

MAY 2021

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## MINISCULE CREATURES OF HUGE IMPORTANCE

Each issue of this newsletter typically focuses on important topics, such as health care disparities and inequities that have disadvantageous impacts on individual and community health status in the United States. Occasionally, however, efforts are made to apprise readers of other developments that are not necessarily viewed as pertaining directly to the health sphere, but still have considerable potential to influence health outcomes.

Although comparatively small in number compared to other members of the animal kingdom, such as insects, human beings have exerted gargantuan effects on the health of the planet earth and its various assortment of inhabitants of vertebrates and invertebrates. The current geological age is known as the *Anthropocene*, a period during which human activity has been the dominant influence on climate and the environment. Increasingly, data are being generated around the world indicating a decline in biomass involving insects as a result of factors, such as habitat loss occurring when humans move to previously uninhabited locales and chronic exposure to pesticides. Insects play a vital role in a terrestrial food web that affects many species of birds, bats, reptiles, amphibians and fish, while also performing essential functions involving pollination, pest control, and nutrient recycling. A danger is considered to exist in the possibility that terrestrial and freshwater ecosystems will collapse without adequate numbers of insects.

The widespread adoption of artificial lighting at night (ALAN) is considered a growing threat to biodiversity in general and to nocturnally active insects in particular. Recent advances in external lighting technology, especially the increasing adoption of broad spectrum 'white' LEDs, suggest that impacts of ALAN on natural systems are likely to increase. The entire March 2021 issue of the journal *Insect Conservation and Diversity* is devoted to some recent investigations addressing the effects of ALAN on insects and their conservation. Approximately one-fifth of earth's land surface experiences appreciable levels of ALAN to illuminate roads, buildings, and other infrastructure. Although ALAN has enabled humans to increase the duration and diversity of work and leisure activities that would otherwise be curtailed by night-time darkness, it has radically altered the nocturnal environment for many species of animal and plant life by disrupting the natural daily and seasonal light cycles.

Also, an article published on January 26, 2021 in the journal *Conversation and Science* discusses how an ever-growing industry with high densities of wind turbines may have long-lasting effects on insects and associated trophic links if negative impacts on these creatures are not considered during the erection and operation of this machinery. After collision, most insects leave a layer of organic detritus on the leading edge of blades, thereby disrupting the laminar airflow, causing a significant drop in power production. An interesting aspect is that energy production from renewable sources is increasing worldwide in an effort to reduce CO2 emissions. Although labeled as environmentally friendly, wind renewable energy sources are in direct conflict with biodiversity goals regarding insect conservation.



## A MAJOR FOCUS ON GOVERNMENT SPENDING

Now that the current fiscal year is going to draw to a close on September 30, greater attention is being paid to Congressional appropriations. The House Appropriations Committee plans to mark up the 12 annual spending bills for fiscal year 2022 in June, ahead of floor votes that are scheduled for July. Recent years have witnessed a failure to complete all necessary business pertaining to appropriations by October 1. If that pattern repeats itself this year, then one or more stopgap spending measures will have to be relied upon as a means of avoiding a federal government shutdown of the federal government.

A new twist in the present arrangement goes to prove that many old and highly cherished notions truly die rather hard. While certain revered ideas can languish for lengthy periods of time, they can reappear with renewed vigor as evidenced by the rebirth of “earmarks,” an excellent illustration of a time-honored approach of dispensing funds appropriated by Congress. Earlier, wags with a penchant for unseasonable japey could hardly wait for former Democrat Senator **William Proxmire** from Wisconsin to issue his *Golden Fleece Award* every month between March 1975 and December 1988. The purpose of this dubious honor was to acknowledge “wasteful, ridiculous or ironic use of the taxpayers’ money.” A famous example was a \$190 million bridge to a sparsely populated island in Alaska at a cost of \$13,786 per local inhabitant.

House Democrats recently unveiled a plan to restore earmarks under the new heading, “Community Project Funding,” thus ending a decade-long policy that forbade the practice. A proposal released by **Rosa DeLauro** (D-CT), Chairwoman of the House Appropriations Committee, would allow the inclusion of money in annual spending bills to benefit specific projects with the amount capped at 1% of discretionary spending. Lawmakers would be permitted to submit a maximum of 10 project requests, along with evidence to justify their requests from their communities. Funds could not be allocated, however, to benefit for-profit recipients. Joining in this renewal effort, the House Republican Conference has voted to restore earmarks and Senate appropriators also have released their plan to jettison the present ban.

Apart from the important work of introducing and passing necessary legislation, another key function performed on Capitol Hill is to conduct hearings. The Senate Committee on Health, Education Labor & Pensions did so on May 11, 2021. The event on “*Efforts to Combat COVID-19*” featured testimony by **Anthony Fauci**, Director, National Institute of Allergy and Infectious Diseases; **David Kessler**, Chief Science Officer at the U.S. Department of Health and Human Services; **Rochelle Walensky**, CDC Director; and **Peter Marks**, Director of the Center for Biologics Evaluation and Research at the Food & Drug Administration. The following day, a hearing on the topic of “*COVID-19 Variants and Evolving Research Needs*” was held by the Subcommittee on Investigations and Oversight of the House Committee on Science, Space and Technology. Testimony was provided by experts from Columbia University, Yale University, Johns Hopkins University, and the Argonne National Laboratory.

Statements made at both hearings can be obtained from the websites of these committees in print and video formats.

### 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

As noted in the *Quick STAT* page of this issue of the newsletter, in calendar year 2020, the Medicare program had a total of 62.8 million enrollees. As described in an article published on April 27, 2021 in *JAMA Network Open*, overuse is defined as the delivery of tests and procedures that provide little or no clinical benefit, are unlikely to have an impact on clinician decisions, increase health care spending without improving health outcomes, or risk patient harm in excess of potential benefits. Estimates suggest that overuse contributes \$75.7 billion to \$101.2 billion to wasted U.S. health care spending annually.

Results of a cross-sectional study involving 1,325,256 services performed at 3,351 hospitals show that measurements of low-value services using Medicare claims data can be applied to individual hospitals to compare their overall rates of overuse. The analysis revealed differences in overuse by hospital characteristics such as teaching status, region, and nonprofit status. Researchers found that hospitals in the South, for-profit hospitals, and nonteaching hospitals were associated with the highest rates of overuse. Investigations of this nature are critical to developing remedies to curb unnecessary spending. A steady increase in the number of aged beneficiaries who become eligible to participate in the Medicare program means that a corresponding growth will occur in the amount of health services that must be provided for them. Constant efforts are needed to ensure that an ever growing amount of expenditures for such care is used effectively and appropriately.

### **Biden Administration Begins Reversing Policies Established By The Previous Administration**

A common practice in recent years is for an incoming U.S. presidential administration to review health policies instituted by its predecessor administration and decide to reverse them. Along lines of efforts to prevent unnecessary spending in the Medicare program, the Biden administration decided to freeze an effort implemented by the Trump administration to create a new Medicare coverage and reimbursement pathway for “breakthrough” medical devices as its term drew to a close. A final rule known as the Medicare Coverage of Innovative Technology (MCIT) pathway that was published on January 14, 2021 in the *Federal Register* would have established a mechanism to provide national Medicare coverage for a period of four years after the date of U.S. Food & Drug Administration approval. The final ruling was to become effective on March 1 of this year. An argument opposed to implementing the rule is based on an assessment by the Biden team that the proposed accelerated pathway fails to protect patients adequately or ensures that such breakthrough devices are effective or appropriate for the Medicare population.

Another illustration of an attempt to erase policies established by the preceding administration is that the Biden group will enforce legal protections against discrimination for gay and transgender patients seeking health care under the Affordable Care Act (ACA). During the Trump administration, a policy was implemented that aimed to define the scope of sex discrimination under the health law more narrowly than what was prescribed during the Obama Administration. The most recent ruling is based on a Supreme Court decision in 2020 that allows in a more expansive way the U.S. Department of Health & Human Services to interpret the antidiscrimination section of the ACA by forbidding bias “on the basis of race, color, national origin, sex, age or disability.”

### **American Rescue Plan Act And The Affordable Care Act**

Congress passed the *American Rescue Plan Act (ARPA)* using what is known as the “budget reconciliation process” that requires only a Senate majority rather than the sixty votes normally needed to overcome a filibuster. **President Biden** signed it into law on March 11, 2021. The aim of this legislation is to enable a temporary expansion of the ACA’s premium tax credits and to allow increases in federal financial incentives for states that have not yet done so to expand their Medicaid programs to low-income adults. A recent broadened enrollment period has resulted in an increase in the number of beneficiaries wanting to participate in this program. ARPA also provides incentives for the twelve states that have not yet expanded their Medicaid programs to all adults with incomes up to 138% of the federal poverty level. Meanwhile, the fate of the ACA will depend on a decision that soon will be made by the U.S. Supreme Court on a case that has attracted enormous interest in health policy circles.

## DEVELOPMENTS IN HIGHER EDUCATION

The arrival of the coronavirus pandemic resulted in college and university campuses having to begin shutting down in March 2020. Many were able to do so without suffering painful losses of valuable forms of income derived from fees associated with tuition, dormitory living, provision of food services, and a variety of activities, such as rental of campus property in the summer and sales of tickets and concessions for football and basketball games. Not every institution was so fortunate, however, and have had to offset reductions in revenue by laying off personnel involved in teaching and administration. Worst of all, some smaller schools without endowments are confronted with the danger of having to close their doors permanently.

One means of offsetting a decline in revenue was to substitute in-class learning with instruction that is provided online. Schools that already offered courses in that manner were able to continue doing so without having to make any major adjustments. Institutions that were not in a similar position had to convert a great many courses that formerly were furnished exclusively in classrooms. Not all students and their families believed that these new products were valuable substitutes and they consequently have been unwilling to pay for them.

Another consideration is more of a downstream nature. Since March 2020, many students throughout the U.S. at elementary and high school levels have not been in classrooms for the latter part of the 2019-2020 academic year and almost all of the 2020-2021 school year. Prior to the pandemic, some students admitted to college typically are academically underprepared and must be provided with remediation services. Students who already were in their third year of high school in spring 2020 are graduating in virtual ceremonies either this month or will do so in June. Many of them may be even less prepared to enroll in college than previous cohorts of students that did so before the pandemic struck the nation.

### **Student Loan Tax Elimination Act**

A chronic problem for many students and their families is mounting educational debt. Individuals at the postgraduate level who attend MBA programs, law schools, and medical schools may assume mountains of such debt, but they are in a favorable and enviable position to move into high paying jobs upon graduation. Less fortunate are those students who complete their formal education at the baccalaureate level with majors that lead to few, low remunerative forms of employment. Even worse off are student who drop out of school without ever completing a degree program, but who still managed to borrow substantial amounts of money for education purposes.

A common aspiration expressed by many Democrat candidates who competed to be nominated by their party for the 2020 presidential election was to address the problem either by forgiving all or a portion of this educational debt. A step in that direction is a bipartisan bill introduced on March 18, 2021 in Congress, the *Student Loan Tax Elimination Act (S. 847)*, a measure designed to eliminate origination fees on all federal direct student loans disbursed on or after March 27, 2020. Presently, by taking as much as 4% of the proceeds of a federal student loan, a strong influence is placed on students regarding their decision whether to pursue and complete a degree program.

Similar legislation was introduced on June 3, 2019. Supporters of the bill view origination fees as reducing the amount of loan dollars disbursed to borrowers by 1% percent for Direct Stafford Loans and 4% for Direct PLUS Loans). This levy is considered to create confusion among students and increase costs for borrowers, who are responsible not only for repaying the withheld amount, but also the interest accruing on that amount. The result can be hundreds or thousands of additional dollars owed, depending on loan type, loan amount, and program length.

## QUICK STAT (SHORT, TIMELY, AND TOPICAL)

### **Emergency Departments For Bicycle-Related TBIs: United States, 2009-2018**

Bicycling leads to the highest number of sport and recreation–related emergency department (ED) visits for traumatic brain injuries (TBIs) in the United States. Because bicycling continues to grow in popularity, primarily among U.S. adults, examining the strategies that mitigate the risk for TBI is important. According to the May 14, 2021 issue of the *Morbidity and Mortality Weekly Report*, CDC analyzed data from the National Electronic Injury Surveillance System-All Injury Program (NEISS-AIP) to determine the incidence of EDs for bicycle-related TBIs during 2009–2018. An estimated 596,972 ED visits for bicycle-related TBIs occurred in the United States during the study period. Rates of ED visits were highest among adult males (aged  $\geq 18$  years) and among children and adolescents aged 10–14 years during 2009–2018. Overall, the rate of ED visits for bicycle-related TBIs decreased by approximately one half (48.7%) among children and by 5.5% among adults.

### **Medicare, Medicaid, Children’s Health Insurance Program Enrollment: 2020**

Government involvement in the financing of health care is substantial. According to recent estimated average monthly data from the Centers for Medicare & Medicaid Services, in calendar year 2020: Medicare had a total of 62.8 million enrollees among whom 54.5 million are aged and 7.3 million are disabled. An additional breakdown shows that 37.7 million beneficiaries are enrolled in Original Medicare and the rest are in the Medicare Advantage Plan and the Prescription Drug Plan. Medicaid, a jointly administered federal-state plan, had a total of 76.5 million enrollees in Fiscal Year 2020. Major groups include: 6.4 million aged individuals, 11.0 blind and disabled persons, and 28.9 children—the largest single group numerically. Another 7.4 million individuals are enrolled in the Children’s Health Insurance Program (CHIP) on average each month based on the latest available data.

## HEALTH TECHNOLOGY CORNER

### **Ventilating The Rectum To Support Respiration**

The coronavirus pandemic has overwhelmed the clinical need for ventilators and artificial lungs, resulting in a critical shortage of available devices and endangering patients’ lives worldwide. As described in an article published on May 14, 2021 in the journal *Med*, inspired by organisms such as catfish that use intestinal air breathing, researchers at Tokyo Medical and Dental University show the effectiveness of an enteral ventilation approach in attaining systemic oxygenation in both rodent (e.g., mice) and porcine (e.g., pig) models. Intra-rectal delivery of a liquid form of O<sub>2</sub> known as conjugated perfluorocarbon, a compound historically used in clinics for liquid ventilation through airway administration, is highly tolerable and efficacious in ameliorating severe respiratory failure. By repurposing the distal gut as an accessory breathing organ, enteral ventilation therapy offers an alternative paradigm as an adjunctive means to patients who are in critical need of respiratory support.

### **Opening A Window Into Alzheimer's Disease**

According to new research by scientists at the UCSF Weill Institute for Neurosciences, retinal scans can detect key changes in blood vessels that may provide an early sign of Alzheimer's. An article published on May 11, 2021 in the journal *Alzheimer's & Dementia: Diagnosis, Assessment & Disease Monitoring* offers some important insights into how one of the most common Alzheimer's risk genes contributes to the disease. Researchers have indicated that the most prevalent genetic risk for Alzheimer's disease is a variant of the APOE gene, known as APOE  $\epsilon 4$ . Although it is not entirely clear how this variant increases risk of brain degeneration, it does appear to do so and the risk is modified by sex, race, and lifestyle. The results of the study reported in this article suggest that APOE  $\epsilon 4$  affects capillary health in humans and that retinal capillary measures could serve as surrogates for brain capillaries, providing an opportunity to study microangiopathic contributions to neurodegenerative disorders directly in humans.

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## OBTAINABLE RESOURCES

### Improving The Utility Of Evidence Synthesis In The Face Of Insufficient Evidence

Healthcare decision makers strive to operate on the best available evidence. The *Agency for Healthcare Research and Quality Evidence-based Practice Center (EPC) Program* aims to support health care decision makers by producing evidence reviews that rate the strength of evidence. The evidence base, however, is often sparse or heterogeneous, or otherwise results in a high degree of uncertainty and insufficient evidence ratings. A workgroup comprising EPC Program members convened throughout 2020. Its members conducted interactive discussions considering information from three data sources: a literature review for relevant publications and frameworks; a review of a convenience sample of past systematic reviews conducted by the EPCs; and an audit of methods used in past EPC technical briefs. Researchers concluded that throughout early scoping, protocol development, review conduct, and review presentation, authors should consider five possible strategies to supplement potential insufficient findings of benefit or harms. When there is no evidence available for a specific outcome, reviewers should use a statement such as "no studies" instead of "insufficient." The main reasons for insufficient evidence rating should be explicitly described. A White Paper can be obtained at [Methods White Paper: Improving the Utility of Evidence Synthesis for Decision Makers in the Face of Insufficient Evidence \(ahrq.gov\)](#).

### Implementing High-Quality Primary Care

High-quality primary care is the foundation of the health care system. It provides continuous, person-centered, relationship-based care that considers the needs and preferences of individuals, families, and communities. Without access to high-quality primary care, minor health problems can spiral into chronic disease, chronic disease management becomes difficult and uncoordinated, visits to emergency departments increase, preventive care lags, and health care spending soars to unsustainable levels. Unequal access to primary care remains a concern, and the COVID-19 pandemic amplified pervasive economic, mental health, and social health disparities that ubiquitous, high-quality primary care might have reduced. Primary care is the only health care component where an increased supply is associated with better population health and more equitable outcomes. For this reason, primary care is a common good, which makes the strength and quality of the country's primary care services a public concern. *Implementing High-Quality Primary Care: Rebuilding the Foundation of Health Care* puts forth an evidence-based plan from the *National Academies Press* with actionable objectives and recommendations for implementing high-quality primary care in the United States. The implementation plan of this report balances national needs for scalable solutions while allowing for adaptations to meet local needs. The document can be obtained at [Login | The National Academies Press \(nap.edu\)](#).

### Primary Care In The COVID-19 Pandemic

In a new report edited by authors from the Harvard Medical School Center for Primary Care, produced with support from the Milbank Memorial Fund and the CareQuest Institute for Oral Health, dozens of leading thinkers document and analyze the trends in primary care over the course of the pandemic, and make recommendations to primary care clinical team members, health care industry leaders, and policy experts. The authors: describe access to high-quality primary care during the COVID-19 pandemic in the United States and other parts of the world; determine opportunities for accelerating transitions to new payment and delivery models; and identify the care strategies, including anti-racist policies, that can best advance primary care equity. Care strategies focused on vulnerable populations can be adapted to logistical challenges if providers focus on an integrated experience delivered across multiple diverse disciplines through the same clinic infrastructure. The perspectives in this report are, therefore, ultimately optimistic, demonstrating that the resilience of populations to this pandemic and future ones can be bolstered by flexible, coordinated, and dedicated primary care providers. The report can be obtained at [Primary Care in the COVID-19 Pandemic \(milbank.org\)](#).

## IMPACT OF MARRIAGE, DIVORCE, AND WIDOWHOOD ON HEALTH STATUS

Marriage, divorce, and widowhood each represent significant events in the lives of anyone who has ever been married, but they especially are prevalent among the older population. Older adults have rich marital histories that reflect both partnership and loss over their lifetime, according to a U.S. Census Bureau report entitled, *“Number, Timing, and Duration of Marriages and Divorces: 2016”* that became available on April 22, 2021. Divorce is not the only marital disruption that older adults face, however, because they also disproportionately constitute a large percentage of those who become widows or widowers in a given year. Among adults age 15 or older who became widowed in the preceding 12 months, 71% of men and 69% of women were 65 or older, although this age group comprises only 19% of all individuals in the 15 or older age group. Widowhood is particularly common among older women compared to older men due to differences in life expectancies. Women on average live longer than men. Among those 75 years or older who had ever married, 58% of women and 28% of men had experienced the death of a spouse in their lifetime, making this stage of life particularly difficult. The proportion of individuals who currently are widowed is relatively lower than for those widowed at one point because some respondents who lost a spouse eventually remarried, becoming "currently married" instead of "currently widowed." Nonetheless, differences between the sexes persist among those 75 years or older: 54% of women and 20% of men were currently widowed at the time of interview.

Women in particular face major challenges in being able to live with independence and dignity as they age. With longer lives, higher rates of disability and chronic health problems and lower incomes than men on average, many women need long-term care services without having the resources to pay for them. Apart from their own health problems, some women also serve as primary providers of long-term care for an older relative. The vast majority of both paid formal long-term care workers and unpaid informal caregivers are women. Millions of older women cannot afford to pay for long-term care services because of low income. A major factor affecting income is marital status. Married couples have higher incomes than single persons. Older women are much more likely than older men to live alone, meaning that they have no other individual in their household to help with daily activities and pay for services to address unmet health and health-related social needs.

## COGNITIVE EPIDEMIOLOGY, INTELLIGENCE, HEALTH, AND DEATH

Cognitive epidemiology as a separate line of inquiry emerged in the early 2000s. Its purpose is to study how and why individual differences in intelligence (especially when measured in childhood or young adulthood) associate with later differences in health, illness, and death. An article published in the April 2020 issue of the journal *Nature Human Behaviours* examines how an understanding of the association between intelligence and health/mortality has been refined with the advent of new, population-scale data and genetic tools. The manuscript looks at the associations between intelligence and, in turn, all-cause mortality, specific causes of mortality, physical illnesses, and health-related biomarkers. Possible causes of the observed associations (education, health behaviors and literacy, and genetics), are not mutually exclusive.

Although the causes underlying the associations between intelligence and health/mortality remain an open question, research over the past decade has provided results and fingerposts for further progress. As a way of obtaining a clearer understanding, the authors discuss how intelligence relates to specific causes of death, diseases/diagnoses, and biomarkers of health through the adult life course. They examine the extent to which mortality and health associations with intelligence might be attributable to differences in education, other indicators of socioeconomic status, health literacy, and adult environments and behaviors. Finally, they discuss whether genetic data provide new tools to understand parts of the intelligence–health associations. Social epidemiologists, differential psychologists and behavioral and statistical geneticists, among others, contribute to cognitive epidemiology. Any advances that occur will do so by building on a common cross-disciplinary knowledge base.