REVIEW ARTICLE

IJETV Vol. 11, Issue 2, 2025 Print ISSN: 2394–6822 Online ISSN: 2395–4272

Primary Care in the Era of Multimorbidity: Policy Challenges for Integrated, Patient-Centred, Polypharmacy-Sensitive Care

Pragnesh Parmar[1*], Gunvanti Rathod[2]

[1]Additional Professor and HOD, Forensic Medicine and Toxicology, AIIMS, Bibinagar, Telangana, India

[2]Additional Professor, Pathology and Lab Medicine, AIIMS, Bibinagar, Telangana, India

Abstract

Background: Multimorbidity, the co-occurrence of two or more chronic conditions, is now the prevailing reality in primary care, particularly among ageing and socioeconomically disadvantaged populations. However, most health systems remain structurally oriented toward acute, single-disease management. This mismatch has contributed to fragmented care, excessive polypharmacy, and diminished patient experience.

Objectives: This review critically examines the policy and practice challenges in delivering integrated, patient-centred, and polypharmacy-sensitive care for multimorbid individuals. It identifies key barriers to implementation and outlines system-level reforms required to align primary care delivery with the complex realities of multimorbidity.

Methods: Drawing on global evidence, case studies, and health systems frameworks, this narrative review synthesises findings across domains including care integration, workforce models, financing, information infrastructure, clinical guidelines, and patient engagement.

Findings: Successful models share common elements: team-based care, interoperable digital tools, goal-oriented planning, rational prescribing, and active patient involvement. Yet, scale-up is often limited by political inertia, siloed funding streams, and capacity gaps. Structural reforms - such as payment redesign, co-produced service planning, and outcome measures aligned with patient priorities - are essential for sustainable transformation.

Interpretation: Multimorbidity must be treated as a defining feature of 21st century primary care, not as a deviation from the norm. Policy responses should prioritise integration, equity, and person-centeredness. Health systems that fail to adapt risk perpetuating inefficiencies and compromising care quality for their most vulnerable patients.

Keywords: Multimorbidity, Primary Care, Integrated Care, Health Policy, Polypharmacy, Patient-Centred Care, Health System Reform, Chronic Disease Management, Health Equity, Co-Production.

Int J Eth Trauma Victimology (2025). DOI: 10.18099/ijetv.v11i02.03

Introduction

Multimorbidity, the presence of two or more chronic conditions in an individual, is now a defining feature of primary care, particularly in ageing and socioeconomically disadvantaged populations. It affects over one in four adults globally, with prevalence exceeding 60% among those aged over 65 in high-income countries and rising rapidly in low- and middle-income countries (LMICs).[1-4]

Despite this shift, primary care systems remain largely oriented toward acute, single-disease models. Patients with multimorbidity often encounter fragmented services, conflicting treatments, and burdensome care navigation - leading to suboptimal outcomes, higher costs, and reduced quality of life.[5-7] Challenges, such as polypharmacy and poor provider coordination, further complicate care delivery.

Although research on multimorbidity has grown, health policy responses remain limited. Most national strategies prioritise disease-specific programs, overlooking the complexity of multimorbidity in planning and evaluation frameworks.[8]

Corresponding Author: Pragnesh Parmar, Additional Professor and HOD, Forensic Medicine and Toxicology, AIIMS, Bibinagar, Telangana, India, e-mail: drprag@gmail.com

How to cite this article: Parmar P, Rathod G. Primary Care in the Era of Multimorbidity: Policy Challenges for Integrated, Patient-Centred, Polypharmacy-Sensitive Care. Int J Eth Trauma Victimology. 2025;11(2):16-21.

Source of support: Nil

Conflict of interest: None

Received: 08/08/2025; **Received in revised form:** 23/11/2025;
Accepted: 25/11/2025; **Published:** 31/12/2025;

This misalignment calls for a fundamental redesign of primary care - centred on integration, patient-centred approaches, and rational prescribing - to meet the realities of today's health needs.

The Fragmentation Problem: Health Systems Not Designed for Complexity

Primary care systems remain largely structured around single-disease management, with clinical pathways, funding, and

quality metrics tailored to vertical, condition-specific care.[9-10] This design creates fragmented experiences for multimorbid patients, who often navigate multiple providers, conflicting advice, and redundant treatments.[11]

Such fragmentation increases the risk of adverse events, therapeutic duplication, unnecessary investigations, and hospitalisations.[12,13] It also shifts the burden of coordination onto patients and families, disproportionately affecting those with limited health literacy and compounding inequities.[14]

While high-income countries struggle with siloed services despite better resources, LMICs face deeper challenges due to underfunded primary care, donor-driven vertical programs, and critical workforce shortages.[15,16]

Even as evidence mounts on the inefficiencies of fragmented care, policy responses remain largely reactive. Most systems have not adapted financing, governance, or clinical processes to reflect the complexity of ageing, multimorbid populations- leaving care delivery out of sync with current epidemiological realities.[17]

Beyond Guidelines: The Limits of Disease-Specific Approaches

While clinical guidelines help standardise care for single diseases, they often fail patients with multimorbidity. Most are based on trials excluding individuals with multiple conditions, cognitive decline, or polypharmacy - common features in older and disadvantaged populations.[18,19] Applying multiple guidelines simultaneously can result in conflicting recommendations, therapeutic overload, and higher risks of adverse events or treatment burden.[20,21]

These rigid protocols can lead to care plans misaligned with patient goals, duplicated tests, and overmedication.[22] Guideline development rarely addresses functional status, quality of life, or patient preferences - essential factors in managing chronic complexity.[23] For instance, strict glycemic targets may be inappropriate or harmful in frail patients with limited life expectancy.[24]

Despite calls for reform, few guidelines integrate tools that account for multiple conditions, treatment interactions, or person-reported outcomes.[25] Real-world primary care requires flexible, individualised decision-making that moves beyond disease-specific algorithms toward holistic, goal-concordant care.

Polypharmacy at the Crossroads: Between Necessity and Harm

Polypharmacy - typically defined as five or more concurrent medications - is a common consequence of multimorbidity, especially among older adults. While often necessary, it carries significant risks including adverse drug events, non-adherence, cognitive decline, and hospitalisations.[26-28]

In practice, polypharmacy often results from multiple prescribers and persists without regular review. Fragmented documentation, time constraints, and lack of deprescribing protocols contribute to avoidable medication-related harm, particularly in frail or high-risk patients.[29,30]

Although tools like STOPP/START and the Beers Criteria support safer prescribing, they are rarely integrated into clinical workflows and often lack flexibility to account for patient goals, preferences, or the burden of managing complex regimens.[31,32]

To reduce harm, structured medication reviews, deprescribing strategies, and shared decision-making must be embedded in routine primary care. This requires clinician training, team-based collaboration, and digital tools to flag high-risk prescribing.[33] A polypharmacy-sensitive approach must differentiate necessary therapeutic complexity from preventable harm- placing patient context at the centre of prescribing decisions.

Models of Integration: Lessons from Innovative Primary Care Systems

Despite widespread fragmentation, several health systems have developed integrated care models that effectively manage multimorbidity by emphasising coordination, patient-centred planning, and continuous monitoring.

The Chronic Care Model (CCM) and its U.S. adaptation, the Patient-Centred Medical Home (PCMH), promote proactive, team-based management supported by decision aids and self-management education - improving quality, satisfaction, and reducing emergency visits.[34,35] In the UK, the House of Care model and 3D approach consolidate disease reviews and enable goal-oriented care planning, enhancing coordination and patient experience.[23,36]

In LMICs, integration addresses the dual burden of chronic and infectious diseases. South Africa's Integrated Chronic Disease Management (ICDM) model merges services for HIV, TB, and NCDs into a nurse-led, decentralised system.[37] Brazil's Family Health Strategy embeds multidisciplinary teams in communities to provide longitudinal care, reducing mortality and hospitalisations.[38]

These models share key features: continuity, multidisciplinary collaboration, robust digital infrastructure, and alignment with patient goals. Successful scale-up depends on local adaptation, political commitment, and sustained investment in primary care systems and workforce development.

Toward a Policy Blueprint: Key Components of Multimorbidity-Responsive Primary Care

Tackling multimorbidity requires structural reform in how primary care is financed, staffed, and delivered. A responsive framework should move beyond disease-focused models and embrace five foundational pillars:

Financing for complexity

Shift from fee-for-service to blended or capitation-based payment systems that incentivise continuity, coordination, and outcomes aligned with patient priorities.[39.40]

Team-based care

Build interdisciplinary teams - GPs, nurses, pharmacists, mental health and social care professionals - with defined roles and shared care plans to manage complex needs.[41]

Digital infrastructure

Develop interoperable electronic health records and decision-support tools that enable data sharing, risk stratification, and safer prescribing.[42]

Training for complexity

Equip clinicians with skills in multimorbidity management, communication, deprescribing, and shared decision-making through updated curricula and case-based learning.[43]

Patient-centred outcomes

Replace disease-centric metrics with co-produced measures that reflect quality of life, functional ability, and treatment burden.[44]

Together, these pillars create a foundation for a sustainable, person-centred primary care system. Success depends on political will, cross-sectoral collaboration, and long-term investment.

Implementation Realities: Barriers and Enablers Across Contexts

Turning policy into practice for multimorbidity-responsive care is challenging, shaped by political, infrastructural, and cultural contexts. Even well-designed models often face uneven uptake due to fragmented governance, limited resources, and systemic inertia.

Political will is a key driver. Countries with stable leadership and strong primary care mandates are more likely to implement reforms, while short policy cycles and competing priorities often stall progress - especially in LMICs.[45]

Infrastructure and workforce gaps

such as understaffing, poor digital systems, and lack of training - further impede implementation.[46,47] Clinicians are often burdened by time constraints and administrative overload, limiting their ability to innovate.

Cultural barriers also matter. Hierarchical medical norms and specialist dominance can resist team-based, patient-centred models. Patients themselves may face barriers like low health literacy or distrust in health systems, especially in marginalised communities.[48,49]

Enablers include policy champions, local leadership, adaptive financing, and community engagement. Successful pilots show that context-sensitive, co-designed models can scale when supported by sustained investment and stakeholder buy-in.[50,51]

Implementation must be viewed not as a technical deployment but as an adaptive, equity-focused process aligned with frontline realities.

Patient Voice and Lived Experience: Centring Care Around What Matters

Multimorbidity disrupts not only physical health but also emotional well-being, daily functioning, and identity. Yet health systems remain predominantly clinician- and disease-focused, often sidelining the lived experiences of those navigating multiple chronic conditions. For care to be truly person-centred, policies and models must explicitly incorporate the voices, preferences, and priorities of patients and caregivers.[52,53]

Research shows that individuals with multimorbidity value care continuity, clear communication, and being treated as a whole person - not as a sum of disconnected diagnoses.[54] Many express frustration with fragmented services, conflicting medical advice, and a lack of meaningful involvement in decisions that directly affect their quality of life.[55] This disconnect can lead to treatment fatigue, poor adherence, and avoidable harms from overmedicalization or unnecessary interventions.[56]

Participatory models, such as shared decision-making and goal-oriented care, have shown promise in aligning clinical care with what matters most to patients - be it symptom relief, functional independence, or social participation.[57] Tools like patient-reported outcome measures (PROMs) and narrative medicine approaches can further ensure that care delivery is guided by patient-defined goals rather than narrowly clinical metrics.[58]

Incorporating patient voices into system design also strengthens policy accountability. Co-production in service planning - where patients are equal partners in designing and evaluating services - has improved relevance, trust, and uptake of integrated care interventions in various settings.[59] For multimorbidity care to be sustainable, equity-enhancing, and humane, it must be grounded in dignity, autonomy, and the principle that the patient is not simply the subject of care, but its co-architect.

The Path Forward: Policy Recommendations for Health Systems Transformation

Meeting the challenge of multimorbidity demands a coordinated transformation across all levels of health systems - policy, practice, and financing. Fragmented and disease-focused approaches must give way to integrated, person-centred models grounded in long-term continuity, therapeutic appropriateness, and equity. Based on emerging evidence and global implementation experiences, several policy priorities stand out.

Anchor health systems in strong, integrated primary care

Governments must prioritise investment in first-contact, comprehensive primary care that is equipped to manage complex needs over time. This includes expanding multidisciplinary teams, strengthening referral pathways, and linking with social and community care.[10,60]

Reform financing to support coordination and complexity

Transitioning from fee-for-service to blended payment models - such as capitation with quality-linked incentives - can reward longitudinal care, deprescribing, and care integration. Payers should also fund structured medication reviews and

support services such as care navigation and home-based interventions.[61,62]

Build digital infrastructure for proactive, data-driven care

Health systems should develop interoperable electronic records, risk stratification tools, and predictive analytics that identify high-need patients and support clinical decision-making.[63] Digital enablers can also facilitate communication across providers and empower patients through access and engagement tools.

Invest in training for complexity and shared decision-making

Clinicians must be equipped to handle the uncertainties of multimorbidity, including managing treatment trade-offs, engaging in goals-based planning, and deprescribing safely. National training bodies should revise curricula to include multimorbidity and patient-centred practice as core competencies.[64]

Embed measurement of person-centred outcomes

Health system performance frameworks should expand beyond disease-specific metrics to include patient-reported outcome measures (PROMs), care coordination indicators, and treatment burden scores. These metrics better reflect the goals of multimorbid patients and can guide quality improvement.[65]

Institutionalise co-production and policy accountability

Patients, families, and community organisations must have structured roles in the design, governance, and evaluation of services. Their lived experience can guide meaningful reforms and ensure that transformation efforts address what matters most to those affected.[66]

A coherent policy roadmap - centred on integration, rational use of therapies, and patient-defined outcomes - can transform primary care into a system truly responsive to the complexities of multimorbidity. However, scaling such reforms requires long-term commitment, intersectoral coordination, and inclusive leadership at all levels of the health system.

Discussion

Multimorbidity is now a central challenge in global primary care, revealing a fundamental misalignment between traditional, single-disease-focused systems and the needs of patients with complex health profiles. Despite growing awareness, policy responses have been fragmented and slow to scale, leaving primary care poorly equipped to manage overlapping conditions effectively.[67,68]

This review identifies common features of effective models: integrated service delivery, interdisciplinary teamwork, patient-centred care, proactive polypharmacy management, and digital tools to enhance coordination. However, systemic barriers—such as fragmented governance, inadequate financing, limited training, and entrenched disease-specific norms—continue to hinder implementation.[43,46]

Patient experiences underscore the need for transformation. Individuals with multimorbidity often face care that is confusing, duplicative, and misaligned with their goals.[55] Models like the UK's 3D approach,[23] Brazil's Family Health Strategy,[38] and South Africa's integrated care programs[37] demonstrate the value of locally adapted, person-centred innovations, particularly when patients are active in design and delivery.

Scalability remains a major challenge. Many successful models operate as pilots or donor-supported initiatives. Sustained expansion demands systemic changes: payment reforms, redefined outcome measures, and investment in integrated training and infrastructure.

Equity must be central to reform. Multimorbidity disproportionately affects socioeconomically disadvantaged groups and risks widening health disparities unless policies address underlying social determinants, health literacy, and access barriers.[2]

Rather than viewing multimorbidity as a deviation, health systems must treat it as a defining reality. The tools for reform already exist; what's needed is strong political will, coordinated policy action, and a commitment to aligning care systems with patient experience and complexity.

Conclusion

Multimorbidity is no longer an outlier but a defining feature of 21st-century primary care. Yet, global health systems remain entrenched in single-disease paradigms, resulting in fragmented care, inappropriate polypharmacy, and unmet patient needs. A system-wide shift is essential - one that embraces integrated, patient-centred, and polypharmacy-sensitive models. This transformation requires financing reforms, digital infrastructure, interdisciplinary workforce training, and performance metrics aligned with outcomes that matter to patients.

Importantly, patients must be engaged not only as recipients of care but as co-designers of services. Grounding reforms in lived experience ensures responsiveness, equity, and dignity. The evidence is clear: scalable solutions exist. What is needed now is bold leadership and sustained commitment to redesigning primary care around complexity - rather than despite it. Multimorbidity must be viewed not as a challenge to current systems, but as a catalyst for their long-overdue evolution.

Clinical Trial Number

Not applicable

Author Contribution declaration

Both authors (Pragnesh Parmar, Gunvanti Rathod) contributed equally in the preparation of this manuscript.

References

1. Violan C, Foguet-Boreu Q, Flores-Mateo G, et al. Prevalence, determinants and patterns of multimorbidity in primary care: a systematic review of observational studies. *PLoS One*. 2014;9(7):e102149. doi:10.1371/journal.pone.0102149
2. Barnett K, Mercer SW, Norbury M, Watt G, Wyke S, Guthrie B. Epidemiology of multimorbidity and implications for healthcare, research, and medical education: a cross-sectional study. *Lancet*. 2012;380(9836):37–43. doi:10.1016/S0140-6736(12)60240-2
3. Afshar S, Roderick PJ, Kowal P, Dimitrov BD, Hill AG. Multimorbidity and the inequalities of global ageing: a cross-sectional study of 28 countries using the World Health Surveys. *BMC Public Health*. 2015;15:776. doi:10.1186/s12889-015-2103-6
4. Oni T, Unwin N. Why the communicable/non-communicable disease dichotomy is problematic for public health control strategies: implications of multimorbidity for health systems in an era of health transition. *Int Health*. 2015;7(6):390–399. doi:10.1093/inthealth/ihv040
5. Salisbury C, Johnson L, Purdy S, Valderas JM, Montgomery AA. Epidemiology and impact of multimorbidity in primary care: a retrospective cohort study. *Br J Gen Pract*. 2011;61(582):e12–e21. doi:10.3399/bjgp11X548929
6. Cassell A, Edwards D, Harshfield A, et al. The epidemiology of multimorbidity in primary care: a retrospective cohort study. *Br J Gen Pract*. 2018;68(669):e245–e251. doi:10.3399/bjgp18X695465
7. Uijen AA, van de Lisdonk EH. Multimorbidity in primary care: prevalence and trend over the last 20 years. *Eur J Gen Pract*. 2008;14 Suppl 1:28–32. doi:10.1080/13814780802436093
8. World Health Organization. Multimorbidity: Technical Series on Safer Primary Care. Geneva: WHO; 2016.
9. Tinetti ME, Fried T. The end of the disease era. *Am J Med*. 2004;116(3):179–185. doi:10.1016/j.amjmed.2003.09.031
10. Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. *Milbank Q*. 2005;83(3):457–502. doi:10.1111/j.1468-0009.2005.00409.x
11. Salisbury C. Multimorbidity: redesigning health care for people who use it. *Lancet*. 2012;380(9836):7–9. doi:10.1016/S0140-6736(12)60482-6
12. Muth C, Blom JW, Smith SM, et al. Evidence supporting the best clinical management of patients with multimorbidity and polypharmacy: a systematic guideline review and expert consensus. *J Intern Med*. 2019;285(3):272–288. doi:10.1111/joim.12842
13. Marengoni A, Angleman S, Melis R, et al. Aging with multimorbidity: a systematic review of the literature. *Ageing Res Rev*. 2011;10(4):430–439. doi:10.1016/j.arr.2011.03.003
14. Nolte E, Knai C, McKee M. Managing chronic conditions: Experience in eight countries. *European Observatory on Health Systems and Policies*, WHO; 2008.
15. Kruk ME, Nigenda G, Knaul FM. Redesigning primary care to tackle the global epidemic of noncommunicable disease. *Am J Public Health*. 2015;105(3):431–437. doi:10.2105/AJPH.2014.302392
16. World Health Organization. *Integrated care for older people: guidelines on community-level interventions to manage declines in intrinsic capacity.* Geneva: WHO; 2017.
17. WHO. *Global strategy on people-centred and integrated health services.* Geneva: World Health Organization; 2015.
18. Boyd CM, Darer J, Boult C, Fried LP, Boult L, Wu AW. Clinical practice guidelines and quality of care for older patients with multiple comorbid diseases. *JAMA*. 2005;294(6):716–724. doi:10.1001/jama.294.6.716
19. Guthrie B, Payne K, Alderson P, McMurdo ME, Mercer SW. Adapting clinical guidelines to take account of multimorbidity. *BMJ*. 2012;345:e6341. doi:10.1136/bmj.e6341
20. Mair FS, May CR. Thinking about the burden of treatment. *BMJ*. 2014;349:g6680. doi:10.1136/bmj.g6680
21. Tinetti ME, Bogardus ST Jr, Agostini JV. Potential pitfalls of disease-specific guidelines for patients with multiple conditions. *N Engl J Med*. 2004;351(27):2870–2874. doi:10.1056/NEJMsb042458
22. Wallace E, Salisbury C, Guthrie B, Lewis C, Fahey T, Smith SM. Managing patients with multimorbidity in primary care. *BMJ*. 2015;350:h176. doi:10.1136/bmj.h176
23. Salisbury C, Man M-S, Bower P, et al. Management of multimorbidity using a patient-centred care model: a pragmatic cluster-randomised trial of the 3D approach. *Lancet*. 2018;392(10141):41–50. doi:10.1016/S0140-6736(18)31308-4
24. Lipska KJ, Krumholz H, Soones T, Lee SJ. Polypharmacy in the aging patient: a review of glycemic control in older adults with type 2 diabetes. *JAMA*. 2016;315(10):1034–1045. doi:10.1001/jama.2016.0299
25. NICE. Multimorbidity: clinical assessment and management. National Institute for Health and Care Excellence. NICE Guideline [NG56]; 2016. https://www.nice.org.uk/guidance/ng56
26. Kantor ED, Rehm CD, Haas JS, Chan AT, Giovannucci EL. Trends in prescription drug use among adults in the United States from 1999–2012. *JAMA*. 2015;314(17):1818–1831. doi:10.1001/jama.2015.13766
27. Maher RL, Hanlon J, Hajjar ER. Clinical consequences of polypharmacy in elderly. *Expert Opin Drug Saf*. 2014;13(1):57–65. doi:10.1517/14740338.2013.827660
28. Rochon PA, Gurwitz JH. Optimising drug treatment for elderly people: the prescribing cascade. *BMJ*. 1997;315(7115):1096–1099. doi:10.1136/bmj.315.7115.1096
29. Moriarty F, Hardy C, Bennett K, Smith SM, Fahey T. Trends and interaction of polypharmacy and potentially inappropriate prescribing in primary care over 15 years in Ireland. *BMJ Open*. 2015;5(9):e008656. doi:10.1136/bmjopen-2015-008656
30. Gnjidic D, Hilmer SN, Blyth FM, et al. Polypharmacy cutoff and outcomes: five or more medicines were used to identify community-dwelling older men at risk of different adverse outcomes. *J Clin Epidemiol*. 2012;65(9):989–995. doi:10.1016/j.jclinepi.2012.02.018
31. O'Mahony D, O'Sullivan D, Byrne S, O'Connor MN, Ryan C, Gallagher P. STOPP/START criteria for potentially inappropriate prescribing in older people: version 2. *Age Ageing*. 2015;44(2):213–218. doi:10.1093/ageing/afu145
32. Reeve E, Shakib S, Hendrix I, Roberts MS, Wiese MD. Review of deprescribing processes and development of an evidence-based, patient-centred deprescribing process. *Br J Clin Pharmacol*. 2014;78(4):738–747. doi:10.1111/bcp.12386
33. Rankin A, Cadogan CA, Patterson SM, et al. Interventions to improve the appropriate use of polypharmacy for older people. *Cochrane Database Syst Rev*. 2018;9(9):CD008165. doi:10.1002/14651858.CD008165.pub4
34. Wagner EH, Austin BT, Davis C, Hindmarsh M, Schaefer J, Bonomi A. Improving chronic illness care: translating evidence into action. *Health Aff (Millwood)*. 2001;20(6):64–78. doi:10.1377/hlthaff.20.6.64
35. Jackson GL, Powers BJ, Chatterjee R, et al. The patient-centered medical home: a systematic review. *Ann Intern Med*.

2013;158(3):169–178. doi:10.7326/0003-4819-158-3-201302050-00579
36. Coulter A, Roberts S, Dixon A. *Delivering better services for people with long-term conditions: Building the House of Care*. London: King's Fund; 2013.
37. Mahomed OH, Asmall S, Freeman M. An integrated chronic disease management model: a diagonal health systems approach for chronic disease care. *S Afr Health Rev*. 2014;2014(1):119–131.
38. Macinko J, Harris MJ. Brazil's Family Health Strategy—delivering community-based primary care in a universal health system. *N Engl J Med*. 2015;372(23):2177–2181. doi:10.1056/NEJMp1501140
39. Nolte E, Pitchforth E. What is the evidence on the economic impacts of integrated care? *WHO European Observatory on Health Systems and Policies*; 2014.
40. Fisher ES, Shortell SM. Accountable care organizations: accountable for what, to whom, and how. *JAMA*. 2010;304(15):1715–1716. doi:10.1001/jama.2010.1513
41. Bodenheimer T, Bauer L, Syer S, Olayiwola JN. The 10 building blocks of high-performing primary care. *Ann Fam Med*. 2014;12(2):166–171. doi:10.1370/afm.1616
42. Tang PC, Ralston M, Arrigotti MF, Qureshi L, Graham J. Comparison of methodologies for calculating quality measures based on administrative data vs clinical data from an electronic health record system: implications for performance measures. *J Am Med Inform Assoc*. 2007;14(1):10–15. doi:10.1197/jamia.M2243
43. Smith SM, Wallace E, O'Dowd T, Fortin M. Interventions for improving outcomes in patients with multimorbidity in primary care and community settings. *Cochrane Database Syst Rev*. 2021;1(1):CD006560. doi:10.1002/14651858.CD006560.pub4
44. Valderas JM, Starfield B, Sibbald B, Salisbury C, Roland M. Defining comorbidity: implications for understanding health and health services. *Ann Fam Med*. 2009;7(4):357–363. doi:10.1370/afm.983
45. World Health Organization. *People-centred and integrated health services: an overview of the evidence*. Geneva: WHO; 2015.
46. Kringos DS, Boerma WGW, Hutchinson A, Saltman RB. *Building primary care in a changing Europe.* European Observatory on Health Systems and Policies; 2015.
47. Comino EJ, Davies GP, Krastev Y, et al. A systematic review of interventions to enhance access to best practice primary health care for chronic disease management. *BMC Health Serv Res*. 2012;12:415. doi:10.1186/1472-6963-12-415
48. Goodwin N, Dixon A, Anderson G, Wodchis W. *Providing integrated care for older people with complex needs: lessons from seven international case studies*. The King's Fund; 2014.
49. Osborn R, Squires D, Doty MM, Sarnak DO, Schneider EC. *In new survey of eleven countries, US adults still struggle with access to and affordability of health care. Health Aff (Millwood)*. 2016;35(12):2327–2336. doi:10.1377/hlthaff.2016.1088
50. Powell BJ, Waltz TJ, Chinman MJ, et al. A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project. *Implement Sci*. 2015;10:21. doi:10.1186/s13012-015-0209-1
51. Sheikh K, Ranson MK, Gilson L. Explorations on people centredness in health systems. *Health Policy Plan*. 2014;29 Suppl 2:ii1–ii5. doi:10.1093/heapol/czu082
52. Barry MJ, Edgman-Levitan S. Shared decision making—the pinnacle of patient-centered care. *N Engl J Med*. 2012;366(9):780–781. doi:10.1056/NEJMp1109283
53. Bate P, Robert G. Experience-based design: from redesigning the system around the patient to co-designing services with the patient. *Qual Saf Health Care*. 2006;15(5):307–310. doi:10.1136/qshc.2005.016527
54. Mangin D, Heath I, Jamoulle M. Beyond diagnosis: rising to the multimorbidity challenge. *BMJ*. 2012;344:e3526. doi:10.1136/bmj.e3526
55. Ridgeway JL, Egginton JS, Tiedje K, et al. Factors that lessen the burden of treatment in complex patients with chronic conditions: a qualitative study. *Patient Prefer Adherence*. 2014;8:339–351. doi:10.2147/PPA.S58014
56. May CR, Eton DT, Boehmer K, et al. Rethinking the patient: using Burden of Treatment Theory to understand the changing dynamics of illness. *BMC Health Serv Res*. 2014;14:281. doi:10.1186/1472-6963-14-281
57. Tinetti ME, Naik AD, Dodson JA. Moving from disease-centered to patient goals–directed care for patients with multiple chronic conditions. *JAMA Cardiol*. 2016;1(1):9–10. doi:10.1001/jamacardio.2015.0248
58. Greenhalgh J, Long AF, Flynn R. The use of patient-reported outcome measures in routine clinical practice: lack of impact or lack of theory? *Soc Sci Med*. 2005;60(4):833–843. doi:10.1016/j.socscimed.2004.06.022
59. Robert G, Cornwell J, Locock L, Purushotham A, Dixon-Woods M. Patients and staff as co-designers of healthcare services. *BMJ*. 2015;350:g7714. doi:10.1136/bmj.g7714
60. Kringos DS, Boerma WG, Hutchinson A, van der Zee J, Groenewegen PP. The breadth of primary care: a systematic literature review of its core dimensions. *BMC Health Serv Res*. 2010;10:65. doi:10.1186/1472-6963-10-65
61. Fisher ES, Shortell SM, Kreindler SA, Van Citters AD, Larson BK. A framework for evaluating the formation, implementation, and performance of accountable care organizations. *Health Aff (Millwood)*. 2012;31(11):2368–2378. doi:10.1377/hlthaff.2012.0544
62. Wodchis WP, Dixon A, Anderson GM, Goodwin N. Integrating care for older people with complex needs: key insights and lessons from a seven-country cross-case analysis. *Int J Integr Care*. 2015;15:e021. doi:10.5334/ijic.2249
63. Kvedar J, Coye MJ, Everett W. Connected health: a review of technologies and strategies to improve patient care with telemedicine and telehealth. *Health Aff (Millwood)*. 2014;33(2):194–199. doi:10.1377/hlthaff.2013.0992
64. Fortin M, Soubhi H, Hudon C, Bayliss EA, van den Akker M. Multimorbidity's many challenges. *BMJ*. 2007;334(7602):1016–1017. doi:10.1136/bmj.39201.463819.2C
65. Valderas JM, Alonso J, Guyatt G. Measuring patient-reported outcomes: moving from clinical trials into clinical practice. *Med J Aust*. 2008;189(2):93–94. doi:10.5694/j.1326-5377.2008.tb01911.x
66. Robert G, Cornwell J, Locock L, et al. Patients and staff as co-designers of healthcare services. *BMJ*. 2015;350:g7714. doi:10.1136/bmj.g7714
67. Tinetti ME, Fried TR, Boyd CM. Designing health care for the most common chronic condition—multimorbidity. *JAMA*. 2012;307(23):2493–2494. doi:10.1001/jama.2012.5265
68. Muth C, van den Akker M, Blom JW, et al. The Ariadne principles: how to handle multimorbidity in primary care consultations. *BMC Med*. 2014;12:223. doi:10.1186/s12916-014-0223-1