the pandemic. The National Safety Council (NSC) estimates that 42,060 passengers died on U.S. roads in 2020, which is an 8% increase over 2019. Despite a 13% decline in vehicle-miles traveled, the preliminary estimated rate of death on U.S. roads rose 24% year over year, which is the largest increase measured since 1924, nearly a century. While there have been fewer drivers on the road, data from traffic analytics firm Inrix show a speed increase in the country's most congested urban areas during 2020. Data show that compared to 2019, the rate of collisions in the U.S. decreased by 30% in 2020, but according to The Travelers Cos. Inc.'s 2021 Travelers Risk Index, dangerous driving behaviors also have increased.

HEALTH TECHNOLOGY CORNER

Brain Areas Involved In Seeking Information About Bad Possibilities

The term “doomscrolling” describes the act of endlessly scrolling through bad news on social media and reading every worrisome tidbit that materializes. Similarly, specific areas and cells in the brain become active when an individual is faced with the choice to learn or hide from information about an unwanted aversive event, such as a punishment that cannot be prevented. As reported in a study described on June 11, 2021 in the journal *Neuron*, researchers at Washington University School of Medicine discovered that by examining the anterior cingulate cortex (ACC) and the ventrolateral prefrontal cortex (vlPFC), attitudes toward punishment and reward information are not tied strictly to each other. Individuals with similar preferences for reward information can have strikingly different attitudes toward punishment information. Although the investigation studied monkeys, understanding the brain's neural circuits underlying uncertainty may lead to better therapies for conditions, such as anxiety and obsessive-compulsive disorder.

Astronomy Meets Pathology In Developing Predictive Biomarker Signatures For Immuno-Oncology

The discovery of new predictive biomarkers is critical to improving an ability to (1) predict whether a patient is likely to respond to available drugs and (2) guide treatment decisions for advanced metastatic cancers using immunotherapy. Platforms that can elucidate the spatial relationship between immune system cells and the tumor are critical to this endeavor. According to an article published on June 11 in the journal *Science*, recent advances in multiplex immunofluorescence (mIF) have made it possible to map the tumor microenvironment across an entire tissue section mounted on a microscope slide with single-cell resolution. An innovative approach has been developed at Johns Hopkins University to analyze large mIF datasets using celestial object-mapping algorithms to identify optimized predictive phenotypic signatures rapidly. This interdisciplinary platform, called *AstroPath*, makes use of immunology, pathology, computer science, and astronomy to lay the foundation for rapid, efficient biomarker discovery.

OBTAINABLE RESOURCES

Innovative Funding Models During COVID-19

A report from AcademyHealth supplements an earlier *Paradigm Project Horizon Scan* published in 2019 that examined innovative alternatives to peer review as the basis for allocating research funds. Since then, the COVID-19 crisis has brought into sharp focus the importance of research and scientific advancement in modern society. Facing a global pandemic, there is an urgent need to find solutions through research, not just to vaccines and treatments to address COVID-19 directly, but also wider investigations to address broader challenges faced by society. The 2019 report is updated to add a review of a range of different approaches used to support research related to COVID-19: public engagement and crowdfunding; flexibility in use of funding and resources; adapting application and decision processes to ‘fast-track’ funding; coordination and access; and prizes. The scale and speed of the changes in approach and openness to new funding routes is unprecedented and presents an opportunity for change and learning. It also is worth noting that at present there is little evidence on the effectiveness of these different approaches. Over the longer term, it will be important to evaluate how well these novel mechanisms performed in directing funding quickly and appropriately to learn what works. The report can be obtained at [paradigm_report_innovative_funding_may_2021.pdf](https://www.academyhealth.org/paradigm-report-innovative-funding-may-2021.pdf) ([academyhealth.org](https://www.academyhealth.org)).

Senior Report: America’s Health Rankings

A nearly 60% increase in the population of older adults in the next 30 years is projected, according to the United Health Foundation’s latest *Senior Report*, which measures the state of the physical, mental, and social health of older adults in the U.S. The analysis, which largely included data from 2019, finds that there will be nearly 86 million individuals aged 65 and older by the year 2050, up from 54 million in 2019. Even before the pandemic upended their health, this population was experiencing worsening health outcomes, including a nearly 40% increase in drug-related deaths since 2014 and an 11% increase in frequent mental distress from 2016-2019. At the same time, care for this group also improved in some areas in recent years, including increases in geriatric providers, flu vaccination rates, and exercise rates. The report can be obtained at [2021-senior-report.pdf](https://www.americashealthrankings.org/2021-senior-report.pdf) ([americashealthrankings.org](https://www.americashealthrankings.org)).

Grant Review Feedback: Appropriateness And Usefulness

An article published earlier this year in the journal *Science and Engineering Ethics* indicates that the primary goal of the peer review of research grant proposals is to evaluate their quality for the funding agency. An important secondary goal is to provide constructive feedback to applicants for their resubmissions. Little is known, however, about whether review feedback achieves this goal. For example, although not listed as a core value of the NIH peer review system, reviewer feedback to applicants for the purposes of improving investigator grantsmanship and the overall quality of applications is an important, if secondary, purpose of grant peer review. The paper presents a multi-methods analysis of responses from grant applicants regarding their perceptions of the effectiveness and appropriateness of peer review feedback they received from grant submissions. Overall, 56–60% of applicants determined the feedback to be appropriate (fair, well-written, and well-informed), although their judgments were more favorable if their recent application was funded. Importantly, independent of funding success, women found the feedback better written than men, and more white applicants found the feedback to be fair than non-white applicants. Also, perceptions of a variety of biases were specifically reported in respondents’ feedback. Fewer than 40% of applicants found the feedback to be very useful in informing their research and improving grantsmanship and future submissions. Further, negative perceptions of the appropriateness of review feedback were positively correlated with more negative perceptions of feedback usefulness. Importantly, respondents suggested that highly competitive funding pay-lines and poor inter-panel reliability limited the usefulness of review feedback. Overall, these results suggest that more effort is needed to ensure that appropriate and useful feedback is provided to all applicants, bolstering the equity of the review process and likely improving the quality of resubmitted proposals. The paper can be obtained at <https://link.springer.com/content/pdf/10.1007/s11948-021-00295-9.pdf>

TECHNOLOGY, HEALTH MONITORING, AND PRECISION HEALTH

Technological advances exert a vast impact on health care and the future promises to bring forth new developments that will affect health monitoring and precision health. As described in the June 2021 issue of the journal *Science Translational Medicine*, genomic analysis has allowed for even more precise risk assessment, and the current pace of technological advancement could make it feasible to genotype infants at or before birth. The genome is far from the only contributor to disease and must be considered in conjunction with its complement the “exposome,” which comprises the totality of environmental exposures over the course of one’s lifetime, including internal exposures, such as the body’s microbiome and oxidative stresses. Personalized disease risk can be determined from genetic and exposure risk factors and used to create an individualized model of health. Meanwhile, a broader understanding of health status is being pursued in efforts such as *Project Baseline* (www.projectbaseline.com/) and the Precision Medicine Initiative “*All of Us*” cohort (<https://allofus.nih.gov/>), which are collecting data from tens of thousands of participants to build a model of human health and disease. This model provides an individualized baseline for personalized health, and the collective data can be used to build a framework for population-based health predictions.

Wearable health monitoring devices have become increasingly prevalent among consumers. The development of flexible electronics has further expanded the field of wearable technologies into textiles and beyond. Additionally, tear biomarker discovery is at an early stage of development for conditions other than ocular disease. Saliva also is being investigated as a diagnostic fluid and is a noninvasive source of many of the same biomarkers that are present in serum, even biomarkers for nonoral cancers for example. Also, sweat analysis recently has been reported in a headband and wristband containing flexible sensors that are capable of processing and transmitting data regarding hydration and electrolyte concentrations. All these innovations have significant potential to improve health status of individuals, but key challenges exist. There will be no shortage of health data from continuous health monitoring sensors and efforts such as *Project Baseline* and *All of Us*, but proper interpretation of these datasets will be challenging. The unprecedented influx of continuous health monitoring data for parameters that are not normally measured at such frequencies will require an entirely new process for validation and guidelines on interpretation. Another hurdle will be management of the sheer amount of data generated. Further hurdles in the path of precision health include issues of privacy and regulatory oversight, as well as the behavioral psychology of keeping users engaged in various practices.

ANIMAL PREDATORS AND ACHIEVEMENT OF HUMAN SOCIAL GOOD

Wolves represent a type of predator threatening livestock, such as cattle and sheep. Able to cover vast distances traveling in packs, the species *canis lupus*, the gray wolf, can develop an enormous appetite on long journeys in search of food. Any creatures unfortunate enough to be in their path soon becomes a tasty comestible on such occasions. Wolves generally are not associated with pleasant imagery, a view revealed in the tale of Little Red Riding Hood or by the expression “a wolf in sheep’s clothing,” which reflects an unsavory human character. A more recent appraisal, however, suggests that wolves may have the capacity to add to human betterment.

Humans nearly eradicated the species from the continental U.S. by the 1960s, but legal protections strengthened during the latter half of the 20th century made it possible for about 5,500 wolves to exist in 10 coterminous states today. According to an article published on June 1, 2021 in the journal *Proceedings of the National Academy of Sciences of the USA*, researchers quantified the effects of restoring wolf populations by evaluating their influence on deer–vehicle collisions (DVCs) in Wisconsin. They show that, for the average county, wolf entry reduced DVCs by 24%, yielding an economic benefit that is 63 times greater than the costs of verified wolf predation on livestock. Most of the reduction is due to a behavioral response of deer to wolves rather than through a deer population decline from wolf predation. Findings suggest that wolves control economic damages from overabundant deer populations in ways that human deer hunters cannot. Deer numbers have surged, increasing from about 2–4 deer per km² in the precolonial era to 15–50 deer per km² in some areas, affecting ecosystems by suppressing forest regeneration; altering the composition of tree and herbaceous plant species; contributing to the spread of invasive species; and causing Lyme disease through deer tick infestation.