

Training in public health and community medicine without training of precautionary principles is incomplete

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ABSTRACT

What has been the learning is from the current pandemic. Besides the fact that it taught us the immense potential of pandemics to lead to ruin, it also taught us about our limitations in dealing with it.

Keywords: Community medicine, precautionary principles, public health, training

Background

The coronavirus disease 2019 pandemic has arguably been the worst health crisis in recent memory. If it has impacted health and economies, societal disruption has not been spared.^[1] However, what it has impacted the most is our sense of non-fragility by exposing a collective lack of preparedness and an inability of our systems to defeat the outcomes. The failure of systems to respond with conviction (expected from systems) amongst all others has been our “greatest failure”. The reason is that this happened despite being warned of an impending pandemic for long and despite claiming to have technology advanced enough to analyse and make better predictions. The failure, though collective and more universal than local, has also exposed the limited emphasis on human components of systems and our over-emphasis on relying on technology as the sole measure of strength in health care. Our training of human resource in health has suffered in general, but it is training in public health that has taken the beating around its center. Moreover, this

is more specific to our context. This has been captured and contextualised best by the narratives dominating the academic as well as non-academic circles during this pandemic.

Narrative and reasons for its subscription

As an underlying concept, achieving Herd immunity was propelled as the most critical pathway to achieving long-term success in this pandemic. The concomitant concepts of achieving this (Herd immunity) “through infection” or “through vaccination” alone followed. A failure in our training to capture the unheard as well as our failure in understanding to think about the unknown and our inability to protect ourselves against pandemics and health care disasters may have been one of the reasons. Also, the fact that public health over a period of time has become more and more supportive of creating structures and systems in silos or compartments, for example, the vertical health programmes, and not favorable for a large health care system reform around health in general.^[1] This effectively has only increased the centralisation of health around disease and illness by a pharmacy and intervention-sensitive medical system. One of the worst outcomes of this (and probably most critical) has been that it has made public health insensitive to pandemics.

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Much of the blame for this should go to the practitioners of public health/community medicine and in the way we groom our specialists.

We prepare them 1) to suspect crisis by talking about emergencies, epidemics, and outbreaks but not to predict and act on the ruin or pandemic; 2) to understand thin tail events and not fat tails; 3) to remember, re-collect, and reproduce normal distribution and not non-normal; 4) to overlook black swans and to mis-read the criticality of black swans; and 5) to measure evidence through an almost compulsive emphasis on sampling and sample size.

Our preparation of our specialists and the narratives we resort to has strengthened the belief of decision makers and policy experts about risk being randomly distributed in all situations (and hence vertical health programmes) and uniform as against it being non-random in the case of pandemics or rarer events. The fact that the sample size for pandemics in time is limited shows that the evidence thus built could not be factored in while deciding on the current pandemic, creating a failure in our understanding of precautions and preparations.

The failure of public health/community medicine is also in our traditional decision-making process. We are able to focus and deal with a situation wherein harm is localised and risk is easy to calculate, a lesson we learnt from running vertical health programmes. Our concepts of probability distribution of events are sustained by our love for developing an understanding of events accompanied by well-behaved, mild variations (e.g., Gaussian or thin tails) and not by small probabilities associated with large variations that have no characteristic scale (e.g., power law or fat tails). Pandemics are such events.^[2]

What is required?

Public health/community medicine needs to think beyond compartments and needs to look beyond vertical health programs and develop a capability to address the impending disasters impacting health and to create an ability to respond in earnestness through policy initiatives. For this, the training has to be more inclusive and more in tune with the evolving times. As policy is assumed to envision future, preparedness should be a part of training as preparedness means visualising future. Until then, we will continue to breed an assembly line of practitioners looking for roots in the changing world. This pandemic has been an eye opener in our limited understanding of public health as may a new pandemic or impacts arising out of, for example, the changing climatic condition. Public health needs to understand dealing with risk. An event generally comes up with two kinds of potential harm, and this need to be considered when determining an appropriate approach to the role of risk in decision-making.

1. The events have localized non-spreading impacts which reflect in thin tails and in which we are generally trained to some extent.
2. Events have propagating impacts which reflect in fat tails resulting in irreversible and widespread damage wherein we have almost no training.

Why train for the pandemic

More fat tails are likely to happen because of an inter-dependent world, enhanced with a huge increase in global travel and human beings' willingness to move into non-habitable zones. It is something similar to the global financial crash of 2008, which for public health illustrates the failure of evidentiary risk management.^[2] Relying on the evidence made available to us, for example, the stabilisation of communicable diseases and the rise of non-communicable diseases, attributed to the epidemiological transition, we are exposing ourselves to many more fat tail events.

Conclusions

We all know that if hit on the road by a car, the chance (probability) of ending up having a fracture is 90 out of 100, whereas the chance (probability) of ending up having a fracture while hit by a cycle is maybe 10 out of 100. However, who knows whether one belongs to those 10 who despite being hit by a car escaped fracture or to the other 10 who got hit by a cycle and still got a fracture.

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Key message

Policy needs to build in precautions, preparations, and training in these in the absence of evidence for or against.

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Conflicts of interest

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