Reflections on preventive medicine

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Abstract

Having thought much about medicine in my career-long effort to understand it and the research for its advancement, I have come to views rather different form the now-prevailing ones in respect to what preventive medicine is about; what epidemiology is in relation to preventive medicine; what distinguishes preventive medicine in preventive healthcare at large; the relation of preventive medicine to public health; the concept of health promotion; and also the core principles of preventive medicine. All of these views I set forth in this article, for the readers’ critical reflection.

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Commentary

Is all of preventive medicine about disease?

On the individual level, the problem being tackled by preventive medicine practices is generally said to be a person’s risk of coming down with a case of a particular “disease.” And on the population level, preventive medicine is said to be about the level/rate of morbidity and/or mortality from the “disease” in question. (Any given preventive measure can, of course, be directed to more than just one “disease.”) Accordingly, this journal’s mission is said to be about “disease prevention” together with matters related to this.

I see preventive medicine to generally be about prevention of whatever type of ill-health; that is, prevention of illness, which need not be a disease (L. morbus); it can alternatively be a defect (L. vitium) or an injury (L. trauma). To me, a disease is a pathological process (somatic), while a pathological somatic state is not a disease but a defect. An injury also is a somatic process, but it is distinct from a disease in terms of its pathogenesis.

Prevention of defects – congenital malformations, most notably – is an eminently important mission in preventive medicine, along with prevention of diseases – communicable diseases as well as non-communicable ones (for which ‘chronic diseases’ is a common misnomer).

I actually see the scope of the concerns in preventive medicine to extend beyond illness: to sickness not due to any underlying somatic anomaly but occurring in healthy persons. For example, sickness prompted by the untoward quality of indoor air in healthy persons while in a particular building – sickness called ‘sick building syndrome’ (misnomer, as it is the person in the building rather than the building itself that is sick, and as it isn’t really a syndrome) – I take to be a concern in preventive medicine. A healthy person’s chronic insomnia due to some aspect of lifestyle or work environment, say, is another example, among many others.

Is epidemiology fundamental to preventive medicine?

The WHO (on one of its websites) defines epidemiology as: the study of the distribution and determinants of health-related states and events (including disease), and the application of this study to the control of diseases and other health problems.

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Various methods can be used to carry out epidemiological investigations: surveillance and descriptive studies can be used to study distribution; analytical studies are used to study determinants.

To me, epidemiology is community medicine (Miettinen, forthcoming; Miettinen and Karp, 2011), which is distinct from clinical medicine by virtue of the generic nature of the community doctor’s client — the population of the community (s)he serves (while a clinical doctor’s clients are individuals, cared for one at a time).

All of community medicine inherently is preventive medicine (while clinical medicine is therapeutic and rehabilitative in addition to being preventive). To me, thus, epidemiology is not fundamental to preventive medicine. To me, epidemiology is preventive medicine — the community-level segment of preventive medicine (Miettinen, in press; Miettinen and Karp, 2011).

Fundamental to preventive medicine is the knowledge-base of it, scientifically advanced by population-level epidemiological research, while laboratory-level, ‘basic’ epidemiological research provides for the development of innovative ‘tools’ for preventive medicine (Miettinen, forthcoming).

What distinguishes preventive medicine in preventive health care?

Community-level preventive medicine is eminently multidisciplinary: apart from epidemiology, involved are various paramedical disciplines — community nursing, community health education, water sanitation, restaurant inspection, etc.

The American College of Preventive Medicine states — under “What is Preventive Medicine?” — this:

Preventive medicine focuses on the health of individuals, communities, and defined populations. Its goal is to protect, promote, and maintain health and well-being and to prevent disease, disability, and death. Preventive medicine specialists are licensed medical doctors (MD) or doctors of osteopathy (DO), who possess core competencies in biostatistics, epidemiology, environmental and occupational medicine, planning and evaluation of health services, management of health care organizations, research into causes of disease and injury in population groups, and the practice of prevention in clinical medicine. They apply knowledge and skills from the medical, social, economic, and behavioural sciences. Preventive medicine has three specialty areas: aerospace medicine, occupational medicine, and public health and general preventive medicine.

Rather different from this, I suggest that preventive medicine is medicine aimed at prevention of (the occurrence of) illness and also sickness not due to illness (cf. above). Naturally, the question that arises from this is: What distinguishes medicine (disciplines of it) from other disciplines of healthcare (for humans). According to my medical dictionaries, medicine is: “the art and science of the diagnosis and treatment of disease and the maintenance of health” (Dorland’s); or “the art of preventing or curing disease; the science concerned with disease in all its relations” (Stedman’s).

Just as I take community medicine — epidemiology — to be distinct from the research/ science (epidemiological) serving to advance it (above), I distinguish between clinical medicine and clinical research/ science. Medicine is not science, but it is evolving toward the ideal of being genuinely scientific (Miettinen, 2013).

To me, the essence of medicine flows from its unique knowledge-base (and conversely). Medical knowledge allows the medical doctor to pursue and achieve esoteric knowing about the illness(es)/ sickness(es) of the client(s) (s)he serves (Miettinen, 2013): diagnosis, etiogenesis, and/or prognosis (incl. how correct pgn. depends on prospective lifestyles and treatments). It is the attainment of this esoteric knowing that is in the essence of functioning as a medical doctor — a teacher of the client, and others concerned, about their illness(es)/ sickness(es), extant and potential (L. doctor, ‘teacher’).

Preventive medicine vis-à-vis public health

The community-level segment of preventive medicine — epidemiology, that is (cf. above) — has always had, and presumably will always have, a close functional relationship not only with its associated paramedical disciplines but also with the agencies and authorities of public health. This is duly noted in the mission statement of this journal.

The U.S. Public Health Service defines public health this way:

the science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals.

The way I see it, the point of departure toward the concept of public health is appreciation of the distinction between community medicine and community health. As a concept of professional healthcare, health is more inclusive than medicine: community health encompasses the work of paramedical professions (community nursing, etc.) as well as that of the medical/epidemiological one(s).

Next, as I see it, the need is to appreciate that the work of (the team of) community-health professionals (distinct from clinical professionals) inherently is in the communal, public domain (while clinical healthcare can be private).

So, I suggest that a sound concept of public health, in the professional meaning of the term (distinct from the public’s health), is professional healthcare in the public domain. Public health in this meaning naturally is publicly financed and societally organized — and consequently, governed by public policies, especially in respect to its regulatory means of enhancing the public’s health (and, also, its freedom from sickness not due to illness).

Public health in this meaning of the term has been exclusive of clinical-level medicine (preventive, therapeutic, and rehabilitative) and its associated paramedical professional work, as this has not been in the public domain. But, what about the implications of the advent of national health insurance, which brought clinical healthcare into the public domain? Hasn’t it expanded the domain of public health — dramatically, making clinical healthcare the dominant segment of public health and the main concern of the minister of health?

To me, this has no bearing on the idea that public health is healthcare in the public domain, in the domain of the minister of health; it only means that in a modern country, public health commonly is clinical healthcare in the main and, hence, mainly therapeutic rather than preventive.

In these terms, the advent of national health insurance (Medicare and Medicaid in the U.S.) has been an enormous, epoch-making innovation in public health.

Preventive medicine vis-à-vis health promotion

Apart from “disease prevention,” this journal’s mission is said to be about “health promotion” (and about disciplines related to these). The implication appears to be that health, in the meaning of absence of “disease,” is of varying levels, and that in preventive medicine the goal is not merely to maintain health but to optimize it beyond mere absence of illness.

Insofar as this indeed is the implication, the question arises: In what sense is health — the absence of disease and other illness — of varying levels/grades? The answer flows from appreciation of the sense in which illness is a problem, namely sickness from it or untoward outcome of its course (death, most notably). So, when illness-definitional somatic anomaly (prone to cause sickness and/or death) is absent —
that is, when the soma is healthy – variations of the level of health have to do with sickness from extrasomatic causes — environmental or behavioral. The sickness is very mild, perhaps, mental – a matter of mood, say – or physical – a matter of degree of energy, say.

These conceptions of health and health promotion are in rather stark contrast to the concepts of health and health promotion espoused by the WHO. Its concept of health is:

> a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

And health promotion it defines thus:

> the process of enabling people to increase control over, and improve, their health. It moves beyond a focus on individual behaviour towards a wide range of social and environmental interventions.

### Core principles of preventive medicine

In closing here, I suggest two core principles for the practice of preventive medicine: The goal of preventive medicine should not be maintenance or promotion of the client’s (individual’s or population’s) health; instead, it should be – as in therapeutic and rehabilitative medicine – maximally professional care in response to the health concern of the client (perhaps expressed only by a representative of the client). And given what the client’s concern is – risk of illness or level of morbidity, according as the client is an individual or the population of a community – the role of the doctor in preventive medicine is to provide expert teaching about the client’s concern, including about the actions the client might elect to take, especially as to the consequences of these.

The regulatory approach to community health is, at present, supposed to be guided by the precautionary principle, in Canada, the European Union, and elsewhere. According to the Canadian Environmental Law Association, this principle
denotes a duty to prevent harm, when it is within our power to do so, even when all the evidence is not in [italics in the original].

This definition is followed by the statement that “This principle has been codified in several international treaties to which Canada is a signatory,” and that “Domestic law makes reference to this principle but implementation remains limited.”

The authoritarian (and extremist) character of this principle is in sharp contrast to the two principles I suggest above – which are libertarian in their spirit. In the Third Reich of Germany the citizens had the duty to prevent harm to the genome of the “Aryan race.” In a genuinely libertarian society, experts on preventive medicine teach law-makers about the health effects of environmental (and other) risk factors, and economists teach them about the economic implications of the regulatory removal of the factors. And, the thus-educated law-makers have no duty to prevent the harm to health, at the cost of this prevention to liberty and the economy, however well these two are known.

Thus wrote the illustrious epidemiologist Jeffrey Rose (Rose, 2008):

> The first duty of government in health promotion and environmental regulation is to protect the individual’s freedom of choice. … Neither governments nor managements have the right to impose constraints on people simply because they are believed to be good for them. … This principle is not widely observed in safety legislation, which tends to be paternalistically protective (sometimes for fear of litigation).

In the foregoing, I’ve cited the idea that in preventive medicine one of the missions is prevention of death, and that among the purposes in public health is prolongation of life. But, it should be understood that death is inevitable; that it cannot be prevented. Its postponement – prolonging life, that is – may be possible. But, to me it is not obvious that the life of an individual, or the ‘life expectancy’ of a population, should be prolonged.

As an example, it is not obvious to me that all cancers would ideally be prevented – thereby extending the life expectancy of populations such as those of Canada and the United States by some two years. Nor is it obvious to me what the shape of the optimal distribution of the duration of life would be in populations like these. I only know that life, so long as it lasts, would ideally be free of the suffering from sickness.

And in closing of this closing, I wish to share with the readers the words spoken by the rabbi in the funeral of an illustrious colleague of mine, whose life came to its end at the height of his career. Attributing the words to George Santayana – the philosopher, poet, and humanist – the rabbi spoke this wisdom: “The length of life is vanity; its height is joy.”

### References