

MAY 2020

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RESEARCH AND EDUCATION AFTER THE PANDEMIC

COVID-19 is having a dramatic impact on the delivery of health services as well as on the nation's economy. A cornucopia of research topics will become available for study once the pandemic has been relegated to the past tense. As an illustration, eventual findings from retrospective reviews to create improved understandings of how to keep patients from being assigned to various settings, such as intensive care units could influence health professions education by enabling students through the use of case studies to learn about what worked effectively and what failed to do so in patient care during a pandemic.

Research wise, each year approximately 40% of the manuscripts submitted to the Association's *Journal of Allied Health* are rejected, often because of serious research methodology flaws. An article that appeared in the May 2020 issue of the *Journal of Clinical Epidemiology* sheds light on a common obstacle encountered by many investigators, which is the ability to recognize how "confounding" threatens the process of causal inference. The authors posit that a sound understanding of confounding within the counterfactual framework of causation enables better anticipation and dealing with this source of bias in research practice.

As a remedy, they propose a simplified explanation of the counterfactual definition of confounding based on a non-technical and graphical presentation of the central role of exchangeable background risks. As a first step, the following definition from the *Dictionary of Epidemiology* is offered: "The distortion of a measure of the effect of an exposure on an outcome due to the association of the exposure with other factors that influence the occurrence of the outcome. Confounding occurs when all or part of the apparent association between the exposure and the outcome is in fact accounted for by other variables that affect the outcome and are themselves not affected by the exposure."

An exposure is broadly defined as being subjected to some kind of determinant, either harmful (risk factor) or beneficial (protective factor), or to a certain intervention or treatment. Like exposures, outcomes of interest in clinical epidemiological research also are broadly defined, for example, the occurrence or cure of a certain disease or health-related condition. It is assumed for ease of explanation that exposures and outcomes are dichotomous and are related positively, e.g., exposure to a risk factor leads to more disease or exposure to treatment produces a cure. Concepts to be explained also apply, however, to exposures and outcomes that are non-dichotomous or inversely related.

Consequently, when not appropriately accounted for by design or in the analysis of an investigation, confounding may bias study findings by distorting the association measures used for quantifying the nature and magnitude of the relation between the primary exposure and outcome. A key implication regarding what may need to be emphasized from an educational perspective is that this approach could serve in a valuable way for introducing researchers and students to the underlying concepts of confounding as explained from a counterfactual viewpoint.

PRESIDENT'S CORNER

BY ASAHP PRESIDENT PHYLLIS KING



While you work on plans to address the rapid changes occurring in education and health care, ASAHP is here to serve as a valuable resource to support and advance your efforts. A new strategic plan has been designed to navigate a more unpredictable future. Infused in this planning are core values of providing high quality education, interprofessional collaboration, connecting education and health, innovation, leadership, and diversity. ASAHP's mission of advancing health through interprofessional collaboration is supported by five strategic objective areas and associated success measures.

STRATEGIC OBJECTIVES	SUCCESS MEASURES
<i>1. Communication, PR, and Marketing</i>	Membership growth Social media/website upgrades Search engine optimization Communication and marketing plan implemented
<i>2. Leadership Development</i>	Leadership Development Program expanded Peer mentoring implemented Faculty networking, alumni, graduate events created Speaker bureau plan created Program for awards/recognitions created
<i>3. Education</i>	Regional summits implemented Mentoring process created New interprofessional collaborations formed Internal academic speakers bureau created
<i>4. Partnerships, Alliances, and Advocacy</i>	Alliances with professional organizations developed Healthcare partnerships developed Advocacy engagements
<i>5. Research, Discovery, and Innovation</i>	Annual conferences implemented Special summits implemented IPE research grant created Create a platform and process to enable research collaboration and sharing of best practices among members

The Association is demonstrating adaptability and responsiveness to the immediate needs of members to address current issues such as disruptions in clinical education, the rise of telehealth, and many more. Leadership mobilized to create quality webinars attracting hundreds of participants. More webinars are forthcoming. Check out the website (asahp.org) for up-to-date information and use the online communities to share information, network and learn from one another how to face this unprecedented time together.

Please member that the next ASAHP Webinar, Considerations in Reintegrating Students into Clinical Settings, will occur on May 29, 2020 at 2 PM—3 PM, EDT.



HEROES ACT PASSED IN HOUSE

Round five in a sustained effort to deal with economic problems resulting from the COVID-19 pandemic was passed by the U.S. House of Representatives in a close 208-199 vote on May 15, 2020 that occurred mostly along party lines (only one Republican voted for it). Called the *Health and Economic Recovery Omnibus Emergency Solutions (Heroes) Act, (H.R. 6800)*, this spending package would provide another \$3 trillion in supplemental funds.

Among its major features, the proposed legislation would furnish an additional \$100 billion for the provider relief fund initially established in the *Coronavirus Aid, Relief, and Economic Security (CARES) Act (P.L. 116-136)* and also would expand the *Paycheck Protection Program and Health Care Enhancement Act (P.L. 116-139)*. The bill also is aimed at improving the Accelerated and Advanced Payment Program by lowering the interest rate for loans to Medicare providers, reducing the per-claim recoupment percentage, and extending the period before repayment begins.

Additional measures include:

- Providing \$26.7 billion in emergency aid to public higher education institutions and \$7 billion in emergency aid to private institutions for “education and general expenditures (including defraying expenses due to lost revenue, reimbursement for expenses already incurred, and payroll) and grants to students for expenses directly related to coronavirus.”

Extending the suspension of payments for federal student loans, interest accrual, and interest capitalization through September 30, 2021. Ten thousand dollars of loan forgiveness on all federal and privately held loans for economically distressed borrowers would be provided.

- Available through September 2024, \$4.7 billion would be invested for the National Institutes of Health to prevent, prepare for, and respond to the coronavirus, including \$3 billion designated for offsetting the costs related to reductions in lab productivity as a result of the pandemic.
- Increasing Federal Medical Assistance Percentage payments to state Medicaid programs by a total of 14%, starting July 1, 2020, through June 30, 2021.

Republican opposition indicates that the legislation already is considered dead on arrival in the Senate. A major concern is that money will go to states that have a long history of mismanaging their own respective finances. Senate Republicans have expressed interest in requiring that liability protection be included for businesses and academic institutions. Otherwise, they believe there is little guarantee that the unemployed will be able to return to their jobs and that normal functions on the nation’s campuses will be resumed any time soon. Some members of the G.O.P. also would prefer that states and local governments be given much more flexibility regarding how they can use existing relief money for operating expenses. The gradual relaxation of lockdown requirements by many jurisdictions around the U.S. will produce results about the spread of the disease and its lethality that may influence any future legislation, which possibly could be enacted into law.

2020 ASSOCIATION CALENDAR OF EVENTS

June 12, 2020—ASAHP Webinar on Discussion Panel with Educational Accreditors

June 26, 2020—ASAHP Webinar on Incorporating Telehealth into Student Training

October 28-30, 2020—ASAHP Annual Conference in Long Beach, CA **Cancelled**

HEALTH REFORM DEVELOPMENTS

The Patient Protection and Affordable Care Act of 2010, also known as the Affordable Care Act (ACA) and Obamacare, has remained intact for the most part since its inception. In the process of doing so, it has made it possible for millions of Americans to obtain health insurance coverage who previously lacked it. A significant feature of this legislation was a requirement that insurance companies had to allow coverage for all individuals regardless of any preexisting health conditions, which previously had led to their being denied such protection.

Along the way, there were setbacks for the law that have occurred over the decade. Seventeen months after the ACA's enactment, the HHS Secretary announced that the *Community Living Services and Supports (CLASS) Act*, which was meant to address the costs of long-term care, was abandoned because it was considered unsound financially. In 2017 as part of a successful attempt to overhaul U.S. tax law aimed at energizing the economy, Congressional Republicans were able to zero out the individual mandate penalty. That occurrence led to a claim that once the mandate was stripped of its penalty for not purchasing health insurance, this provision no longer was enforceable and could not be considered as being constitutional.

An extension of that line of reasoning subsequently led to a conclusion that since this essential component of the Affordable Care Act was eliminated, then the entire law now should be struck down. Whether or not such an event will occur has yet to be resolved in the courts. ACA opponents in Congress also were successful in repealing the health insurance tax beginning in 2021, along with the so-called Cadillac tax on beneficiaries who have expensive insurance policies, and the medical device tax beginning in 2020. A problem is that revenue from these taxes was intended to cover the costs of expanding health insurance coverage under the law.

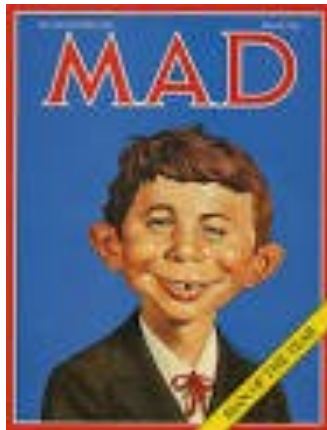
A centerpiece of the ACA was the formation of accountable care organizations (ACOs) in the Medicare program. As described in the April 2020 issue of this newsletter, results of a survey conducted that month by the National Association of ACOs (NAACOS) indicate that these entities are highly concerned about the effects of COVID-19 on their organizations. A possibility is that many respondents in risk-based models reported they are likely to quit the ACO program to avoid financial losses stemming from the pandemic. Apart from legislative and judicial battles, this example demonstrates how unfavorable economic conditions also can influence the outcome envisioned by Congress in 2010.

Medicaid Program In A Time Of COVID-19

Just as the recent pandemic has the potential to have a negative impact on the Affordable Care Act, it also can result in positive developments. An example involves the federal-state Medicaid program, which is considered to be countercyclical in nature. When the economy heads south, which it did quite dramatically causing millions of workers to become unemployed and advised to stay locked down in their homes. A great many of these individuals lost their health insurance coverage as a result. An option for them is to seek to enroll in Medicaid. Prior to the appearance of COVID-19, many states around the nation already were financially strapped because of an existing burden that compels them to meet rising program costs at the expense of being forced to reduce spending in other important categories, such as providing funds for higher education.

Just as health spending undergoes an increase, state income tax revenues derived from workers is decreased, along with taxes on restaurants and other venues where these employees worked and the general public patronized. Fortunately, the federal government has come to the rescue. A form of aid is represented by the *Families First Coronavirus Response Act (P.L. 116-127)* that authorized a 6.2% increase in the federal match rate (retroactive to January 1, 2020) available if states meet certain "maintenance of eligibility" requirements. Provisions include two weeks (up to 80 hours) of paid sick leave at the employee's regular rate of pay when quarantined and/or experiencing COVID-19 symptoms and seeking a medical diagnosis; or the same amount of paid sick leave because an employee is unable to work because of a bona fide need to care for an individual subject to quarantine or to care for a child under the age of 18.

DEVELOPMENTS IN HIGHER EDUCATION



Quid, Me Anxius Sum?

A source of entertainment for many readers over the decades is *Mad* magazine. With its covers graced by the image of **Alfred E. Neuman**, a gap-toothed lad with a moronic grin plastered on his face whose motto that signified an intellectual absence of any curiosity was “Quid Me Anxius Sum?” (What, me worry?), his visage calls to mind a fairly common reaction to a series of decisions this month by government jurisdictions around the U.S. that led to reducing lock-down restrictions sparked by the COVID-19 pandemic. May 16, 2020 marked the official opening of beaches on the Outer Banks, NC. A cursory inspection by your *TRENDS* newsletter’s occasionally intrepid editor of the passing pageant in the town of Kill Devil Hills failed to reveal a single individual wearing a mask or practicing social distancing. Instead, young (including toddlers) and old alike gleefully cavorted in sand and surf, apparently blissfully unaware of the purported dangers posed by the presence of the invisible coronavirus.

A photo taken on May 7, 2020 revealed a tightly packed group of students celebrating graduation outside a home in Boulder, CO *sans* masks and social distancing. It is likely that similar festivities have taken place around the nation. Refusal to abide by public health recommendations aimed at preventing the spread of infectious disease provides a hint of what might transpire on college and university campuses if a decision is made to reopen them for the fall semester. Refusing to allow students to return in the name of sound health policy implementation could have consequences that will be nothing short of catastrophic for some institutions that are teetering financially. Meanwhile, a paramount concern that cannot be defined with any exactitude is the probability that the coronavirus will return even more forcefully this autumn than what characterized its highly robust appearance earlier this year.

Distribution Of Coronavirus Stimulus Funding To Colleges And Universities

The *Coronavirus Aid, Relief, and Economic Security (CARES) Act* establishes and funds the Higher Education Emergency Relief Fund (HEERF). Institutions of higher education are directed to use no less than 50% of funds received under Sections 18004(a)(1) and 18004(c) of the law to provide emergency financial aid grants to students for expenses related to the disruption of campus operations due to coronavirus, such as food, housing, course materials, technology, health care, and childcare. This economic rescue package enables \$6 billion to be provided to colleges and universities, but subsequent guidance from officials at the U.S. Department of Education indicates that money can go only to students who qualify for federal financial aid, i.e., U.S. citizens and some legal permanent residents. Although the law has no explicit restrictions on which students could receive the emergency grants, individuals who are protected under the Deferred Action for Childhood Arrivals (DACA) program will be excluded.

The Department of Education on May 21, 2020 produced an updated statement on its guidance portal, indicating that at “guidance documents lack the force and effect of law.”

QUICK STAT (SHORT, TIMELY, AND TOPICAL)

Births: Provisional Data For 2019

A report from the National Center for Health Statistics (NCHS) in May 2020 reveals that the provisional number of births for the U.S. in 2019 was 3,745,540, down 1% from 2018. The general fertility rate was 58.2 births per 1,000 women aged 15–44, down 2% from 2018 to reach a record low for the U.S. The total fertility rate was 1,705.0 births per 1,000 women in 2019, down 1% from 2018 to reach another record low for the nation. Birth rates declined for nearly all age groups of women under 35, but rose for women in their early 40s. The rate for women aged 35–39 was essentially unchanged in 2019. The birth rate for teenagers aged 15–19 declined by 5% in 2019 to 16.6 births per 1,000 females; rates declined for both younger (aged 15–17) and older (aged 18–19) teenagers. The cesarean delivery rate decreased to 31.7% in 2019; the low risk cesarean delivery rate decreased to 25.6%. The pre-term birth rate rose for the fifth year in a row to 10.23% in 2019.

Effects Of The COVID-19 Pandemic On Routine Pediatric Vaccine Ordering And Administration

The *Morbidity and Mortality Report* from the CDC on May 15, 2020 shows that Vaccine Tracking System data indicate a notable decrease in orders for Vaccines for Children Program (VFC)-funded, ACIP-recommended non-influenza childhood vaccines and for measles-containing vaccines during period two (1/6/20-4/19/20) compared with period one (1/7/19 and 4/21/19). The decline began the week after the national emergency declaration by President **Donald Trump** on March 13, 2020. Similar declines in orders for other vaccines also were observed. The ongoing COVID-19 pandemic is a reminder of the importance of vaccination. The identified declines in routine pediatric vaccine ordering and doses administered might indicate that U.S. children and their communities face increased risks for outbreaks of vaccine-preventable diseases. Parental concerns about potentially exposing their children to COVID-19 during well-child visits might contribute to the declines observed.

HEALTH TECHNOLOGY CORNER

Non-Invasive And Reversible Modulation Of Neuronal Activity To Diagnose And Treat Brain Disorders

About one in eight individuals over the age of 12 take antidepressants for mental disorders, such as depression and anxiety. A quarter of those have done so for 10 years or more according to a 2017 study by the National Center for Health Statistics and the use of antidepressants increased 65% from 1999 to 2014. New research indicates that treatments of brain disorders possibly may not have to require drugs or invasive surgery at all, just sound waves. As reported in a paper that was published on May 20, 2020 in the journal *Science Advances*, low-intensity ultrasound can be applied to the brain non-invasively to modulate neural activity with spatial specificity superior to other non-invasive methods, such as transcranial electrical or magnetic stimulation. Sound waves of high frequencies (ultrasound) have shown promise in this respect, combining the ability to modulate neuronal activity with sharp spatial focus. No pain, discomfort, or surgical technique are involved.

Cracking Nature's Most Common Chemical Bond To Improve Drug Effectiveness

As reported in the May 15, 2020 issue of the journal *Science*, the most common chemical bond in the living world -- that between carbon and hydrogen -- has long resisted attempts by chemists to crack it open, thwarting efforts to add new exciting features to old carbon-based molecules. Now, after nearly 25 years of work by chemists at the University of California, Berkeley, those hydrocarbon bonds, two-thirds of all the chemical bonds in petroleum and plastics, have yielded fully, creating a possibility of synthesizing a large range of novel organic molecules, including drugs based on natural compounds. A potential application is altering natural compounds to improve them. Biologics, i.e., organic molecules, such as proteins, used as drugs also could be altered with this reaction to improve their effectiveness.

AVAILABLE RESOURCES ACCESSIBLE ELECTRONICALLY

What COVID-19 Epidemiologic Models Can And Cannot Tell Us

Epidemiologic models are critical planning tools for policymakers, clinicians, and public health practitioners. Infectious disease modeling is an expansive field with a long history, encompassing a range of methods and assumptions that are not necessarily directly comparable, or even designed for the same purpose. An article published on May 15, 2020 in the *New England Journal of Medicine* identifies the following questions to ask about model results: (1) What is the purpose and time frame of this model? For example, is it a purely statistical model intended to provide short-term forecasts or a mechanistic model investigating future scenarios? These two types of models have different limitations; (2) What are the basic model assumptions? What is being assumed about immunity and asymptomatic transmission, for example? How are contact parameters included? (3) How is uncertainty being displayed? For statistical models, how are confidence intervals calculated and displayed? Uncertainty should increase as we move into the future. For mechanistic models, what parameters are being varied? Reliable modeling descriptions usually will include a table of parameter ranges to check to see whether those ranges make sense; (4) If the model is fitted to data, which data are used? Models fitted to confirmed COVID-19 cases are unlikely to be reliable. Models fitted to hospitalization or death data may be more reliable, but their reliability will depend on the setting; and (5) Is the model general, or does it reflect a particular context? If the latter, is the spatial scale — national, regional, or local — appropriate for the modeling questions being asked and are the assumptions relevant for the setting? Population density will play an important role in determining model appropriateness, for example, and contact-rate parameters are likely to be context-specific. The article can be obtained at

<https://www.nejm.org/doi/pdf/10.1056/NEJMp2016822?articleTools=true>.

Supporting Student Health And Mental Well-Being

Recent surveys of college and university presidents show there is real concern about how the disruption of in-person classes will affect students' already-rising rates of anxiety and depression. The *April 2020 Pulse Point Survey* by the American Council on Education (ACE) of these administrators suggests that a little over a third of presidents surveyed plan on making more investments in student mental health due to COVID-19. The brief, "*Mental Health, Higher Education, and COVID-19: Strategies for Leaders to Support Campus Well-Being*" reflects on data and offers examples and resources to help guide decision-making, including ways that leadership can adopt an equity lens with each mental health strategy. It also identifies three major strategies for leaders to consider as they respond to support student mental health during COVID-19 and beyond: (1) Ensure that communication to students is consistent, caring, and clear; (2) Consider the mental health and well-being of all campus community members, including faculty and staff who are on the front lines of serving and supporting students; and (3) Inform decision-making through assessments. The brief can be obtained at <https://www.acenet.edu/Documents/Mental-Health-Higher-Education-Covid-19.pdf>.

Caregiving In The United States 2020

A report from AARP on the state of caregiving in the U.S. finds that nearly one in five adults is an unpaid caregiver for an adult with health or other functional problems, up from around one in six in 2015. Nearly a quarter of individuals caring for more than one person indicate they are having difficulty coordinating care; that they're caring for someone with Alzheimer's disease or dementia; or that their health has gotten worse as a result of their caregiving duties. The report can be obtained at https://www.aarp.org/ppi/info-2020/caregiving-in-the-united-states.html?CMP=RDRCT-PPI-CAREGIVING-042920&utm_source=STAT+Newsletters&utm_campaign=a4983a1567-MR_COPY_01&utm_medium=email&utm_term=0_8cab1d7961-a4983a1567-149940042.

RETHINKING THE “BENCH” AND “BEDSIDE” DICHOTOMY

Seventy-five years ago, **Vannevar Bush**, director of the U.S. Office of Scientific Research and Development, submitted his landmark report “*Science, the Endless Frontier*” to President **Franklin D. Roosevelt**. Along with sweeping structural and operational recommendations, the report elevated a key conceptual dichotomy that would have profound consequences for the future of American science: the distinction between ‘basic’ research and ‘applied’ research, thereby setting the tone for modern U.S. science policy. Concepts of ‘basic’ research and ‘applied’ research loosely can translate to the notions of ‘bench’ research and ‘bedside’ research. Yet, the road from fundamental biological insight to patient care (or vice versa) can be strewn with many obstacles that hamper the efforts of even the most qualified clinicians. Overcoming these roadblocks demands that the many aspects of the life sciences–medicine continuum be addressed.

According to a paper appearing in the April 2020 issue of the journal *Nature Medicine*, Congress subsequently approved funding for the Medical Scientist Training Program (MSTP) to bridge gaps between the domains of ‘basic’ research and ‘applied’ research in the biomedical context, effectively creating a new type of career: the dual-degree, MD/PhD physician-scientist. In the nearly 60 years since the creation of the MSTP, much has been learned about the complex terrain between bench and bedside and the institutional ingredients needed to realize this vision. By 2016, it was being argued that research activities might be understood better in the context of ‘discovery–invention cycles’ rather than a basic/applied dichotomy. Building on a wealth of historical knowledge, this argument holds that research exists in virtuous cycles in which some periods are dominated by knowledge creation (discovery) and others are dominated by the creation of new tools or processes (invention). A suggestion is that a boundary be drawn, and even then, a fluid one between research and development, rather than between basic sciences and applied sciences. Instead, research should be thought of as an ‘unscheduled activity’ in the pursuit of new knowledge and inventions. Development is viewed as a ‘scheduled activity’ directed at converting the fruits of research into new products and services.

ADDRESSING THE 60-30-10 CHALLENGE

Modern healthcare systems may be characterized as possessing a numbers problem: specifically, 60, 30, and 10. Despite all the resourcefulness and efforts of the past 30 years, the healthcare delivery cart is viewed as remaining locked in a debilitating underperformance rut, according to a paper reported in the periodical *BMC Medicine* on May 4, 2020. Care that adheres to guidelines hovers at 60% as shown by large empirical studies of multiple conditions in adults and children in the USA, England, and Australia. Some 30% of care is waste, duplication, or of low value, according to several authoritative sources including the Organisation for Economic Co-operation and Development (OECD), for which considerable expenditure cannot be justified. Many studies also have documented how iatrogenic harm or adverse events befall at least 10% of patients globally.

Headline numbers in health care persist and may become worse when taking into consideration everything that is flowing through the health innovation pipeline. Advances in precision medicine, genomics, new generation drugs, artificial intelligence, and brain sciences all are in various stages of development or implementation in health care, with the potential to do both good and harm to the system. If the 60-30-10 challenge represents a strong signal that the system is not fit currently for purpose, how will it cope with an avalanche of these advanced technologies? New evidence as it materializes has the potential to deliver new cures and to save and extend lives, but if not adopted effectively, or across-the-board, then the proportion of evidence-based care could fall, not rise. New technologies also increase the complexity of care and add more risk. If they do not provide an adequate return on investment may add more waste. They also could introduce more potential for increased iatrogenic harm. The authors conclude that the 60-30-10 challenge is impeding progress.