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Working together to strengthen the fence: the interplay between emergency medicine and public health

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It's a marvel to me that people give far more attention to repairing results than to stopping the cause, when they'd much better aim at prevention. J.Malins, 1895

Emergency medicine and public health are frequently viewed as having little in common. As described in J. Malins' popular poem, public health is characterised by the placing of signs and fences at the top of the cliff to prevent people from falling, whereas emergency medicine is the ambulance waiting in the valley below to treat those who do.[1] But the reality is far more nuanced. Those who fall can help identify the gaps in the fence, or where it's not high enough. Those who don't fall demonstrate areas of success, where public health works. A pertinent example of the interplay between public health and emergency medicine has been shown in the response to COVID-19, where cooperative responses have helped keep communities healthy and safe. This commentary outlines reasons why these two specialties, which appear so contrasting on the surface, can work together to strengthen preventative health and promote societal wellbeing.

The impact of emergency medicine on public health

Emergency departments (EDs) are perhaps the most accessible part of Australia's health system. In Australia, anyone can walk in and be seen by a doctor for free if they have a Medicare card. Thus, people use EDs differently from other health services. It is often their first point of contact with the health system, typically at a desperate and vulnerable point in their life, providing ED's with a unique snapshot of health issues in their communities. This presents a unique opportunity to identify points for preventative health interventions, and to opportunistically assist linking patients and carers with community based supports.

Emergency presentation data can detect and monitor trends in areas including drug and alcohol use, mental health issues and new infectious disease trends, especially in those for whom the rest of the health care system is more challenging to access. Without EDs we would not have had data on danger of electric scooters,[2] button batteries[3] or thunderstorm asthma.[4] Whether it is the dangers associated with a new recreational drug, trends in ED presentations for sporting injuries or identifying a local outbreak of infectious gastroenteritis, emergency medicine can detect emerging public health issues early. Increasingly the rich data from emergency electronic medical records is valuable for identifying areas for targeted public health interventions.

Emergency medicine could further expand its role in health promotion, patient education and linking to community harm prevention services.[5] Patients presenting to ED tend to be receptive to health promotion messages and these should be provided in various forms, media and languages. Certain presentations are 'warning signs' and provide an opportunity to, for example, advise smokers who have cardiac chest pain to quit.[5] Development of validated tools, use of new technology and rapid techniques are required to enable clinicians in ED to deliver targeted, individualised and effective public health messaging.

For those working in ED in Australia, the challenges of overcrowded departments and bed-blocks are frequently encountered. The Australasian College of Emergency Medicine (ACEM) position statement on ED overcrowding advocates for a strengthening of hospital avoidance programs, including better access to community-based programs for mental health and chronic diseases.[6] By working with public health colleagues, ED staff can help target these services to reduce ED stress and subsequently improve care for all patients.

The impact of public health on emergency medicine

Successful public health initiatives have significantly altered the presentations treated in EDs in Australia. For example, Australian road trauma hospitalisations in 1990 were 232 per 100,000 people[7] and have reduced to 161 per 100,000 in 2016 with improved car safety design, seat belt use and drink driving laws, despite higher numbers of cars on the road.[8] Firearm deaths have fallen from 4.8 per 100,000 in 1980[9] to one per 100,000 in 2014.[10] Hospitalisations have similarly fallen[10] and both closely correlate with tougher gun laws.[10] Invasive Haemophilus influenzae type B (HiB) presentations fell from 1.74 per 100,000 in 1993 to 0.08 per 100,000 in 2005 due to the introduction of routine HiB vaccination.[11] Similar decreases in presentations have occurred across most vaccine preventable infectious diseases.[12] Child safety caps on medication bottles, safety standards for toys using button batteries, and removing lethal poisons from certain products have all decreased serious presentations from ingestion.[13] Clearly public health interventions markedly impact the case mix and day-to-day experiences of those working in ED.

Over the 35 years since emergency medicine became a specialty in Australia, we have witnessed dramatic decreases in the frequency and severity of many presentations. Some senior emergency physicians even worry that there may be insufficient experiential opportunities for trainees in the management of certain time-critical pathologies. Alternatively, the average age, number of comorbidities and complexity of medical and psychosocial situations have increased, and emergency trainees today have to navigate complex presentations on a more frequent basis, requiring a newly evolving set of skills.[14,15]

These skills typically involve understanding the broad determinants of health and the wider social environment for each patient. It includes considerations of how to prevent re-presentations to hospital and help patients access community services as needed. These are concepts understood well by public health professionals; therefore, strengthening links between ED and those with public health knowledge and experience can assist EDs to help patients avoid further presentations and preventable adverse health outcomes.

Returning to the COVID-19 response, until recently the public health response to COVID-19 in Australia was one of elimination. The reasoning for this response was largely to protect our hospital system, particularly those in frontline critical care areas such as ED, from becoming overwhelmed. In Australia the successful response in 2020 mostly protected EDs and the health system and demonstrated how public health policy directly impacts the clinical care provided in EDs.

A strong partnership into the post-pandemic world

The pandemic should lead to stronger links between public health and emergency medicine. Those working in public health are experts in viewing health from a population level and advocating for changes in public policy. Coupling this with experience and knowledge from direct patient contact in ED can powerfully strengthen preventative health and support health and wellbeing across our communities.

Therefore, by informing and complementing each other public health and emergency medicine hold great potential for improving societal health in addition to minimising the damage from COVID-19. Together these two specialties can continue building the fence and repairing holes to build a healthcare system that is stronger for everyone.

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