

Think *health* - speak *health* - achieve *health*

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Abstract

Introduction

Health has been lost in the current healthcare system, replaced by a near exclusive focus on discrete diseases. People feel healthy if they perceive a relative balance between their physical, emotional, social and cognitive experiences. The role of the healthcare system, therefore, must be to facilitate a rebalancing of these domains in those who experience illness, regardless of the presence or absence of identifiable discrete biomedical conditions.

Looking at health from a community epidemiological perspective highlights that the experience of health follows a Pareto distribution (although known as the 80:20 split). The majority of people are healthy enough not to require health care. Of the 20% who perceive to require health care, the majority require primary and community care, with very few in need of tertiary hospital care. This article reflects on the notion of *health*, highlighting that health is a subjective and dynamic state.

Conclusion

Combining these two strands leads to the conclusion that health care must focus on people and their health (and illness) experiences. A *health*-focused healthcare system will be aligned to provide the structures and functions that allow people to regain their *personal health*, defined by their own subjective experience.

Introduction

‘..The principal conception of medicine, health, and disease are necessarily related to, and acquire their meaning from, the epistemological features of clinical interaction. Both health and disease are essential conceptions of medicine as a discipline. To the objection that health and disease are definitia only of organ systems, one must counter with the large body of evidence that both concepts are evaluative; that is, they include in their meaning the values of patients, societies, and cultures (Pellegrino & Thomasma¹, p63)’.

*‘The way we speak is the way we think². Metaphors are the means to express our deeper thoughts and understandings². In regard to health we speak, i.e. think, in military – battle against death, war against various diseases and medical care proceeding along hierarchical lines of command and control, or economic metaphors – patients are consumers and covered lives, the main concerns of health care are efficiency, profit maximisation, customer satisfaction and the bottom line³. Both metaphors indicate that almost all in the health system are fixated on the *inverse of health* – disease. One, therefore, may conclude that health is not the concern of medicine as an institution, or of doctors and other health professionals as the providers of care at the grass roots level. Furthermore, should health professionals even concern themselves with health, as, after all, they are trained to deal with diseases?’*

The current perception of health and disease as separates and opposites is deeply grounded in the dichotomous reductionist worldview of the 17th century. Either–or approaches characterise the old paradigm, which fails today’s patients, professionals

and society at large. The 20th century paradigm of wholism (Table 1a) views all phenomena as interconnected and interdependent—*health and disease* mutually co-exist at the same time in the same person.

Patients experience the clash of these two worldviews especially when moving between the primary and secondary care system, as is illustrated by two common statements: ‘Everyone was interested in my heart/knee/etc., but no one was interested in me!’, and ‘Now I feel worse than before going to hospital, even though they all told me that I’m fixed’.

The aim of this critical review is to give an overview on physical, emotional, social and cognitive aspects of health.

Think *health*

Before proceeding, it is necessary to consider what we mean by *health*. The term *health* arose from the old English word ‘hal’ meaning ‘whole’; health is wholeness, and a person being healed is one who has ‘become whole’ again.

Health is a subjective evaluative state with its own dynamics, and health is an adaptive state changing over time^{4–8}. Health is associated with physiologic changes within homeostatic boundaries⁹, rapid rise in resilience over the first two to three decades of life followed by a slow decline over the next 40–80 years^{10,11}, with death occurring at a point when physiological reserves diminish to less than 20% of basal levels where everyday perturbations of life can no longer be withstood¹⁰. In addition health has an overarching purpose, being the driver of survival and reproduction^{5,12}.

Health cannot be defined by precise axioms – health is an interpretive framework; it describes

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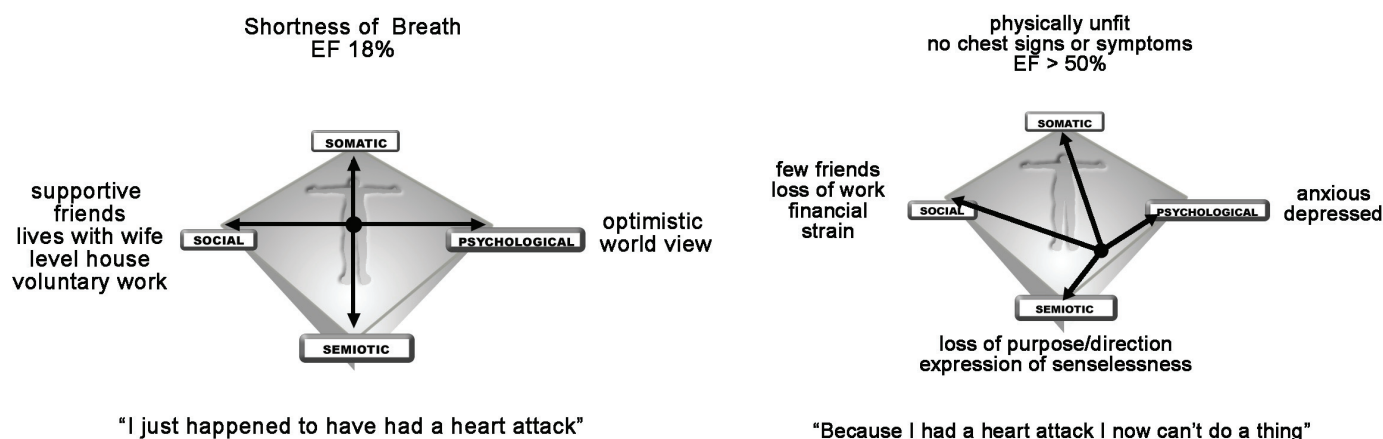


Figure 1: Any illness event, such as a cardiovascular event, can affect a patient in very different ways. Severe and disabling disease states can well be associated with a good health experience, whereas even minor disease states can be experienced as poor health.

Table 1: Additional information, with reference to information presented in-text.

a	The sciences of <i>systems and complexity</i>
b	In which case, there are as many definitions of health as there are human beings on this planet
c	The frequency of diagnoses in primary care also follows a Pareto distribution, refer to Fink et al. Diagnoses by general practitioners: Accuracy and reliability. <i>International Journal of Forecasting</i> 2009;25(4):784–93.
d	The act of engaging, applying, exercising, realizing or practicing
e	<p>Systems and complexity science define complex adaptive systems as collections of many different components (agents) interacting in non-linear ways in the absence of any external supervisory influence. Importantly, the behaviours of a complex adaptive system cannot be explained by the behaviour of specific agents; instead, complex adaptive systems show emergent behaviours based on the initial conditions of its agents (hence, outcomes are not precisely predictable).</p> <p>Note: the behaviour of a specific agent is described by reductionism, described by Yaneer Bar-Yam in systems terms as 'an approach to building descriptions of systems out of the descriptions of the subsystems that a system is composed of, and ignoring the relationships between them'. (http://necsi.edu/guide/concepts/reductionism.html, Accessed 10 January 2012)</p> <p>For a detailed discussion of complex systems, interested readers are referred to the seminal work of Paul Cilliers (Cilliers P. <i>Complexity and Postmodernism. Understanding Complex Systems</i>. London: Routledge; 1998.)</p>
f	The organizational literature talks about <i>shared vision</i>
g	<p>The key features of the project are summarized on the Somerville website (http://www.somervillema.gov/departments/health/sus)</p> <p>The major of the City of Somerville describes the implementation of the programme at http://www.youtube.com/watch?v=WT7NqVLhteE.</p>

a subjective state (Table 1b). Indeed, health, and illness, can be experienced as much in the absence of identifiable pathology/pathophysiology as in the presence of inevitably fatal morbidity. However, as a subjective state, health is neither solely an

individual construction nor solely a reflection of social attributes or biological (genomic) and environmental preconditions.

The notion of health as a holistic as well as subjective state is reflected in the WHO's 1986 Ottawa Charter for

Health Promotion: *Health is ... seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities*¹³. Thus, fundamental inter-related conditions to achieving

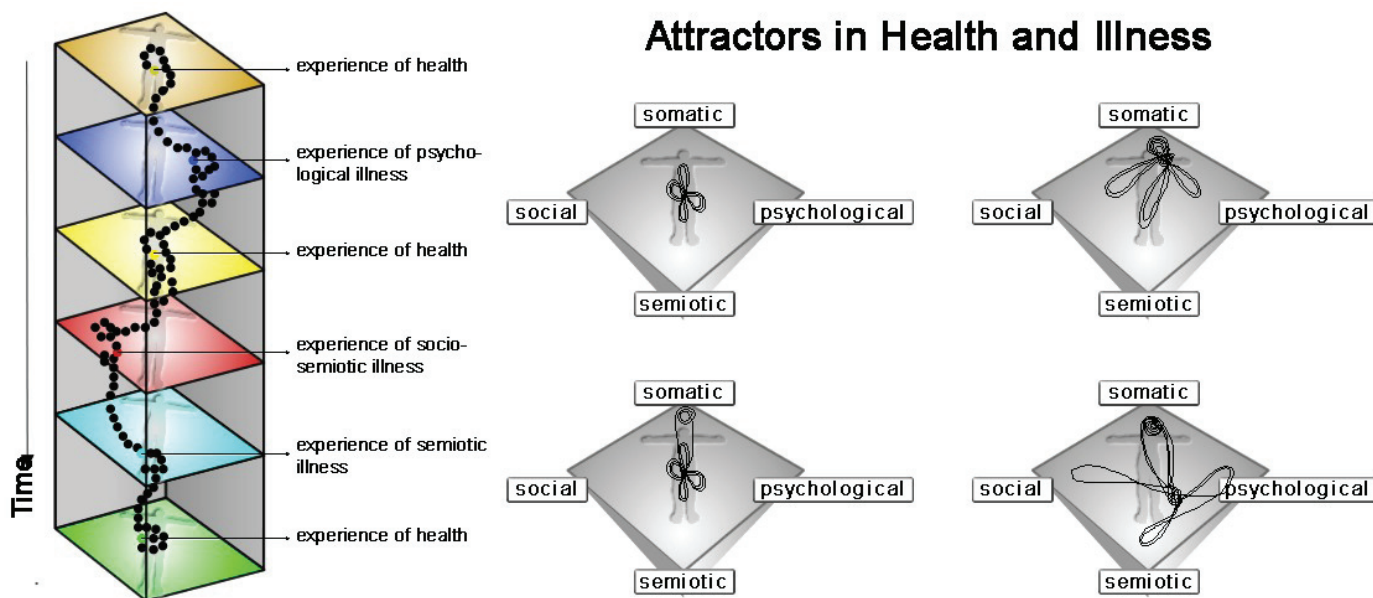


Figure 2: The daily health experience invariably will change day-by-day, as illustrated in the left part of the figure. These changes can be in any direction towards the physical, emotional, social or cognitive perception domain. When plotting these changes in a two-dimensional plain, an attractor pattern will emerge that we typically describe as *healthy* (top L), *acute illness* (bottom L), *chronic disease* (top R) or *somatisation* (bottom R).

Community Epidemiology

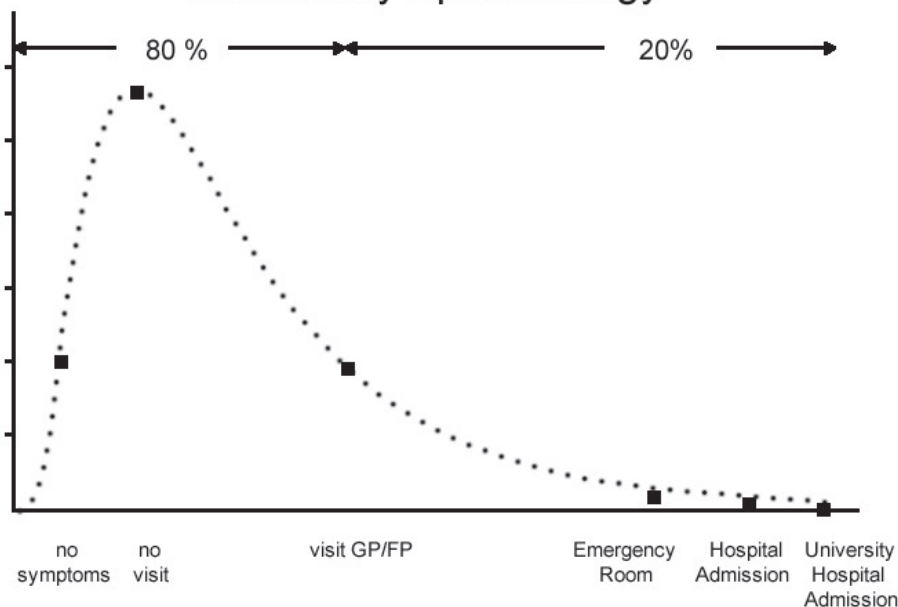


Figure 3: Health experience in the community, showing the typical pattern of nonlinear or long-tailed distributions. Data are from White et al.¹⁸

health must include peace, shelter, education, food, income, a stable eco-system, sustainable resources, social justice and equity.

General practice/family medicine, as a discipline, is grounded in dealing with the interconnected and interdependent domains of the whole person. Currently,

most general practitioners/family physicians may not be consciously aware of doing so, but patients certainly appreciate their doctor for dealing with the vagaries and uncertainties of their illness experiences.

Speak health – health as a meaning-making process

Health as a self-perceived state is not a new notion. Socrates already recorded his extensive conversations on the evaluative nature of health^{14,15}. From a science perspective Uexküll and Pauli¹⁶ coined the term bio-semiotics in response to the observation that physiological responses, such as the stimulation of a pressure receptor in the skin, only delivers an electrical impulse to the brain, where this signal requires interpretation, namely was it pleasurable touch or a painful sting or slap. Examining the concept of self-rated health Jylhä¹⁷ pointed to historically varying socially and culturally influenced conceptions; however, all have been associated with significant impacts on quality of life and mortality.

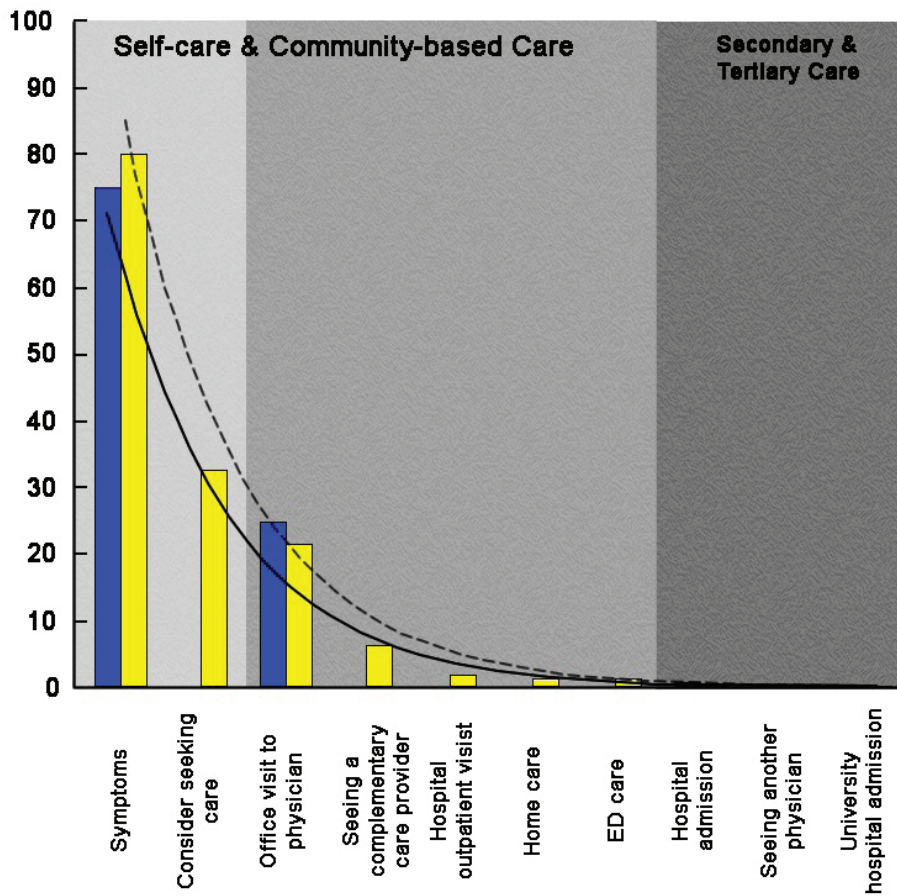


Figure 4: Changes in health experiences between 1961 and 2001. Healthcare needs are stable within communities over time. Of note though is the increase in *health concern* without this resulting in an increase in healthcare seeking. Data are from White et al.¹⁸ and Green et al.¹⁹

Health, meaning wholeness, arises from making sense of one's experience of personhood. This understanding resulted in the proposition of a somato-psycho-socio-semiotic model of health. Health, then, is the state of relative balance of the dynamic interplay between physical status, social integration, emotional experience and cognitive perceptions, the importance of the latter being exemplified in Figure 1 for two patients having been affected by a myocardial infarction^{6,8}.

Plotting the 'day-to-day' dynamics of health over time provides a health trajectory, whose patterns describe traditional disease classifications, which we convey as acute illness, chronic disease and somatisation (Figure 2).

Towards achieving health

The health experience in the community
Contrary to popular belief, *most people are healthy, or 'healthy enough', most of the time*^{18,19}. Epidemiological studies have repeatedly shown that most people in the community feel healthy, and most do not perceive a need to seek help from any health professional. Figure 3 shows the health and illness experience in the community which follows a Pareto distribution (also known as the 80:20 split): the "normal" nonlinear distribution typically found in biological/ecological systems²⁰.

The Pareto distribution of community health shows the following pattern: at any point in time 80% of people in the community have no perceived healthcare needs, 80% of

those seeking health care only require care from a primary-care physician (i.e. 16% of the community) – which preferably should be provided by their familiar and trusted general practitioner/family physician (Table 1c). The need of 80% of the remaining 20% is met by secondary care (i.e. 3.2% of the community), leaving a mere 0.8% of the community requiring tertiary care.

Comparisons of the health and illness experiences (Figure 4) between 1961 and 2001 showed no change in the community's health experience and healthcare needs, and if anything a slight reduction in the need for tertiary care (now 0.7%). However, there was a noticeable rise in the level of health anxiety with an increase in the number of patients reporting symptoms and concerns (750 to now 800/1000)^{18,19}.

Health anxiety, like all anxieties, result in overstimulation of the physiological stress response. Psychoneuroimmunology has described the physiological feedback loops between the hormonal, immunological and neuronal components resulting from chronic hyper-adrenergic stimulation and the subsequent inflammatory responses responsible for the negative health effects of chronic stressors^{21,22}. Surprisingly, patients mostly are unaware of their anxieties and stressors which, if unresolved, over time result in somatisation, which in turn leads to consultations for physical complaints²³. As these complaints remain unexplained within the prevailing biomedical paradigm of medical praxis (Table 1d), somatisation invariably results in the experience of poor health, which in turn is associated with increased morbidity and mortality²⁴ as well as increased health service utilisation and cost²⁵.

Health as the focus of the healthcare system

What do we mean by the term 'system', or more specifically 'complex adaptive system'? A technical definition

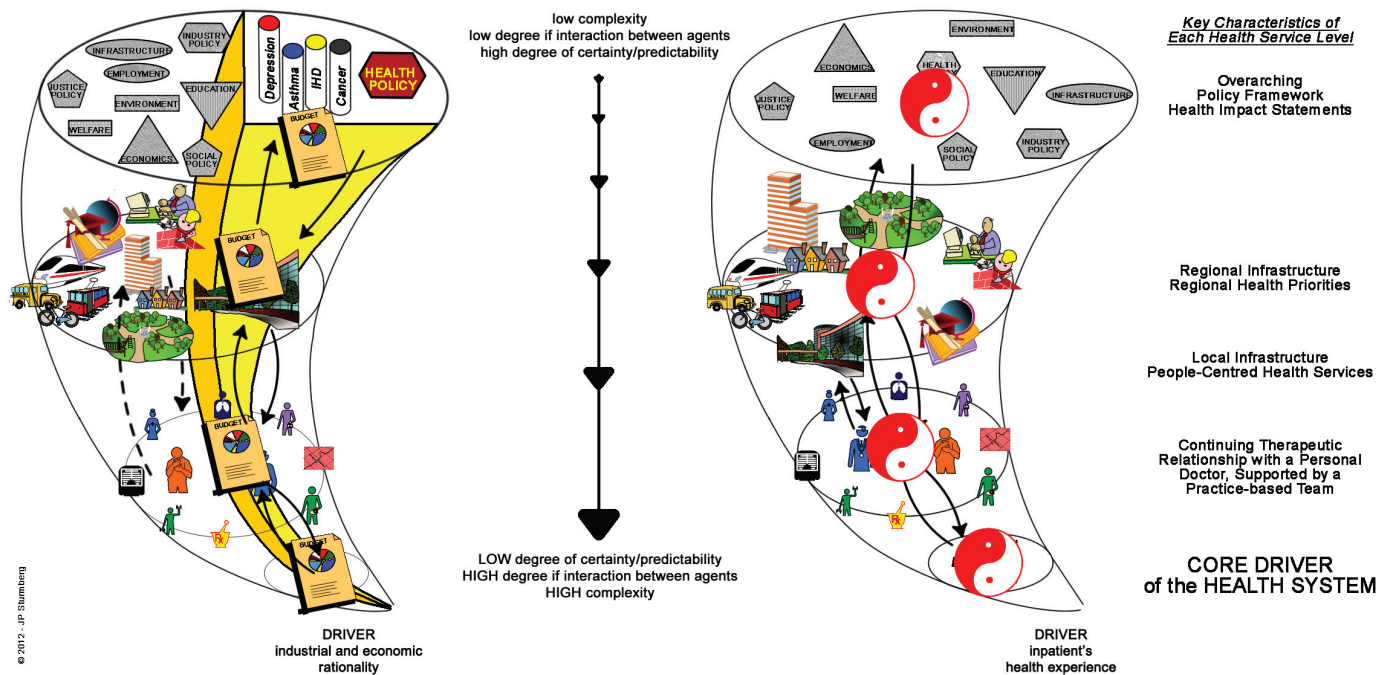


Figure 5: The healthcare vortex illustrates the integrated function of the health system at all its levels. The attractor of the system resides at the apex, and the complexities of structure and function, and their inherently increasing uncertainties, increase from the top of the vortex to its apex. Having the wrong attractor results in dysfunctional structures (e.g. siloisation according to diseases) and functions (e.g. needed services are not available as not financed) as illustrated on the left. Having the “right” attractor allows the emergence of structures and functions that supported a *health-achieving* health system.

is provided in Table 1e. A pragmatic description of the structure and function of a complex adaptive system is illustrated by the bathtub vortex metaphor²⁶. The attractor of a bathtub vortex is the combined effect of gravity and the plug hole: remove the plug and the water forms a vortex, and as we all recall from our childhood, disturbing the vortex always results in the restoration of the vortex very close to its pre-disturbance state, demonstrating the self-organising function based on the attractor (or system driver).

The effects of disturbing the vortex at different levels will lead to changes in its apex with varying degrees of time delays. The effects, and therefore the amount of interactions within the vortex, increase exponentially towards its apex, hence disturbances closer to the apex result in more dramatic changes to the vortex structure than disturbances at its top, small changes at the top in fact may

ultimately not result in any changes at all.

The *healthcare vortex* metaphor²⁷ has been developed to visualise the different agents and their interactions in the healthcare system. The healthcare vortex takes account of the various levels within the healthcare system, traditionally referred to as the macro-, meso-, micro- and nano-levels. Each level has its own agents and interactions; however, as the vortex model highlights, all agents are interconnected within and across all other levels, and are constantly and dynamically focused on its attractor^{28–30}.

Health care is ordered towards people retaining or regaining their *experience of good health*, hence the *person* and a *good personal health experience*^{6,15,31} should be at the centre of the whole health system, i.e. being the system's main attractor (Table 1f). In operational terms, this would translate to a person's partic-

ular needs shaping the configuration of all relevant agents and their interactions within the health system. This ideal requires all system levels to respond *adaptively* (rather than *prescriptively*) to a challenge, which is the basis for the emergence of best solutions for individuals and communities (Figure 5, right panel).

Discussion

Achieve health – through whole system engagement

A brief reality check reveals that the health systems are currently driven by instrumentalism in the form of guidelines and/or commercialism in the form of financial control and profit maximisation (Figure 5, left panel, example of the Australian health system), rather than meeting the patient's health experience. Hence, the health system fails patients, and at the same time its preoccupation with micro-administered disease management and/or

financial efficiency and profit fails the goals of achieving quality care and/or socially responsible use of limited healthcare resources.

As illustrated in the right panel of Figure 5, a focus on the person and his health experience means a shift in the system's attractor – or simply: system change equals attractor change. This is not only possible, but necessary, on ethical, biomedical, social and not least financial grounds.

Fundamentally health and health care are *common goods* in the sense of Aristotelian virtue ethics, and as such should be readily available in an equitable, efficient and effective fashion to meet people's needs.

True disease must be separated from illness and dis-ease experience, and recognised as separate from 'disease mongering' as a result of redefinition of 'normality' or 'medicalisation' of everyday life experiences³²⁻³⁸. In addition, the sole focus on single disease-specific management, rather than the person, has emerged as a doubtful strategy, especially for common diseases. The level of disease control or the change in overall disease control, e.g. in diabetes, bears no relationship to the patient's general health experience, independent of disease severity, number of diabetic complications, duration of diabetes, education and number of hyper- or hypoglycaemic episodes during the preceding month³⁹. Too aggressive treatment approaches indeed proved to be harmful, as in very tight glucose control resulting in increased cardiovascular mortality⁴⁰, lowering blood pressure to less than 140–160/90–100 mmHg not reducing mortality or morbidity⁴¹ or lipid lowering only having a small effect on all-cause and cardiovascular mortality⁴².

Many illnesses have their origin in social causes, an insight known for at least the past 160 years, and poignantly summarised by Rudolf Virchow on 3 November 1848: *Medicine is a social science, and politics is*

*nothing else but medicine on a large scale. Medicine, as a social science, as the science of human beings, has the obligation to point out problems and to attempt their theoretical solution: the politician, the practical anthropologist, must find the means for their actual solution*⁴³.

What is needed is a rethinking of the purpose of health services. Health services must achieve *health*. To that end, more is gained by creating health-promoting environments and fostering health-enabling behaviours, rather than adhering ever more rigidly to ever more stringent approaches of passive, paternalistic and dependency-producing management practices by health professionals (or as Einstein said: Insanity is doing the same thing over and over again and expecting different results.).

This rethink will need to embrace complex adaptive systems thinking, entailing first and foremost a constant awareness of the importance of defining the "right" system attractor (or core value)³⁰. This inevitably will lead to transformational change strategies: collaborative cross-discipline, sectors and organisation conversations and practices; on going iterative learning; and transformational leadership⁴⁴.

The *Shape up Somerville* (Table 1g) project is an illustrative example of how the health professions' responsibility to overcome poor health – the priority issue in Somerville being childhood obesity – in a diverse and socially disadvantaged community can be achieved by thinking and acting system-wide. The project's aim was a *community-based environmental change intervention* that would alter an "obesigenic" environment by increasing physical activity and full day access to healthy food in schools, homes and the community at-large. This resulted in improvement of overall food intake, daily physical activity levels and healthier food choices in the children's environment at school and home, with a

'trickle down' improvement in their parents, and an improvement in the community's safety of playgrounds, walk and cycle ways, and the availability of restaurants offering affordable healthy meals. The *whole of community* approach achieved self-sustainability as residents appreciated their improved health and wellness, and businesses associated with healthier lifestyle choices benefited from their changed business practices⁴⁵.

Achieve health – think and speak health

Considering *health* as a complex-dynamic subjective state stands in stark contrast to the prevailing, mostly tacitly held, reductionist understanding of health equating to 'absence of disease'. Focusing on the complex adaptive dynamics of each person's health experience requires more time, more time that humanises medical care⁴⁶ and improves its effectiveness and efficiency – as Tudor Hart put it: *When doctors and patients consult with optimal efficiency, they become co-producers. In essence, consultations are not units of consumption, but units of production. Something has been created at the end of consultations, which was not present at their beginning: more and better understanding of patients' problems, of possible solutions, and of the personal circumstances in which these must be applied, leading to health gain as a social product as well as a personal good. ... no amount of technically excellent care will produce optimal outcomes if patients are not actively engaged in managing disease, particularly chronic disease*⁴⁷.

Key issues to *think* and *speak* about in the quest to *achieve* a health system that delivers *health* would include:

- Promulgating awareness of health being a personal experiential state;
- Developing national policy frameworks that strengthen the role, objectives, standing and resourcing of primary health care;

- Attracting and retaining health-care professionals in the primary healthcare workforce;
- Creating incentives to address quality, efficiency and equity in community-based health care;
- Fostering the provision of patient (person)-centred, comprehensive, co-ordinated and continuing care in the community;
- Promoting the co-location of medical and community services within and beyond the health sector;
- Building flexible practice-based primary-care teams to include nurses, allied health professionals and community outreach services;
- Becoming part of decision-making when patients need secondary- and tertiary-care services;
- Providing patient held and controlled e-health solutions to maintain personal health records;
- Achieving on going engagement of primary healthcare services with their communities in local service planning; and
- Developing community-wide initiatives to achieve health-promoting physical and social community environments.

Contributions on these and related themes are greatly encouraged to be brought to OA Family Medicine.

Conclusion

Health care must focus on people and their health (and illness) experiences. A *health-focused* healthcare system will be aligned to provide the structures and functions that allow people to regain their *personal health*, defined by their own subjective experience.

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