

Complexity in General Medicine

Jose Luis Turabian

Specialist in Family and Community Medicine. Health Center Santa Maria de Benquerencia. Regional Health Service of Castilla la Mancha (SESCAM), Toledo, Spain.

***Corresponding Author:** Jose Luis Turabian, Health Center Santa Maria de Benquerencia Toledo, Spain.

Received Date: April 10, 2026; **Accepted Date:** April 17, 2026; **Published Date:** April 24, 2026

Citation: Jose L. Turabian, (2026), Complexity in General Medicine, *J. Biomedical Research and Clinical Reviews*, 12(3); DOI:10.31579/2692-9406/250

Copyright: © 2026, Jose Luis Turabian. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

General and community medicine functions within a framework of complexity in which patients' health problems arise from dynamic interactions among biological, psychological, social, cultural, and environmental factors, making linear and purely evidence-based approaches often insufficient. Unlike specialized medicine, primary care requires contextual, holistic, and transdisciplinary decision-making that recognizes the interconnected and unpredictable nature of human health. Patients do not present with isolated diseases but with overlapping family, social, economic, and informational influences that shape illness and care outcomes. The metaphor of the crowded cabin scene from the film *A Night at the Opera* illustrates how the consultation room symbolically contains not only the patient, but also their family, living conditions, beliefs, social pressures, administrative burdens, and digital influences. In this complex environment, the physician must manage nonlinear processes, multimorbidity, psychosocial vulnerability, and contextual factors while balancing clinical, social, and relational dimensions of care. Diagnosis becomes a qualitative and biopsychosocial interpretation of the patient's situation, and healing is viewed less as the elimination of disease and more as the progressive "unblocking" of complex life situations. Thus, general and community medicine requires a medicine of complexity grounded in relationships, context, adaptability, and personalized care.

Key words: general and community medicine; complexity science; primary care; biopsychosocial model; holistic care; contextual diagnosis; complex systems; multimorbidity; personalized medicine; nonlinear processes; psychosocial vulnerability; transdisciplinary care; social determinants of health; patient-centered care; complexity in healthcare.

Introduction

Different types of problems require different kinds of knowledge, and the generalist role of primary care physicians, in contrast to specialization, more frequently involves decision-making in a complex systems environment where quantitative evidence-based medicine and evidence-based guidelines are insufficient. Other scientific paradigms are needed to be used in the context of general and community medicine, which works with complex and chaotic systems [1].

In other words, there are no truly simple, complex, or highly complex (chaotic) problems; rather, it depends on the level of depth of the problem's study. In general, and community medicine all problems are inherently highly complex, and classifying them otherwise is conventional, based on where we arbitrarily stop our inquiry [2].

The human body is composed of multiple interacting and self-regulating physiological systems, including biochemical and neuroendocrine feedback loops. An individual's behavior is determined partly by an internal set of rules based on past experiences and partly by unique and adaptive responses to novel environmental stimuli. The network of relationships in which individuals operate contains many different factors that determine their beliefs, expectations, and behavior. Furthermore, individuals and their immediate social relationships are more deeply embedded in broader social,

political, and cultural systems that can influence outcomes in entirely new and unpredictable ways. To all this, we must add that these interacting systems are dynamic and fluid, and that a small change in one part of this network of interacting systems can trigger a much larger change elsewhere through amplification effects. By intervening in one complex system, we often generate effects in other areas. This is becoming increasingly evident in our efforts to address the large-scale health problems that our own actions have created [3, 4].

So how does a medicine of complexity in the general and community medicine differ from the traditional approach? In complex systems, attention is focused on the relationship between its parts, rather than on the parts themselves [5].

Biopsychosocial causes give rise to scenarios that behave like the plots of television series: the characters, interconnected directly or tangentially, find themselves embroiled in a new mess before they can get out of the previous one. This means that several plots exist simultaneously (at least two or three), where various causal stories intertwine, and all of them present moments of knots, entanglements, tangles, disorder, and confusion, which partially overlap for each character, without a final resolution [6].

These concepts, fundamental for general and community physicians, while intellectually comprehensible, are not easily visualized in daily practice and

are difficult to explain to residents. Metaphors and analogies allow us to understand something unknown in terms of something more familiar. Therefore, they constitute a common resource in all sciences, which use everyday words to name complex realities. Metaphors, analogies, similes, and models, are cognitive tools through which something unknown is understood in terms of something known [7-10].

The famous cabin scene, considered one of the funniest in cinema, which appears in the film "A Night at the Opera" (1935) [11], directed by Sam Wood, in which Groucho Marx, Harpo Marx, and Chico Marx fill a small ship's cabin with a multitude of people and objects, can be seen as a metaphor for a general practitioner's office, where a patient enters the consultation room alone, but virtually their family, context, and community follow them. This is an analogy frequently used in medical sociology to explain the complexity of primary and community care. Just as in the famous scene from A Night at the Opera, where a tiny space is filled with people to the point of absurdity, the general practitioners and community doctor's office is never truly a space for just two people. Physically, the patient enters, but their caregivers, children, or parents and context also enter with them [12-14].

In complex situations, medical decisions are not made in isolation: the doctor must negotiate with the family's expectations, the dynamics of caregiving at home, and often with the "child who lives far away" and offers their opinion by phone, etc. A person's illness is, in reality, a process that affects the whole family and its context, and is in turn affected by those changes in the context. The patient's living conditions come into play. As social medicine aptly describes, diabetes cannot be treated if the patient is also experiencing job insecurity, a lack of resources to buy fresh food, or living in a damp home. These "unwanted guests" affect the success of any medical treatment. Currently, the patient also arrives "accompanied" by the infodemic and social media. The doctor no longer simply talks to the patient but must also grapple with what the patient has read in forums or consulted on Artificial Intelligence, the aesthetic or social pressures of their environment, and the stigma that the community imposes on certain illnesses (mental health, obesity, AIDS, etc.). Like the waiters trying to enter with trays in the Marx Brothers' scene, the administrative system exerts pressure on the consultation. The doctor must manage sick leave, insurance reports, and legal requirements that cram clinical time into their schedule, making the space for listening increasingly limited.

In this metaphor, the general practitioner and community physician acts like Groucho Marx: trying to maintain control and humor amidst a chaos of overlapping demands. The doctor's skill lies not only in diagnosing physical illness but also in managing all the "characters" who have entered the cabin so that, ultimately, the patient receives the care they need without the entire system collapsing.

But what are the key aspects of complexity in general and community medicine? In this scenario, the key aspects are:

1. **Nonlinear Paradigm:** Unlike the simple (and complicated) cause-and-effect model, complexity implies that small changes in a patient can generate large, unexpected effects, and vice versa [15, 16].
2. **Patients with High Complexity:** This refers to individuals with multiple chronic conditions, high functional dependence, and often adverse psychosocial factors, requiring an interdisciplinary approach [17-22].
3. **Holistic, Qualitative, and Contextual Diagnosis and clinical cure as the unblocking of situations:** The diagnostic sequence based on symptomatic criteria, which follows the medical model of disease, is transformed into other forms of qualitative diagnostic approach through the holistic impression the physician gains of the patient's situation. The context is what controls and directs the clinical analysis [23]. The primary diagnostic approach disappears and is replaced by the biopsychosocial narrative of the diagnosis (similar to unfolding a map), and the concept of clinical cure also disappears and is replaced by the unblocking of situations and the emergence of new scenarios [24]. The more complex the problems, the more necessary context-based decisions become [25].

4. **Focus on Precision Medicine:** Although often perceived as disparate approaches—one focused on social context and the other on molecular biology—personalized medicine is transforming primary care to better manage patient complexity. Complexity utilizes genetic and molecular tools to personalize treatment and prevention, tailoring medicine to individual susceptibility [26-28].

In summary, from a methodological and theoretical perspective, general and community medicine exhibit a complexity that requires a holistic, ecological, contextual, and transdisciplinary approach.

Conclusion

General and community medicine is fundamentally characterized by complexity, where health and illness emerge from the continuous interaction of biological, psychological, social, cultural, and environmental factors. In this context, traditional linear and purely evidence-based approaches are often insufficient to address the realities of patient care. Primary care physicians must therefore adopt holistic, contextual, and transdisciplinary perspectives that recognize the interconnected and dynamic nature of human health. The consultation process extends beyond the individual patient to include family relationships, socioeconomic conditions, community influences, and digital information environments. Managing complexity requires not only clinical expertise but also adaptability, communication, and the ability to interpret biopsychosocial narratives. Ultimately, the medicine of complexity emphasizes relationships, context, and personalized care, redefining diagnosis and healing as ongoing processes of understanding and unblocking complex life situations.

References

1. Martin CM, Sturmberg JP. (2005). General practice — chaos, complexity and innovation. *Med J Aust.*; 183:106–109.
2. Turabian JL, Perez Franco B. (2010). An easy or difficult case? Shapes drawn from life. Uncertainty based family medicine. *Semerger.*;36(9):485-490.
3. Turabian JL. (2018). Complexity in Health Care. *J Health Care Prev.*; 1: e101.
4. Schiefeloe PM. (2021). The Corona crisis: a wicked problem. *Scand J Public Health.*;49(1):5-8.
5. Turabian JL. (2026). The Concepts of Holistic, Comprehensive/Integrated, And Systemic in Family Medicine: Three "Culinary" Metaphors for A Definitive Understanding. *J General Medicine and Clinical Practice.*; 9(3).
6. Turabian JL. (2019). Biopsychosocial Causality in General Medicine: Knot, Ball, and Tangle. *Epidemiol Int J.*; 3(1): 000121.
7. Huyck PH, Kremenak NW. (1980). Design and memory. Computer programming in the 20th Century. New York: McGraw-Hill Book Company.
8. Parse RR. (2022). Metaphor: Meanings and Human becoming Metaphorical Truths. *Nursing Science Quarterly.*; 35(1): 15–19.
9. Howie P, Bagnall R. (2013). A beautiful metaphor: transformative learning theory. *International Journal of Lifelong Education.*; 32(6): 816–836.
10. Turabian JL, Perez-Franco B. (2016). The Family Doctors: Images and Metaphors of the Family Doctor to Learn Family Medicine. New York. *Nova Publishers.*
11. A Night at the Opera (film). Wikipedia. (2026); 22 March.
12. Turabian JL and Perez-Franco B. (2016). The Companion of the Patient in the Family Doctor's Office: Making Visible the Guardian Angel. *J Community Med Health Educ.*; 6:453.
13. Turabian JL, Minier-Rodriguez LE, Cucho-Jove R, Rodriguez-Almonte FE, Villarin-Castro A. (2016). The Patient Companion in the Consultation of Family Medical Practice is an Indicator of Hidden Family Problems. *Arch Fam Med Gen Pract.*; 1:001.
14. Turabian JL, (2015). Pérez Franco B. Models of care centered on the patient's companion. The family and the context: on the

- edge of the doctor-patient relationship in family medicine. Saarbrücken, Germany: *Editorial Académica Española*.
15. Turabian JL. (2026). Transforming Health/Illness on A Large Scale with Brief, Low-Cost Interventions. *Clinical Research and Clinical Trials*.; 15(3).
 16. Turabian JL. (2026). Imperceptible Interventions that Change a Situation to Improve Health: That Red Dot in the Middle of the Painting. *J Dis Dis Tre*.; 6(1): 1-3.
 17. Turabian JL. (2020). The Character and Destination of Multimorbidity: Reflections for Classification. *Archives of Community and Family Medicine*.; 3(2): 75-79.
 18. Turabian JL. (2020). Theory of the Evolution of Multimorbidity: It is Created, In A Small Part but Significant, by the Medical Intervention Itself. *COJ Rev & Res*.; 2(3).
 19. Turabian JL. (2019). Reactions Adverse to Drugs and Drug-drug Interactions: A Wonderful Spiral of Geometric Growth Produced by Multimorbidity and Polypharmacy. *J Community Prev Med*.;2(2):1-5.
 20. Turabian JL. (2019). Doctor-Patient Relationship and Multimorbidity: The More Extraordinary a Case Seems, the Easier it is to Solve it. *Arch Fam Med Gen Pract*.; 4(1):82-89.
 21. Turabian JL. (2018). Notes for a Theory of Multimorbidity in General Medicine: The Problem of Multimorbidity Care is Not in Practice, but in the Lack of Theoretical Conceptualization. *Journal of Public Health and General Medicine*.; 1(1): 1-7.
 22. Turabian JL. (2015). Helping Dr. Theseus leave the labyrinth of multiple drug interactions. Rapid Response to Guidelines, polypharmacy, and drug-drug interactions in patients with multimorbidity. *BMJ*.;350:h1059.
 23. Turabian JL. (2009). Specific tools to manage complex consultations in general practice. Rapid response to Excluding serious illness in feverish children in primary care: restricted rule-out method for diagnosis. *BMJ*.;338: b1187.
 24. Turabian JL, Pérez Franco B. (2010). An easy or difficult case? Shapes drawn from life. Uncertainty based family medicine. *Semerger*.;36(9):485-490.
 25. Turabian JL. (2018). Contextual treatment: a conceptualization and systematization from general medicine. *Int J Fam Commun Med*.;2(3):137-144.
 26. Jamalinia M, Weiskirchen R. (2025). Advances in personalized medicine: translating genomic insights into targeted therapies for cancer treatment. *Ann Transl Med*. Apr 30;13(2):18.
 27. Aron DC. (2023). Precision Medicine and the Challenges of Human Complexity. *Psych other Psychism*.; 92 (6): 349-353.
 28. Welzel C, Ertaylan G, Babina IS, et al. (2026). Regulating complexity in AI-enabled omics and multi-omics technologies for precision medicine. *npj Digit. Med*.;9, 247.
 29. Modernizing Primary Care Through Personalized Medicine. Signature MD. 2026.



This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article Click Here:

Submit Manuscript

DOI: [10.31579/2692-9406/250](https://doi.org/10.31579/2692-9406/250)

Ready to submit your research? Choose Auctores and benefit from:

- fast, convenient online submission
- rigorous peer review by experienced research in your field
- rapid publication on acceptance
- authors retain copyrights
- unique DOI for all articles
- immediate, unrestricted online access

At Auctores, research is always in progress.

Learn more: <https://auctoresonline.org/journals/biomedical-research-and-clinical-reviews->