

Commentary

Clinical public health: harnessing the best of both worlds in sickness and in health

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Abstract

Introduction: Effective, sustained collaboration between clinical and public health professionals can lead to improved individual and population health. The concept of clinical public health promotes collaboration between clinical medicine and public health to address complex, real-world health challenges.

In this commentary, we describe the concept of clinical public health, the types of complex problems that require collaboration between individual and population health, and the barriers towards and applications of clinical public health that have become evident during the COVID-19 pandemic.

Rationale: The focus of clinical medicine on the health of individuals and the aims of public health to promote and protect the health of populations are complementary. Interdisciplinary collaborations at both levels of health interventions are needed to address complex health problems. However, there is a need to address the disciplinary, cultural and financial barriers to achieving greater and sustained collaboration. Recent successes, particularly during the COVID-19 pandemic, provide a model for such collaboration between clinicians and public health practitioners.

Conclusion: A public health approach that fosters ongoing collaboration between clinical and public health professionals in the face of complex health threats will have greater impact than the sum of the parts.

Keywords: *clinical medicine, public health, multidisciplinary collaboration, sickness, health, population health, wicked problem, megatrend, syndemic*

Introduction

Clinical medicine and public health are regarded as distinct disciplines that focus

on individual and population health, respectively. Complex health challenges such as those recently posed by the COVID-19 pandemic highlight the importance of

more effective and sustained collaboration between the two disciplines to reduce morbidity and mortality and ensure timely research, practice and policy initiatives.

Our previous empirical study indicates that stronger links between clinical medicine and public health can lead to novel research and training opportunities.¹ The study provides the necessary framing for sustained collaboration and coordination between the two disciplines.¹ Our paper also describes the origin and brief history of the term “clinical public health.”¹

For the purpose of this commentary, we define clinical public health as the structured and systematic collaboration of clinical and public health professionals in pursuit of common health goals. We argue that adopting, promoting and formalizing the concept of clinical public health can facilitate the necessary interdisciplinary collaboration to improve health for all.

Public health and clinical health professionals already work together to optimize individual and population health in areas such as health promotion and disease surveillance, prevention and control. In the context of the COVID-19 pandemic, examples

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have included the development of testing strategies and mathematical projections of cases, hospitalizations and deaths that affect both population health, and access to clinical and hospital services. There have been calls to improve collaboration between primary care and public health, with some success;²⁻³ however, these efforts are still in the preliminary stages. As exemplified by the COVID-19 pandemic, complex clinical and public health challenges require solutions beyond the scope of either clinical medicine or public health alone.

Clinical medicine and public health are sister sciences

In Greek mythology, curative medicine and health promotion were two separate but closely related fields of medicine.⁴ Panacea (the goddess of treatment) and Hygiea (the goddess of prevention and wellness) were daughters of Asklepios (the god of medicine).⁴ In 1938, Paul suggested that curative medicine and preventive medicine are “sister sciences,” with both committed to the same therapeutic program.⁵

Despite the central distinction that the patient in clinical medicine is an individual and that the patient/client in public health is an entire population, there are similarities in the core functions^{6,7} of these sister sciences (see Table 1). The similar nature of these core functions provides a foundation for collaboration in the combined enterprise of clinical public health.

Rationale for clinical public health

Complex health challenges include wicked problems, megatrends and syndemics. Wicked problems have no definitive

formulation, no stopping rule, no test of a solution and no enumerable set of solutions. They do not allow learning by trial-and-error. They are unique, are symptoms of other problems, can be explained in numerous ways, are not true-or-false and have immense consequences.⁸ Examples include climate change and the obesity epidemic.⁹

Megatrends are large changes that are slow to form (often developing over decades), but once formed, have wide-scale impacts that are difficult if not impossible to reverse.¹⁰⁻¹² An example is the social and physical effects of ubiquitous connectivity.

Syndemics, or synergistic epidemics, involve two or more diseases (e.g. infectious, chronic) that worsen the prognosis for each and are compounded by enhanced vulnerability to negative determinants of health.¹³ An example is the SAVA syndemic (substance abuse, violence and HIV/AIDS).¹⁴

The COVID-19 pandemic is a prime example of a wicked problem with serious health, social and economic consequences. It also emerges as a megatrend with broad health impacts¹⁵ that can spiral out of control over time, causing insidious and far-reaching effects of “long COVID” on individuals, families and the health care system.¹⁶ The coexistence and interactions of COVID-19 with chronic disease and social and economic inequality also make it a syndemic.^{17,18}

The salience of the COVID-19 pandemic has led to sustained collaboration between clinical and public health professionals that has not always occurred in response to other health issues. This suggests that formally recognizing this collaboration, and advancing coordination of activities

that share common aims under the concept of clinical public health, can facilitate meaningful solutions to other real-world complex health problems through joint approaches to policy development, education, research, health services and training of clinical and public health professionals.

Achieving the vision of clinical public health

Clinical and public health professionals need to overcome ideological and structural barriers to collaboration. For example, the clinical focus on the doctor–patient relationship may limit consideration of public health goals and functions. On the other hand, the public health focus on improving the health of populations may lead to underestimating the importance of clinical preventive interventions at the individual level.

Promoting mutual understanding of the work and science of clinical and public health professionals is fundamental to a collaborative approach whereby practitioners can maximize effectiveness by fitting the intervention level to the nature of the problem.

Below are examples of efforts required to achieve multilevel coordination for population and individual health.

Enhancing the role of clinical practitioners in public health research

One strategy for achieving greater collaboration would be to provide joint training and research opportunities for clinical and public health practitioners. Furthermore, many clinical practitioners and public health physicians have unpaid, adjunct appointments in their respective academic departments. This can limit greater collaboration, as faculty who are engaged in the practice of medicine or public health often feel of lesser status than “core” tenured faculty.

There is also the issue of time. Adjunct professors often have positions of responsibility and feel squeezed between their paid work and their desire to contribute to research and education. Some universities are now hiring salaried clinical professors, also known as professors of practice.¹⁹ This arrangement could be extended to professors in other fields such as clinical public health.

TABLE 1
Comparison of the core functions of clinical medicine and of public health

Core functions of clinical medicine ⁶	Core functions of public health ⁷
Assess individual health status	Population health assessment
Distinguish between the ill and the well	Health surveillance
Care for the ill, including helping individual people cope with illness	Health protection
Cure illness, where possible	Health promotion
Prevent illness	Disease and injury prevention
(Implied: Emergency care for the acutely ill, or emergency medicine) ^a	Emergency preparedness and response

^a Although clinical medicine has “emergency medicine,” it is not listed in Childs⁶.

Addressing discipline barriers

There are important benefits to integrating the individual patient-level and population-level perspectives of the primary care and public health sectors.²⁰ Clinical medicine focusses on disease diagnosis and treatment, but because clinicians are often the first point of contact with health services, they provide opportunities for primary and secondary disease prevention. However, there are barriers related to discipline training and procedures. Clinicians may not be able to offer preventive services to their patients, because of lack of reimbursement, lack of time or patient refusal, among other reasons.²¹

Addressing barriers related to funding practices

Health funding has separate budgets for individual health (curative care, rehabilitative care, long-term care, ancillary services and medical goods) and population health (prevention and public health services, health administration and insurance).²² This can create barriers to greater collaboration. In addition, chronic underfunding and deepening cuts to public health budgets, particularly at municipal levels, challenge clinical medicine–public health collaboration.²³ Considered the “poor cousin of clinical medicine,”²⁴ public health is typically allocated only a small proportion of the total annual health budget.²⁵

Clarifying roles

Confusion over the role and mandate of clinical medicine (individual-based) versus public health (population-based) may prevent effective clinical public health. For instance, in some jurisdictions public health plans the delivery of immunization services and provides the clinical service of administering immunizations. In other jurisdictions, immunizations are administered almost exclusively by clinicians.

Collaboration under the banner of clinical public health might help clarify roles, reduce confusion and improve efficiencies.

Improving communication

An effective two-way communication of real-time data can promote collaboration between clinical medicine and public health.

Examples of effective clinical public health from the COVID-19 pandemic

Recognizing and adopting the concept of clinical public health can foster collaboration between clinical and public health professionals to address complex health issues by enabling multidisciplinary²⁶ approaches to the planning and delivery of both clinical and public health services. Such collaboration can promote best practices, education, research and advocacy and close gaps and inequalities in individual and population health. Successful experiences from responses to the COVID-19 pandemic can provide a model for advancing clinical public health approaches, as in the examples below.

The contribution of public health to clinical care is perhaps best illustrated with the efforts to “flatten the curve,” which became the defining slogan and graphic of the COVID-19 pandemic in 2020.²⁷ The strain on clinical practitioners in hospitals caused by overwhelming numbers of people becoming ill at the same time has been strategically lessened by public health and social measures such as wearing masks,²⁸ handwashing, physical distancing and other community mitigation to reduce disease transmission.

Similarly, clinical practitioners have worked to increase the scope and effectiveness of population-based interventions.²⁴ For example, they managed the care and recovery of patients in isolation due to COVID-19 infection, thereby reducing the risk of virus transmission in the community. Clinicians have been successfully promoting and advocating for adherence to public health and social measures throughout the pandemic and playing a crucial role in population health by encouraging vaccination. Clinical research on the development and testing of vaccines has also engaged both clinicians and public health professionals.

In summary, the collaboration between clinical and public health professions during the COVID-19 pandemic has been remarkable. Clinical and public health practitioners have worked to align education and public messaging on testing and public health and social measures to achieve better individual and population health, reducing the impact of the pandemic at both levels. This enhanced role

provides a model for ongoing promotion and advocacy for public health policies to reduce morbidity and mortality due to other infectious and communicable diseases, injuries and chronic diseases. The collaboration should continue during the post-pandemic period.

Recommendations

The COVID-19 pandemic has provided unprecedented evidence of the importance of collaboration and coordination between clinical and public health professionals. Continuing this highly effective partnership by formalizing the concept of clinical public health is an important step towards identifying and developing new and more comprehensive solutions to population health problems, including, for example, addressing determinants of health at the individual and population level. A comprehensive framework is required to achieve common goals over the long term for the benefit of all.

A recent Lancet Commission report highlights the need for all health professionals to be skilled in individual and population-level care.²⁹ To accomplish this, a multi-phased process might work best, by first establishing the scope of clinical public health through defined terms, and then identifying key topics for collaboration. This could be done through a working group representing multiple stakeholders, followed by a consensus building process to refine the vision and approach with a broader community of stakeholders. Building on the successes and learnings of the pandemic response, consideration could be given to starting with a sustained, collaborative approach to communicable disease prevention and control to prevent and control epidemics and pandemics.

Some of this work needs to include a broad range of health professionals. While there have been advocates of greater synergy between primary care and public health, the concept of clinical public health is broader, including collaboration with all clinical specialties and disciplines within medicine and other health care specialties.

Also, information technology solutions that connect local clinical and public health professionals could encourage data sharing and enable all relevant health professionals to be informed of the impact of collaborative interventions in real time

(e.g. reporting on immunization coverage by practice and community).

Conclusion

Action to accelerate clinical public health must be taken now to sustain the collaborative successes of the pandemic response. What better legacy from the COVID-19 pandemic than adopting the concept of clinical public health to further strengthen the bonds between clinical and public health professionals to achieve better health for all?

Conflicts of interest

We declare no competing interests.

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Authors' contributions and statement

BC and RU conceptualized the design and initiated the project.

BC wrote the first draft of the paper, with input from RU.

All authors participated in the critical review of the first draft, raised critical questions and provided further inputs and references from the world literature on the topic. All authors were involved in the drafting of various sections of the manuscript, critically revised different versions and approved the final version. All authors are accountable for all aspects of the project.

BC, AK and KG contributed final inputs and editing.

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