A **systems thinking** approach may enable us to identify **contexts of practice**, and may expose **components and relationships** that further our **understanding of clinical practice** when developing competency frameworks.

A 'systems thinking' conceptual framework to explore clinical practice.

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INTRODUCTION

The nature of clinical practice is ever-changing, varies according to the attributes of those enacting it, and poses complex questions that must be considered within context. As such, healthcare professionals need the ability to understand and respond to the larger contexts of the healthcare system. Existing approaches to describing clinical practice may be limited in how they conceptualize such context and complexity.

METHODS

We sought to evaluate how conceptualization of paramedic practice may be optimized using a systems thinking approach. We examine the role of combining an adaptation of Bronfenbrenner's Ecological Systems Theory (EST) and complexity thinking as ways of describing paramedic practice.

RESULTS

EST can be adapted to outline the elements of clinical practice (Figure 1). This obligates a focus on various healthcare system levels which are often missing from our descriptions of practice. Complexity thinking obligates a focus on the non-linear, unpredictable nature of relationships between these elements. When combined, these frameworks allow for identification of elements within the system that may have value in describing clinical practice (Figure 2). We illustrate how aspects of paramedic practice may be ignored until viewed from a merging of these approaches.

CONCLUSIONS

Merging EST with complexity thinking provides an opportunity to reflect the complex realities of clinical practice when attempting to describe it. This conceptual framework promotes a focus on factors from macro level to individual patient level, as well as on the relationships within the system. This can be used as a foundation to inform future efforts to represent clinical practice, such as when developing competency frameworks.
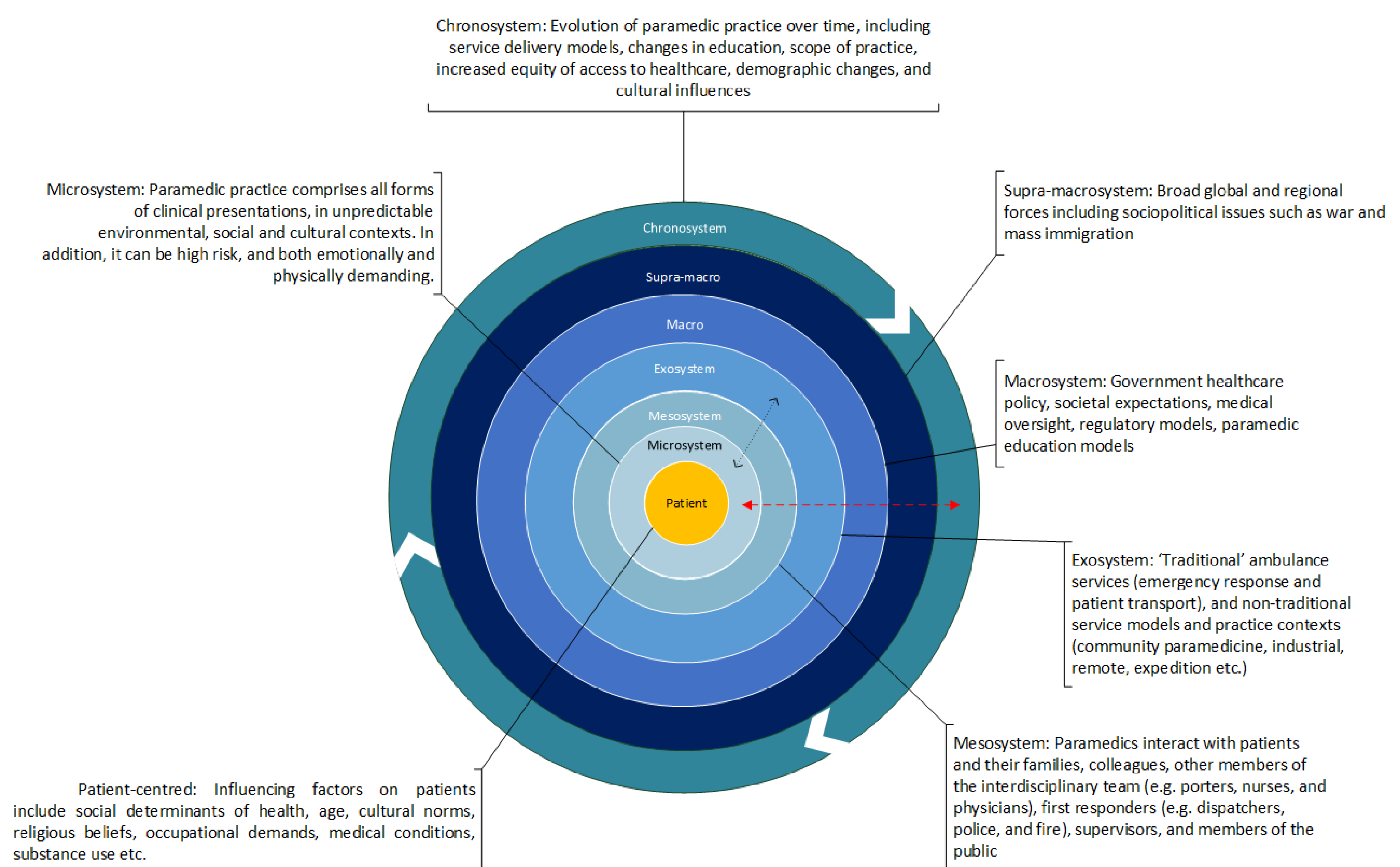

Figure 1. The system of paramedic practice informed by EST.

Chronosystem: Evolution of paramedic practice over time, including service delivery models, changes in education, scope of practice, increased equity of access to healthcare, demographic changes, and cultural influences

Microsystem: Paramedic practice comprises all forms of clinical presentations, in unpredictable environmental, social and cultural contexts. In addition, it can be high risk, and both emotionally and physically demanding.

Supra-macrosystem: Broad global and regional forces including sociopolitical issues such as war and mass immigration

Macrosystem: Government healthcare policy, societal expectations, medical oversight, regulatory models, paramedic education models

Exosystem: 'Traditional' ambulance services (emergency response and patient transport), and non-traditional service models and practice contexts (community paramedicine, industrial, remote, expedition etc.)

Mesosystem: Paramedics interact with patients and their families, colleagues, other members of the interdisciplinary team (e.g. porters, nurses, and physicians), first responders (e.g. dispatchers, police, and fire), supervisors, and members of the public

Patient-centred: Influencing factors on patients include social determinants of health, age, cultural norms, religious beliefs, occupational demands, medical conditions, substance use etc.
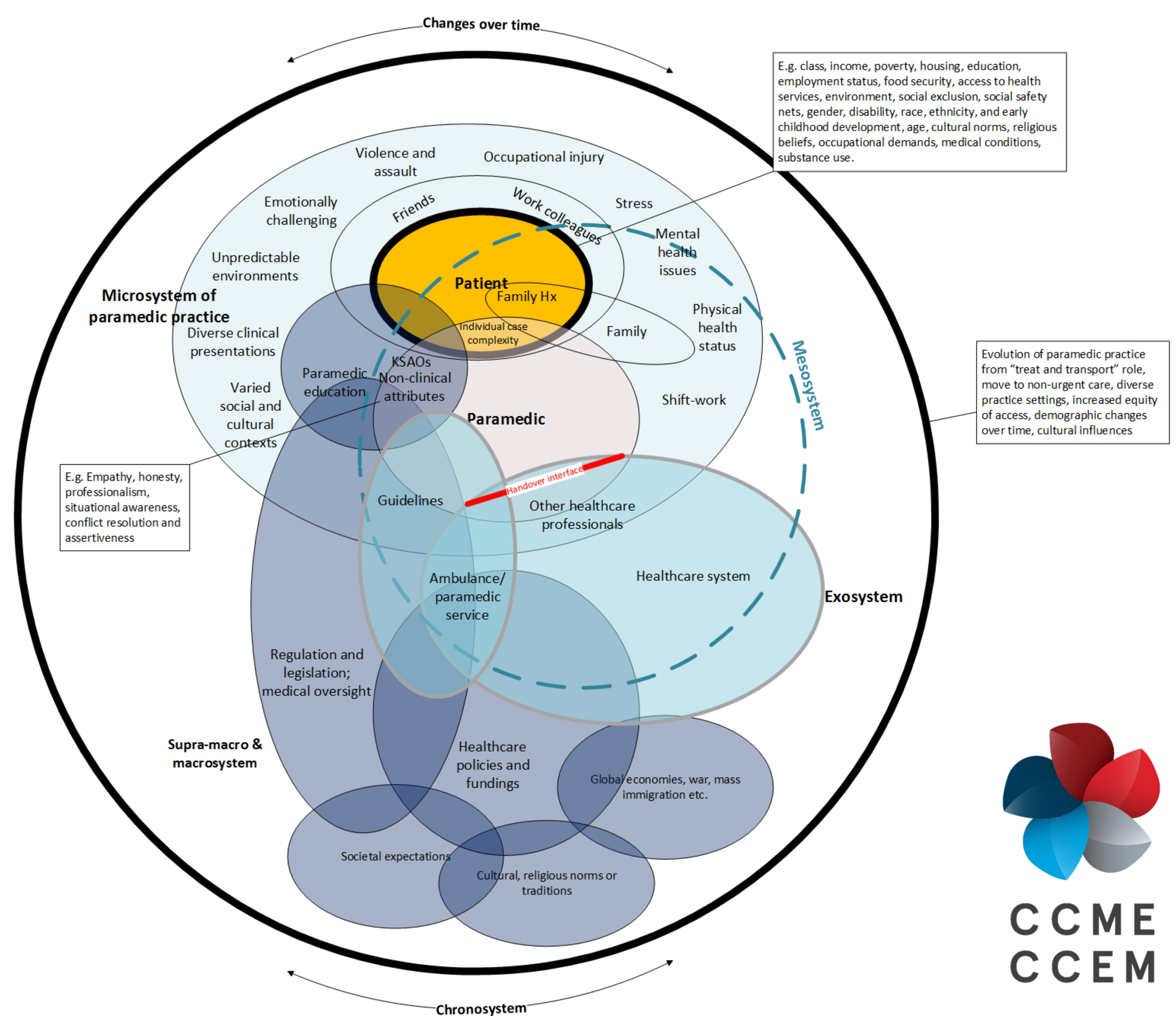

Figure 2. The 'real world' interactions of paramedic practice, informed by EST and complexity thinking, and illustrated via a systems map. Note: (a) size of elements is irrelevant; (b) overlaps do not illustrate significance but rather illustrate influence in an easier to understand form than influence diagrams; (c) colours of elements are informed by EST diagram; (d) model is a partial representation. KSAOs = knowledge, skills, attitudes, other attributes (i.e. competencies)

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