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Outcomes in CME/CPD - Special Collection: How to make the "pyramid" a perpetuum mobile

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ABSTRACT

Continuing medical education (CME) should not be an end in itself, but as expressed in Moore's pyramid, help to improve both individual patient and ultimately community, health. However, there are numerous barriers to translation of physician competence into improvements in community health. To enhance the effect CME may achieve in improving community health the authors suggest a kick-off/keep-on continuum of medical competence, and integration of aspects of public health at all levels from planning to delivery and outcomes measurement in CME.

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Continuing medical education (CME) should not be an end in itself, but as expressed in Moore's pyramid [1], help to improve both individual patient and ultimately community health. However, although the concept of "ascent to the summit" [2] should not be misunderstood as meaning that only a few will be able to reach the peak of Mount Everest, we need to realise that there is no simple way of improving community health.

As illustrated in Figure 1,

(1) Competence does not inevitably lead to Performance:

- Due to national regulations and/or underfunding of (parts of) health-care systems, availability of treatment may be limited and/or unequally distributed in or between different countries [e.g. 3–8]. Resources to meet challenges such as Covid-19 may be insufficient: shortages in staff, beds in intensive care units, respirators or personal protective equipment have uniformly become the responsibility of physicians [9–15]. In particular in Europe, the existence of more than 25 health system jurisdictions in a relatively limited sized area, inevitably leads to a non-uniform picture of medical practice.
- The evidence base supporting action may not be sufficiently robust [e.g. 16–18], weak or even absent [e.g. 19,20].
- Collegiate recommendations (e.g. in guidelines) maybe ambiguous or biased [e.g. 21–27].
- There may be differences in the individual approach to practice "first, do no harm" with physicians accepting underdiagnosis for the sake of correctness (i.e. optimal specificity), while others do not want to miss a diagnosis and thereby accept overdiagnosis (i.e. favouring sensitivity over specificity) [e.g. 28,29].
- There is currently no universally agreed concept on how to translate evidence into language, and current concepts are inconsistent and/or difficult to put into practice [30–32]. Thus, not surprisingly, commitment as a consequence of practice recommendations has been shown to vary substantially [33,34].
- It is probably no more than realistic to assume that doubts and distrust, based on previous experience of bias, are additional barriers to translation of competence into performance [e.g. 26,35–38].
- Patients fail or even refuse to seek medical advice [e.g. 39–44].

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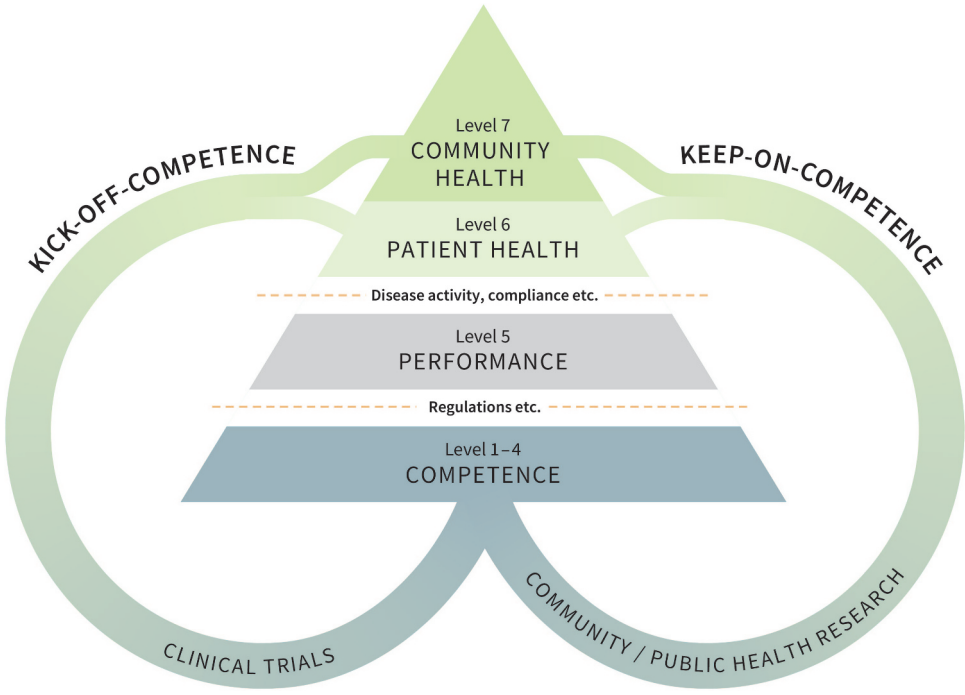

Figure 1. The "kick-off/keep-on continuum" of medical competence.

(2) Appropriate performance will not always improve patient health due to:

- variation in disease severity or even uncontrollable disease activity
- variation in co-morbidities
- lack of (informed) consent
- patient non-compliance [e.g. 45–47]
- secular changes in risk [48] or
- regional/local differences in risk [e.g. 49–51]
- treatment of patient groups excluded from published studies [e.g. 52] (e.g. elderly or patients with comorbidities), for whom the treatment effect has not been validated
- health inequities [e.g. 53,54]

Considering community health adds a

- quantitative dimension:

In a theoretical scenario of, for example, a new pharmacological treatment, "level 4/5-CME" would form the competence needed to start ("kick-off-competence", Figure 1). But targeting community health, requires that CME is informed by results of community health research. This research forms the evidence base, which will keep the process going, and will ultimately lead to improvement of community health ("keep-on-competence", s. Figure 1). However, if community (and public) health research should systematically be considered for CME, some important issues have to be addressed:

What is a meaningful improvement of community health that CME providers should promote as a benchmark in their CME activities? Which role do surrogate endpoints play, in particular when a drug has been approved without evidence that it improves patient prognosis [55,56]? So far public health research has often been hampered by restrictions in accessibility of data. This may change for the better with the more widespread use of electronic health records [57], though (at least in Europe) data protection regulations may still interfere with access to patient data [58].

Physicians probably always intend that theoretically "all" their (eligible) patients should benefit from, e.g., a new treatment. Therefore, is "100%" the benchmark? This has never been resolved in health-care system research, and Hagen et al.

[59] have demonstrated what is required, if we want to achieve on a population level, what might be achievable on the institutional level [60].

Furthermore, when and/or how often should the state of play be determined? Physicians may achieve relevant changes in quantitative terms extremely quickly, as has been shown by the exploding number of prescriptions for hydroxychloroquine under public pressure to "do something" against Covid-19 in the US [e.g. 61,62]. By contrast it may take 5–10 years until prescription rates for new medications have reached a plateau [e.g. 63–66]. What is the impact in quantitative terms of the factors mentioned under 1. and 2. on the latter time course? What is the relative weight of evidence compared to (among others) the legal framework in which physicians are working [e.g. 67,68], reimbursement regulations [e.g. 69], or patient will [e.g. 61,70]? There are probably more factors inherent in our attitude towards patient care, which determines our position between activism and scepticism [62,71]. Further investigation in this complex matter is needed clearly to delineate, to what extent community health effects can be attributed to physicians' primary medical motivation.

- qualitative dimension:

- Worldwide, physicians have claimed professional autonomy in building patient-physician relationships [72]. Currently, professional autonomy is most often affected by regulatory actions and commercial interests, in particular the pharmaceutical and medical device industry. Considering community health adds further to this list: though health insurance companies or hospital owners do not fall under the Accreditation Council for CME (ACCME) definition of a commercial interest [73], they definitely have a distinct interest in how health-care should be delivered, and part of the health-care system research is based on their data [e.g. 74]. Thus, similar to activities to build "kick-off-competence" we need to define independence of CME also for "keep-on-competence". This includes criteria for institutional conflicts of interest, and bias in content provided by the institutions mentioned above [75]; the same also applies to regulators in state-driven health-care systems (e.g. NHS in the UK).
- The maximum benefit for community health may only be achieved, if we optimise interdisciplinary, and interprofessional CME (and cooperation) [e.g. 76,77].
- Community (and public) health research has its own methodological framework, which needs to be addressed in building "keep-on-competence", and
- it may have very different sources of information compared to what makes up "kick-off-competence", which need to be validated in their role to inform "keep-on-competence [e.g. 78].
- Selection of Faculty in CME targeting community/public health should ideally include all stakeholders, including regulators, politicians, etc. (see also below)
- But considering community health also reminds us of our role as expert citizens: Back in 1848, the German pathologist Rudolf Virchow, who had also been a member of the Berlin City Council and the Prussian Parliament for many years, had defined the relation between medicine and politics: "Medicine is a social science, and politics is nothing more than medicine on a large scale". In the context of CME and community health this highlights that we as physicians have the responsibility to make transparent to the community, as well as their politicians, that treatment of the individual patient will only become effective, if structural changes within the community are also taken. This interdependence of patient care and community care has recently been succinctly demonstrated during the current covid-19 pandemic [e.g. 53,54,79–81]. We may not be in the position of Rudolf Virchow, who (among others) initiated a sewer system for the City of Berlin, and regulation on obligatory assessment of Trichinae, binding for all butchers in Prussia, but today we still struggle to determine the red line beyond which, we as individual physicians can no longer be able to compensate for deficits, which may only be resolved by political action. Thus, CME targeting community health will inevitably be political, and should include all stakeholders in discussing progress and barriers in community health. This also highlights that choosing *community* health as top of the pyramid is appropriate, since for the large majority of physicians, the community is their professional reference level. However, there will remain issues which can only be resolved by political and subsequent legislative action.

What are the implications for the concept of CME, and CME providers?

Currently, CME is often planned according to the assumption that repetitively updating kick-off-competence (typically focused on knowledge dissemination), will ultimately have an effect on patient as well as community health. On the one hand there is some evidence for the impact of this strategy on physician performance and patient outcomes [82], but on the other hand this is not the appropriate strategy to address gaps in community health, and tends to create an attitude of unbalanced activism.

It could thus be considered as "division of labour" to continue with "level 1–5" CME activities and stimulate (other) providers to organise more "level 6–7" CME. We should instead promote a different model: change the one-way ticket to a roundtrip, or: **make keep-on-competence the new kick-off-competence** (s. Figure 1). To achieve this goal we need to:

- define independence in community/public health research to ensure unbiased content
- define which evidence is applicable to the particular community, i.e. introduce research methodology on a case by case basis into each CME activity [75]
- make community health part of the needs assessment, content selection, and definition of outcomes
- include community health/public health experts within Faculty
- revise current time schedules, since including community health into CME will in most cases need more time than hitherto, also because
- one of the biggest challenges for inclusion of community health into CME on a large scale will be that there is a substantial lack of data at the community level. Thus, inclusion of community health matters will probably less often follow a teacher-learner scenario, but will more be a discussion between peers.
- revise (if applicable) "knowledge tests" as evaluation of CME, and introduce items with an impact on community health, which can be the more specific as detailed data related to community health are available.
- find new ways to integrate community health into CME with primarily international audience (e.g. by presentations of local experts through video conferencing)

What are the implications for CME accrediting bodies?

Community health is the sum of the various forces working for and against community health. In targeting community health CME must therefore take responsibility for discussing **all** the pros and cons involved in improving community health. Current definitions of how to conduct accredited CME theoretically cover aspects of community health [83]. However, most CME currently does not deliberately address community health, since faculty, programme schedules, content, and outcomes, would have to be different in CME aimed at keep-on-competence. This would be accessible to external assessment (as part of the accreditation process), and thus even easier to assess than changes in language, management of data volume, or sources of information in CME [75,84]. Worldwide, accrediting bodies are currently in the process of defining harmonised criteria for accreditation of CME [83]. How to better implement community health-orientated CME might become part of this project.

Disclosure Statement

Disclosure statements can be found under "supplementary material".

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