Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Development Goals contexts. In 2012, the UN Human Rights Council called for including noma as an NTD given that noma shares important characteristics with NTDs. Influential global health organisations such as Médecins Sans Frontières were testifying during the consultations at the time.[4] It is only now, 10 years later, that these organisations, encouraged by a historic Resolution on oral health adopted by the World Health Assembly in May, 2021, and a draft WHO Global Strategy on Oral Health, are increasing their advocacy pushing for integration in the WHO NTD Road Map 2021–30.[5–7] The opportunities for advocacy, funding, research, and global visibility resulting from the classification of noma as an NTD would substantially boost political discourses and action.[8,9]

Historical experience from many countries where noma cases used to be observed shows that noma control or even elimination is possible, alongside with eliminating extreme poverty and improving living conditions. The umbrella of the global NTD community will also give noma survivors a louder voice as part of a larger civil society movement, given that impactful advocacy groups and networks for people affected by noma are not yet in place. Concerted global health efforts are required, using interdisciplinary thinking beyond clinical care, and involving social science, public health, anthropology, and other related sectors. WHO, the NTD and scientific communities, NGOs, advocates and governments are called upon to muster the political will to address the challenges of noma, including an effort to develop solid estimations of the global noma burden. It is long overdue for noma to enter the global health stage.

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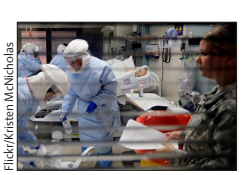
Infectious diseases compensation in the USA: the relative value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Infectious diseases, as a subspecialty of internal medicine, has endured despite predictions that it would become irrelevant in the antibiotic era. In fact, following numerous worldwide health threats, including SARS-CoV-2, HIV, Zika virus, Ebola virus, multidrug resistant bacteria, and now monkeypox, the need for infectious disease physicians has never been more evident. Despite this need, infectious disease compensation in the USA has not kept pace with the value of ID physicians. Although health-care expenditure has risen steeply,[1] only a small portion of that increase goes to physician salaries, and among subspecialists, infectious disease physicians have seen the smallest increase in compensation. Infectious disease salaries rank among the five lowest paid specialties in health care.[2] The main driver of this compensation imbalance lies in the reimbursement of activities associated with health care, which is a fee-for-service model that is driven mainly by work relative value units (wRVUs). wRVUs are mainly generated by face-to-face encounters and procedures, although the generation of wRVUs is not balanced through the different encounter types.

A high-complexity infectious disease consultation for an inpatient will take more than 1 h to complete, generating approximately 3–4 wRVUs, whereas reading electrocardiograms can generate approximately 12 wRVUs over the same timeframe. This example shows how the wRVU system puts non-procedural specialties at a substantial economic disadvantage. Lower compensation is one of the main reasons that fewer residents enter infectious disease fellowships than enter other internal medicine subspecialties, such as cardiology or gastroenterology. and why many infectious disease physicians suffer from burnout and leave the field.[3]

What added value does the infectious disease subspecialty contribute to deserve improved compensation? Infectious disease consultation has been shown to reduce in-hospital mortality by 19% and cost of stay by 41%.[4] This effect can be most appreciated in examples of patients with *Staphylococcus aureus* bacteraemia, where infectious disease consultation results in a 30–47% reduction in mortality,[5–7] and patients with Gram-negative bacteraemia, where early infectious disease consultation is associated with significant reduction in 30-day mortality.[8] Another value of infectious disease physicians lies in diagnosing conditions as not infectious in nature. Overdiagnosis of lower extremity cellulitis, for example, has been estimated to cost US$195–515 million annually in avoidable health-care spending in the USA.[9] Additionally, infectious disease physicians are instrumental in making crucial infectious diagnoses, such as epidural abscesses, where diagnostic delays lead to poor patient outcomes, some of which are borne out in malpractice lawsuits. If awarded, the average malpractice ruling stands at $5 million for each epidural abscess. Preventing a single lawsuit would pay the yearly salary of 25 infectious disease specialists at our institution! Moreover, the Centers for Medicare and Medicaid Services penalise readmissions and hospital-acquired infections by withholding reimbursement.[10] Many studies have shown improved use of antimicrobials and decreased incidence of health-care-associated infections as a result of antimicrobial stewardship and infection prevention programmes that are led by infectious disease physicians.[10] One study showed a 50% decrease in rates of health-care-associated infection, preventing up to 105 deaths in a 7-year period.[10] Although these efforts affect individual patients, services provided by infectious disease physicians have societal benefits that extend beyond the individual patient. Antibiotic stewardship efforts, resulting in the reduction of antibiotic resistance, affect the continuum of care from community to clinic and hospital to long-term care facilities. Infectious disease physicians provide crucial population-based leadership for infectious disease outbreaks and adherence to protocol guidelines.

The current compensation model can be compared with a bucket being filled by revenue from wRVUs generated by health-care services. Specialties with a heavy procedural element substantially contribute to filling the bucket, and thus garner a larger portion of the gains. Non-procedural clinical activities are central to preventing economic losses, in essence patching holes in the bucket. This prevention is a difficult metric to measure, but one that should be assessed to allow those specialists to share in the savings that their activities conserve. To achieve the goal of a fair market, and since it is not possible to capture the true value of the infectious disease specialty with wRVUs, infectious disease compensation should be decoupled from wRVUs. Value-based compensation, or even shared savings policies, should be introduced. As in all areas, a one-size-fits-all approach is seldom the answer, and physician compensation should not be different. It is time to realise that the current compensation model puts non-procedural specialties at a perilous disadvantage, and now is the time to make meaningful changes.

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Adding to the mantra: vaccines prevent illness and death, and preserve existing antibiotics

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For more on **future vaccines against bacterial pathogens** see https://www.who.int/teams/immunization-vaccines-and-biologicals/diseases

With rising incomes and the increased availability of antibiotics globally, per-capita consumption of antibiotics in middle-income countries is fast approaching the rates in high-income countries.[1] Antimicrobial resistance has emerged as a major source of morbidity and mortality worldwide, and now is estimated to cause more deaths than malaria or HIV/AIDS.[2] Existing and new vaccines could help avert a substantial proportion of current antibiotic use, and there is now considerable evidence linking vaccination with decreased use of antibiotics and averted cases of antimicrobial resistance.[3]

There is a substantial opportunity to expand coverage of existing vaccines to decrease antibiotic use. An example is pertussis, a disease that is rare in high-income countries. However, recent outbreaks of pertussis in populations with low vaccine coverage or waning immunity, or both, have required antibiotic treatment.[4] The estimated 24·1 million pertussis cases worldwide reported in 2014[5] required antibiotic treatment and, in some cases, antibiotic prophylaxis for susceptible family members. In addition, many of the estimated 160 700 deaths could have been averted.

Vaccines to prevent infection with *Bordetella pertussis* have been combined with vaccines against *Corynebacterium diphtheriae* and *Clostridium tetani* as a combined diphtheria, pertussis, and tetanus (DTP) vaccine and are among the most widely used and safest vaccines available.[6] Other bacterial infections easily prevented by vaccination include those caused by *Streptococcus pneumoniae, Salmonella enterica* serotype Typhi, *Neisseria meningitidis,* and *Haemophilus influenzae*. Evidence from the ARVac consortium suggests that current levels of coverage of pneumococcal conjugate vaccines, for example, prevent 23·8 million episodes of antibiotic-treated illness each year, and vaccines against rotavirus infections prevent 13·6 million instances of unnecessary presumptive antibiotic treatment annually among children younger than 5 years.[7] Based on these estimates and current vaccination coverage, another 40 million courses of antibiotic treatment could be averted if all children in low-income and middle-income countries received these two vaccines.[7]

Likewise, routine immunisation with a conjugate vaccine against *S enterica* serotype Typhi at 9 months of age followed by a booster vaccination before the age of 15 years could prevent 46–74% of typhoid fever cases across countries supported by Gavi, the Vaccine Alliance.[8] Although vaccines against these pathogens are currently available, coverage lags that of DTP.[6] Globally, only 49% of children receive a pneumococcal conjugate vaccine, 46% receive a rotavirus vaccine, and 70% receive a *H influenzae* type *b* vaccine. In comparison, 83% of the world's children are covered by three doses of the DTP vaccine. Future vaccines against *Klebsiella, Escherichia coli, Staphylococcus,* and other bacterial pathogens could help decrease antibiotic use but have faced funding challenges.

Vaccines that prevent viral infections reduce the unnecessary use of antibiotics by preventing associated bacterial superinfections, and reduce presumptive and inappropriate antibiotic use. In the USA, a 10–percentage point increase in the influenza vaccination rate was associated with a 6·5% decrease in antibiotic use, equivalent to 14·2 (95% CI 6·0–22·4, p<0·01) fewer antibiotic prescriptions per 1000 individuals, even after controlling for relevant covariates. In addition, increased influenza vaccination coverage