Cardiovascular Diabetology

COMMENT

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From global guidelines for cardio-kidney-metabolic diseases management to national implementation: perspectives from the guideline workshop taskforce

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Abstract

International guidelines define standards of care for type 2 diabetes (T2D), obesity, cardiovascular disease (CVD), metabolic dysfunction-associated steatotic liver disease (MASLD) and chronic kidney disease (CKD). Yet implementation at the national level remains inconsistent, leading to persistent gaps between evidence-based recommendations and real-world practice. Key barriers include linguistic and cultural adaptation, limited communication to clinicians, and siloed regulatory and reimbursement processes. Addressing these challenges requires coordinated strategies, such as concise translations, digital platforms and decision-support tools, integration into medical education, and structured monitoring and evaluation frameworks with feedback and incentives. Equitable and sustainable access further depends on coordination between medical societies, governmental authorities, payers, and patient representatives. Evidence from existing initiatives shows that systematic, context-sensitive approaches can measurably improve care. Building on these lessons, this Commentary recommends priorities for national implementation to ensure that guidelines move more effectively from publication to practice and realise their full potential to improve patient outcomes.

Keywords Clinical practice guideline implementation, Diabetes, Obesity, Cardiovascular disease, Chronic kidney disease

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Introduction

Clinical practice guidelines are designed to translate evidence into consistent, high-quality care. Internationally developed guidelines—such as those from the European Society of Cardiology (ESC), the American Heart Association (AHA), the European Renal Association (ERA), European Association for the Study of Obesity (EASO), Kidney Disease: Improving Global Outcomes (KDIGO), the European Association for the Study of Diabetes (EASD) and the American Diabetes Association (ADA)—set the global standard for cardiometabolic disease management [1–13]. Yet despite their authority, uptake at the national level is often inconsistent, reflecting inherent limitations of the guidelines as well as structural and systemic barriers [14–16].

These disconnects result in substantial gaps between recommended and delivered care, particularly in chronic conditions such as type 2 diabetes (T2D), obesity, cardiovascular disease (CVD), metabolic dysfunction-associated steatotic liver disease (MASLD), and chronic kidney disease (CKD). Registry data and real-world studies show persistent disparities: limited access, delayed adoption of innovative therapies, and underuse of proven interventions. This occurs even when such measures improve outcomes and reduce long-term costs [17–24]. These experiences underscore a key reality: science is global, but implementation is inherently local. Addressing this challenge requires coordinated, context-specific action across health systems, since passive dissemination alone is insufficient [16, 25–28].

Against this background, the present Commentary builds on the discussions of the 2025 Guideline Workshop Taskforce and a subsequent follow-up survey of participating experts, with the aim of providing a framework to propose strategies and outline recommendations—ultimately to accelerate the effective implementation of international guidelines within national contexts.

Barriers to the national implementation of clinical guidelines

Implementing international guidelines at the national level is rarely straightforward. Persistent misconceptions create their own barriers, such as the beliefs that guidelines will be adopted automatically after publication, that a single policy change can resolve all challenges, or that implementation should be a rigid, top-down process without adaptation. These assumptions underestimate the complexity of health systems and contribute to the formation of further barriers [29]. Local practice patterns, the availability of drugs and devices, and reimbursement rules can also pose practical obstacles to adoption, which need to be anticipated from the outset.

One of the most immediate barriers that impedes implementation of guidelines is language [30]. Most international guidelines are published in English, but meaningful adoption requires more than literal translation. While many documents are translated—often by national or local professional societies—deliberate linguistic and cultural contextualisation is needed to ensure clarity and local relevance [31].

Effective communication to clinicians is another significant challenge. Although international recommendations are disseminated through professional societies and journals, this rarely guarantees their integration into daily clinical practice [32, 33]. Primary care providers, in particular, may lack awareness of updates or access to concise, practical tools. They may also face guideline overload and competing demands, which limit the time and capacity available for uptake. These constraints are further amplified by limited consultation times and the frequent presence of multimorbidity, creating structural barriers to implementing complex guideline-based care [34, 35]. This is particularly evident among patients with co-occurring conditions such as CVD, CKD, T2D, obesity, and liver disease, which are predominantly managed in primary care by GPs. Multimorbidity and overlapping guidance across conditions can make recommendations more challenging to prioritise and apply in practice [35, 36]. Although digital solutions and short-form educational content offer promise, adoption remains inconsistent due to infrastructure and policy limitations [37, 38]. A previous paper from the Guideline Workshop Taskforce provides recommendations for how to leverage digital technologies to achieve more effective implementation in practice, also within the context of living guidelines [39]. The recommendations include innovative solutions for using digitally structured evidence in trustworthy clinical practice guidelines in formats that are easy to use, including tools for shared decision-making [39, 40].

National health system structures also directly determine access to evidence-based care. Resource availability as well as prescribing and reimbursement regulations often limit uptake, even when benefits of interventions are well established by research evidence. For example, despite strong evidence for clinical benefits of sodium-glucose co-transporter-2 (SGLT2) inhibitors in heart failure, CKD, and high-risk T2D [15, 41, 42], restrictive prescribing rights delayed their use in several countries [43, 44]. Similarly, routine albuminuria testing, for instance as a diagnostic tool for CKD in diabetes, remains underused despite its recognised value, largely due to fragmented reimbursement policies [45]. In some settings, the absence of clear, up-to-date recommendations from national umbrella bodies, such as the United States Preventive Services Task Force (USPSTF), may further limit uptake in primary care, even among high-risk populations for whom such screening is recommended

in guidelines. However, the USPSTF is currently updating its previous recommendation, as indicated on its CKD screening topic page, last updated on July 7, 2023 [46, 47]. Affordability is another central determinant of uptake for modern cardiometabolic therapies. Even when evidence is robust, high out-of-pocket costs and reimbursement restrictions within coverage policies can prevent equitable and sustained access [48–50]. Addressing this requires coordinated action across payers, regulators, and manufacturers to align value assessment, reimbursement criteria, and pricing with population health priorities [51, 52].

These system-level constraints intersect with how recommendations are interpreted, prioritised, and operationalised at national and local level. In some settings, concerns are raised about the perceived independence or methodological robustness of specific recommendations, particularly when industry relationships are prominent [53, 54]. More commonly, constrained budgets, workforce shortages, and limited consultation time—especially in primary care—make it challenging to extend every potentially beneficial intervention to all eligible patients, particularly when absolute benefits are modest in lower-risk populations. Concepts such as "time needed to treat" (TNT) underscore that clinicians' time is a finite resource and that striving to implement all recommendations simultaneously may entail substantial opportunity costs for general practitioners and health systems [55].

Partly underlying all these barriers is the absence of structured national implementation programmes. Without sustained oversight and stakeholder engagement, uptake is left to isolated initiatives or individual projects [16, 25–28]. However, these approaches rarely deliver lasting, system-wide change.

Stakeholder involvement as a prerequisite for effective implementation of clinical guidelines

Effective implementation of clinical practice guidelines depends on the active involvement and alignment of key stakeholder groups, requiring coordinated efforts by medical societies, government authorities, payers, and patient representatives.

Medical societies, which are an essential body in shaping clinical practice, hold a central role in this multi-stakeholder collaboration. They interpret and adapt international guidance, condense recommendations into accessible formats, and harmonise overlapping protocols across specialties. Their authority and proximity to clinical practice give them unmatched credibility in shaping national uptake [56–60]. In many countries, national guidelines are developed or commissioned by government authorities or national public health institutes. These guidelines typically take a health system perspective and deliberately incorporate national priority setting and health technology assessment. Clear delineation and collaboration between medical societies and government agencies in producing and updating trustworthy national guidelines are therefore essential; if roles and responsibilities are not well aligned, overlapping or inconsistent recommendations may emerge, which can create uncertainty and slow implementation.

Government authorities, whose policies strongly influence implementation success, are therefore equally critical for ensuring adequate guideline support. Ministries of health and related agencies regulate and institutionalise implementation. Without national ownership, fragmented efforts struggle to scale, leaving uptake inconsistent [61, 62].

With control over reimbursement, payers further play a decisive role in effective guideline implementation. Reimbursement policies directly shape whether evidence-based diagnostics and therapies reach patients. When incentives and coverage misalign with guideline priorities, uptake stalls despite the presence of robust clinical evidence [63–65].

Patient representatives complete the stakeholder spectrum by providing indispensable perspectives that ensure guidelines reflect patient-centred care and improve their applicability [66, 67]. Patient organisations can, in turn, further strengthen implementation by supporting health literacy and peer education and by contributing to the co-design, dissemination, and evaluation of national strategies to ensure alignment with patient priorities and real-life constraints [66, 68, 69]. Importantly, engagement should also extend to primary care representatives, who are critical for bridging specialist recommendations into everyday practice [70]. This could include national GP/primary care societies in adaptation panels, co-authoring primary care versions of tools (e.g., one-page algorithms, prescribing checklists), and aligning implementation with existing primary-care quality improvement programmes [70, 71].

Successful examples for national implementation of guideline recommendations

Multiple initiatives, built on collaboration between different stakeholders, demonstrate that structured, context-sensitive strategies can deliver measurable improvements in care delivery and patient outcomes. The following examples highlight diverse approaches, ranging from coordinated care models tested in randomised trials to large-scale professional society programmes.

ESC initiatives for guideline implementation

The ESC has established a comprehensive framework to support national guideline implementation. Its efforts are structured around four core priorities: (i) translation and derivative tools, coordinated through National Cardiac

Societies (NCS) and their appointed National Guidelines Coordinators (NGCs), who oversee endorsement and dissemination of pocket guidelines, summary cards, slide sets, and apps to ensure usability in clinical practice [72]; and (ii) stakeholder dialogue through the ESC Cardiovascular Round Table (CRT), which brings together ESC leadership, healthcare industry partners, regulators, payers, and patient representatives to identify barriers and co-develop roadmaps for uptake, as in the 2025 CRT workshop on implementation of guidelines at national level [73]. Further priorities include (iii) professional education and digital integration, led by the ESC Council for Cardiology Practice, which embeds recommendations into CME activities and promotes digital resources such as the HeartScore® risk calculator, the SCORE2-Diabetes prediction model and the Prevention Toolbox to bring guidance to the point of care, complemented by ESC Chat, an AI-powered guideline-query system that delivers instant, citation-backed answers drawn from current ESC Clinical Practice Guidelines [74–80]; and (iv) patient engagement, by developing lay summaries and accessible resources that translate complex recommendations into actionable messages for the public, thereby enhancing shared decision-making and adherence [81].

The AHA's "get with the guidelines" (GWTG) program

The AHA's long-standing GWTG Program serves as a model for systematic implementation of evidence-based cardiovascular and stroke care across the United States. GWTG is a hospital-based quality improvement initiative that combines standardised performance measurement with data-driven feedback and education [82]. Participating institutions agree to: (i) use a web-based patient management tool that supports real-time data entry and guideline-based decision support; (ii) receive benchmark reports to compare performance against national metrics; (iii) engage in continuous quality improvement cycles, including audit-and-feedback; and (iv) benefit from recognition programmes and the dissemination of best practices across the hospital network. Evaluations of the programme have consistently demonstrated improved adherence to guideline-recommended therapies, better discharge planning, and modest reductions in hospital readmissions. No significant differences in short-term mortality were observed [83]. Importantly, the use of a centralised data platform allows both hospital-specific benchmarking and national surveillance, enabling continuous improvement over time. GWTG's structure, linking data capture, performance benchmarking, and education, offers a transferable model that other countries should adapt to strengthen their own national implementation efforts.

ERA initiatives for guideline implementation

ERA initiatives encompass several ongoing strategies. Until recently, through its European Renal Best Practice (ERBP) initiative, ERA developed a sustained strategy to facilitate the translation of international nephrology guidelines, particularly KDIGO recommendations, into national practice. Following the decision at the Leiden Council meeting to formally conclude ERBP, ERA is transitioning this work into a consolidated, branded 'ERA Guidance' presence on the Society's website, where all guidance documents and collaborative outputs will be hosted to improve visibility and uptake. Instead of producing de novo guidance, ERA works with KDIGO, ESC, AHA, the EASD, ADA, EASO as well as the European Society of Endocrinology (ESE) and national societies to deliver concise, practice-oriented materials. Importantly, the process is coordinated through meetings of national representatives from multiple societies, who review recommendations and align them where needed to ensure consistent uptake across Europe. Implementation activities span several domains: (i) translation and linguistic adaptation of synopses and pocket versions into multiple European languages, followed by national proofreading and endorsement; (ii) opportunities for local tailoring, allowing national societies to add context-specific commentary while keeping the original guidance intact; (iii) dissemination through diverse educational channels, including webinars and e-seminars, as well as the widely used 'Top 10 Takeaways'; (iv) collaborative projects with regulators, payers, and patients, such as RESET-CKD, which align evidence on surrogate endpoints with reimbursement decisions; and (v) public-facing campaigns, most prominently the Strong Kidneys initiative and the "ABCDE" (Albuminuria, Blood pressure, Cholesterol, Diabetes, Estimated glomerular filtration rate (eGFR)) framework, which promote awareness of kidney and cardiovascular risk factors through formats ranging from infographics and ambassador programmes to a recently published call-to-action article in Lancet Regional Health—Europe [84]. In practice, this multi-pronged approach means that guidelines are not only disseminated but also made usable across different health systems. Recent achievements highlight this scope, including an ERA-KDIGO memorandum of understanding to support translations across Europe; an ESC-ERA collaboration on the development of guidelines on cardiovascular disease and chronic kidney disease, scheduled for 2026; an ERA-ESE collaboration on the development of joint guidelines, scheduled for 2027; and a multi-country survey of more than 12,000 primary care clinics to monitor uptake of SGLT2 inhibitors. Importantly, incorporating patient-facing initiatives ensures that implementation extends beyond the professional community [69, 85].

Coordinated care to improve cardiovascular prevention in T2D: the Coordinate-Diabetes trial

The COORDINATE-Diabetes trial was a US-based, cluster-randomised clinical study involving 43 cardiology clinics, designed to address the underuse of three guideline-recommended cardiovascular preventive therapies in adults with T2D and established atherosclerotic cardiovascular disease: high-intensity statins, angiotensin-converting enzyme inhibitors (ACEIs) or angiotensin receptor blockers (ARBs), and SGLT2 inhibitors and/or glucagon-like peptide 1 receptor agonists (GLP-1RAs) [86]. The multifaceted intervention, delivered by a central team comprising a cardiologist, an endocrinologist, and an implementation specialist, was structured into six components: (i) systematic assessment of local barriers to prescribing; (ii) development of interdisciplinary care pathways tailored to site-specific needs; (iii) enhanced coordination between cardiology, endocrinology, and primary care; (iv) targeted clinician education through guideline reviews, practical prescribing tools, and regular case discussions; (v) audit-and-feedback using monthly performance reports and patient-level trackers; and (vi) provision of patient-facing educational materials to support adherence. Usual-care clinics received current guidelines without structured implementation support. Among 1049 participants (median age 70 years; 32% women), prescription of all three therapy classes at 6–12 months was achieved in 37.9% of the intervention group compared with 14.5% under usual care (adjusted odds ratio (OR), 4.38; 95% CI, 2.49–7.71; $p < 0.001$). Significant gains were observed for each therapy class: high-intensity statins (70.7% vs 56.8%; adjusted OR, 1.73), ACEIs/ARBs (81.4% vs 68.4%; adjusted OR, 1.82), and SGLT2 inhibitors and/or GLP-1RAs (60.4% vs 35.5%; adjusted OR, 3.11). The trial's pragmatic design, successful adaptation to virtual delivery during the COVID-19 pandemic, and reproducibility across diverse clinics make it a robust model that national systems should adopt to translate cardiovascular-diabetes guideline recommendations into routine practice [86].

Taskforce recommendations for national guideline implementation

Building on the approaches outlined above, several priorities for national implementation can be identified. These represent strategies with potential for broader application, focusing on translation and contextualisation, digital tools and education, monitoring and incentives, patient engagement, and integration into national programmes. On this basis, the Guideline Workshop Taskforce recommends their systematic adoption within national implementation efforts.

Translation and contextualisation

National implementation efforts should prioritise the translation and contextualisation of international guidelines. Professional translation and adaptation are needed to ensure clarity and local relevance while maintaining fidelity to the source recommendations. Artificial Intelligence (AI)-assisted translation and summarisation can streamline these steps and enable the timely production of derivative tools, as long as outputs are transparently labelled, terminologically consistent, and expert-reviewed. Where feasible, guideline developers could pre-organise centrally curated translations into major languages for release, preserving alignment with the source recommendations. Concise derivative tools such as synopses and pocket guides further support daily practice. National societies can facilitate uptake by issuing contextual commentaries, provided they are clearly distinguished from the original guidance. The German Cardiac Society, for example, regularly issues contextual commentaries on ESC guidelines [57–60, 87–89]. Collaborative models, such as the ADA–KDIGO consensus on diabetes and CKD and the International Society of Nephrology (ISN)–KDIGO collaboration with Primary Care Diabetes Europe (PCDE) and the World Organization of Family Doctors Europe (WONCA Europe) on CKD early identification and intervention in primary care, illustrate the feasibility of aligning overlapping recommendations across different organisations [60, 90].

Another example of contextualisation is the use of non-invasive tests (NITs) for assessing liver fibrosis to predict risk of liver disease progression in MASLD [91]. Although European guidelines provide a uniform framework for non-invasive liver fibrosis assessment, the optimal choice and sequencing of NITs must be adapted to national contexts [12]. Differences in healthcare infrastructure, reimbursement policies, and availability of technologies such as transient elastography or patented serum biomarkers influence how recommended algorithms can be implemented. Consequently, each country must contextualise the guideline pathway—balancing accuracy, accessibility, and cost—to develop a feasible, equitable national testing strategy for fibrosis detection in MASLD [92].

Digital platforms and education

To support national implementation, clinical practice guidelines should be made accessible through digital platforms such as apps, clinical decision-support systems, and electronic health records, ensuring availability at the point of care [37, 38, 93–97]. This approach is particularly relevant for younger clinicians, who increasingly rely on mobile tools. Education should also be structured and interactive, with guideline content embedded into accredited continuing medical education (CME) formats

such as webinars and podcasts. Evidence suggests that CME activities can strengthen professional practice and lead to modest improvements in patient outcomes, and that clinical decision-support tools can help increase adherence to evidence-based recommendations [93, 95, 97].

Monitoring, feedback, and incentives

Guideline implementation should also be accompanied by appropriate and effective strategies to evaluate its impact on patient care. One such strategy is systematic monitoring and feedback, often called audit and feedback [98]. For example, the ESC EUROASPIRE registry programme was started following the first Joint European Societies Recommendations on Prevention of Coronary Heart Disease in Clinical Practice in 1994—the first ESC Clinical Practice Guideline—to document the status of secondary prevention considering the new recommendations. Since then, six EUROASPIRE surveys have been conducted, covering secondary (hospital) and primary (general practice) prevention across an expanding number of EU countries. The sixth EUROASPIRE survey (2023–2025) is exploring the cardiometabolic and renal continuum and specifically assessing guideline implementation in these settings [99]. Complementing EUROASPIRE, the international INTERASPIRE study shows persistent gaps and variability in achieving guideline-recommended secondary prevention targets after coronary heart disease hospitalisation, underscoring the role of systematic monitoring and feedback as core levers of guideline implementation [100]. National health systems can establish registries and audit frameworks, supported by claims-based surveillance, to identify gaps, benchmark institutions, and provide actionable feedback to clinicians. Importantly, guideline recommendations are frameworks to support, rather than replace, clinical judgement and shared decision-making. Their application should take individual patient characteristics into account.

Audit and feedback interventions have consistently improved professional practice across diverse settings [98]. Linking these mechanisms to incentives such as pay-for-performance or recognition programmes may further strengthen adherence [63, 64, 101]. Programmes like the AHA's GWTG demonstrate how structured feedback and recognition can drive improvement at scale [83]. Monitoring should further address equity to ensure that vulnerable or underserved populations benefit equally from guideline-based interventions.

Another complementary approach involves registry-based research studies, which can both evaluate performance on key outcomes and generate new, context-relevant evidence. Swedeheart illustrates the potential of registry-based randomised controlled trials in cardiology and has influenced clinical practice [102, 103]. Many such studies have since been conducted and consistently indicate that providing clinicians with real-time feedback on their performance, coupled with active participation in research conducted within a registry context, can serve as an effective implementation strategy. To date, however, these efforts have placed relatively little explicit emphasis on formal guideline frameworks, highlighting an opportunity to more systematically link registry-based implementation strategies with guideline-directed care.

Patient engagement

For successful implementation, patients should be actively engaged. From a patient perspective, cardiovascular–kidney–metabolic diseases represent a lifelong, cumulative burden that affects daily functioning, quality of life, and socioeconomic participation. This underscores the importance of therapies and care models that are not only effective but also accessible and sustainable in real-world settings. Implementation approaches should therefore be designed to fit into patients' daily lives, recognising practical constraints and competing priorities that influence adherence and outcomes. Shared decision-making is a core element of patient-centred care and an integral part of evidence-based medicine. Plain language and patient-oriented key messages improve accessibility and understanding [66, 67, 104]. Direct involvement of patients in the guideline development process is important to ensure that recommendations address patients' concerns, thereby enhancing acceptability and implementability [105]. Engagement efforts must also reach populations with limited health literacy and underserved groups, using culturally adapted formats such as infographics and patient testimonials. Beyond information provision, implementation should enable patient autonomy and long-term self-management [106, 107]. Implementation efforts can therefore link recommendations to practical behavioural support that fits patients' daily lives. Patient-reported outcomes and experience measures can complement clinical indicators to capture patient-relevant impact [108].

Integration into national programmes

To ensure sustained implementation of international guidelines, regional or national programmes should be designed with long-term funding. Since effective models remain scarce and highly context-dependent [109], systematic approaches are required. Evidence from systematic reviews suggests that successful integration into clinical workflows depends on continuous evaluation of uptake and impact [110, 111]. Implementation should therefore be conceived as a cyclical process of monitoring and refinement, guided by frameworks such as RE-AIM

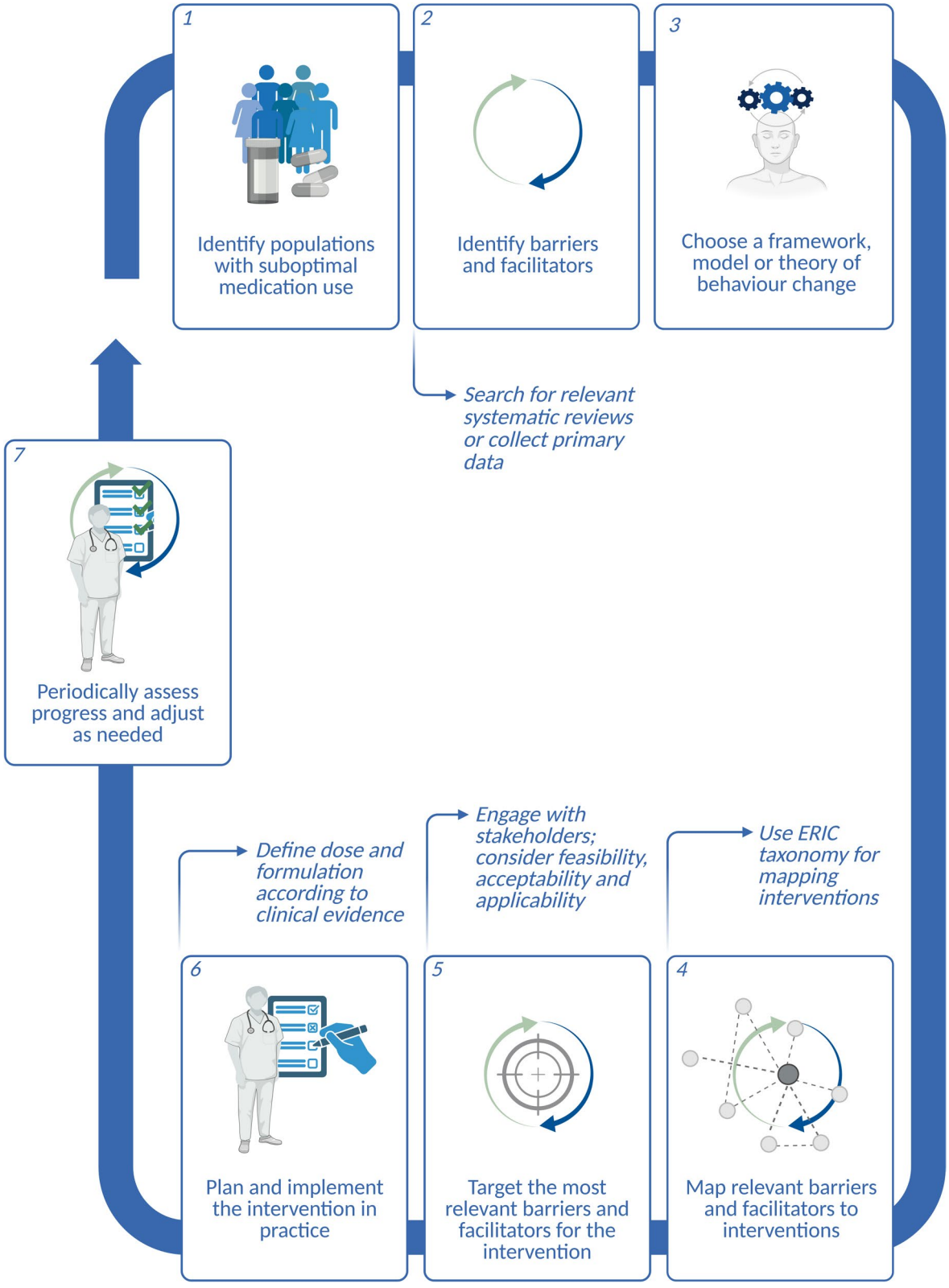

Fig. 1 | Example of a structured framework applicable to national guideline implementation. The stepwise implementation science approach, ranging from identifying patient groups with suboptimal medication use to reassessing outcomes, illustrates how continuous monitoring and feedback, targeted interventions, and stakeholder engagement can support the national implementation of evidence-based guidelines. Originally developed for GDMT, these principles align closely with the strategies discussed by the Guideline Workshop Taskforce and are broadly applicable across health systems. ERIC: Expert Recommendations for Implementing Change. Adapted and modified from Ghimire et al., 2025 [112]. Created with BioRender.com

Table 1 | Taskforce recommendations for national guideline implementation: priority areas, recommended strategies, and illustrative examples

Priority area	Recommended strategies	Illustrative examples
Translation and contextualisation	National synopses, pocket guides; contextual commentaries with fidelity to source guidance; evidence-informed adaptation of recommendations to national priorities, resources, and health technology assessment findings	DGK commentaries on ESC guidelines; ADA-KDIGO consensus
Digital platforms and education	Apps, decision-support systems, electronic health record integration; accredited CME via webinars/podcasts	ESC guideline app; CME webinars/podcasts
Monitoring, feedback and incentives	Registries, audits, feedback loops; pay-for-performance, recognition schemes; equity monitoring, coverage-linked incentives/reimbursement alignment	GWTG Program (AHA); nephrology framework
Patient engagement	Lay summaries, infographics, videos, involvement in development process, shared decision-making, self-management education/behaviour change support	ESC lay summaries; AHA "Top 10 Things to Know", Encounter decision aids
Long-term integration	Funded, national or regional implementation programmes	Examples vary by health system

and PRECEDE–PROCEED, which provide structured methods for assessing reach, adoption, behavioural factors, and policy context [110].

Experience from nephrology shows how implementation science frameworks can identify barriers, guide targeted interventions, and enable periodic reassessment to close gaps in the uptake of guideline recommendations [112]. Implementation science refers to the systematic study of methods that promote the uptake, integration, and sustained use of evidence-based recommendations in routine care. The approach emphasises assessment of context and determinants, the selection and tailoring of implementation strategies, and the routine use of implementation outcomes (e.g., adoption, fidelity, penetration, sustainability) alongside clinical endpoints [113–115]. Using the underutilisation of guideline-directed medical therapy (GDMT) as an illustrative example, these approaches combine stakeholder engagement with structured monitoring and feedback loops. While the example is medication-focused, the same core methods can inform national-level programmes for broader guideline implementation. Diagnostic and organisational recommendations may, however, require additional context-specific tactics (Fig. 1). To provide an overview of recommendations for national guideline implementation, Table 1 summarises the main domains, strategies, and illustrative examples.

Conclusions

International guidelines provide the foundation for evidence-based care, yet their translation into national practice remains inconsistent. Persistent barriers include linguistic and cultural challenges, limited communication to clinicians, and regulatory fragmentation.

Examples show that structured, context-sensitive approaches are feasible and can support more consistent uptake. National societies, government authorities, payers, and patient representatives all play important roles in this process, and implementation science offers frameworks to guide monitoring, feedback, and adaptation. While comprehensive national implementation programmes remain limited, the priorities identified here—translation and contextualisation, digital tools and education, monitoring and incentives, patient engagement, and long-term programme integration—represent actionable domains for progress.

Taken together, these insights underscore that guideline implementation should be regarded as an integral component of the guideline lifecycle, rather than an optional step. Transforming global guidance into national reality is a shared responsibility, achieved through collaboration and systematic implementation. Embedding translation, digital integration, monitoring, and stakeholder engagement into national programmes is essential to harmonise care and improve outcomes in cardiometabolic disease.

Abbreviations

ACEI	Angiotensin-converting enzyme inhibitors
ADA	American diabetes association
AHA	American heart association
AI	Artificial intelligence
ARBs	Angiotensin receptor blockers
CI	Confidence interval
CKD	Chronic kidney disease
CME	Continuing medical education
CRT	Cardiovascular round table
CVD	Cardiovascular disease
DGK	Deutsche Gesellschaft für Kardiologie, German Cardiac Society
EASD	European association for the study of diabetes
EASO	European association for the study of obesity
eGFR	Estimated glomerular filtration rate
ERA	European renal association
ERBP	European renal best practice
ERIC	Expert recommendations for implementing change
ESC	European society of cardiology
ESE	European society of endocrinology
FADOI	Federation of associations of hospital doctors in internal medicine
GDMT	Guideline-directed medical therapy
GLP-1RAs	Glucagon-like peptide 1 receptor agonists
GP	General practitioners
GWTG	Get with the guidelines
ISN	International society of nephrology
KDIGO	Kidney disease: improving global outcomes
MASLD	Metabolic dysfunction-associated steatotic liver disease
NCS	National cardiac societies
NGCs	National guidelines coordinators

NHS	National Health Service
NITs	Non-invasive tests
OR	Odds ratio
PCDE	Primary care diabetes Europe
SGLT2	Sodium-glucose co-transporter-2
T2D	Type 2 diabetes
TNT	Time needed to treat
USPSTF	United States Preventive Services Task Force
WONCA Europe	World Organization of Family Doctors Europe

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Christoph Wanner received honoraria for steering committee and Adboard participation as well as lecturing from Alexion, AstraZeneca, Bayer, Boehringer Ingelheim, Eli Lilly, MSD, Novo Nordisk, Sanofi and Vera Therapeutics. Francesco Cosentino served on the advisory boards of Merck Sharp and Dohme, Bristol Myers Squibb, Pfizer and as a consultant to AstraZeneca, Boehringer Ingelheim, Eli Lilly, Merck Sharp and Dohme, Novo Nordisk, Neopharmed, Berlin Chemie. Katharine Barnard-Kelly is founder and shareholder at Spotlight-AQ Ltd. Katharine Barnard-Kelly has received research support from Dexcom, Embecta, JDRF, Novo Nordisk and Roche Diabetes Care, and honoraria from Sanofi. Tadej Battelino has served on the advisory boards of Abbott, Boehringer Ingelheim, Dreamed Diabetes, Eli Lilly and Company, Indigo Diabetes, Medtronic, Novo Nordisk, and Sanofi. Tadej Battelino has received speaker's bureau honoraria from Abbott, Eli Lilly and Company, Medtronic, Novo Nordisk, Roche, and Sanofi. The University Medical Center has received research grant support from Abbott, GluSense, Medtronic, Novo Nordisk, Sandoz, Sanofi, and Zealand Pharma. Matthias Blüher received honoraria for lectures and as consultant from Amgen, AstraZeneca, Bayer, Boehringer Ingelheim, Daiichi Sankyo, Eli Lilly and Company, MSD, Novo Nordisk, and Sanofi. Helena N. Boll is an employee of Sciarc GmbH. Frank C. Brosius is a consultant for MAKSCIENTIFIC. Luca Busetto has nothing reported. Antonio Ceriello reports consulting and speaking for Abbott, Bayer, Berlin Chemie, Boehringer Ingelheim, Cipla, Hikamar Pharma, Guidotti, Eli Lilly, MSD, Merck, Novo Nordisk, Sanofi, Servier, SUN Pharma. James R. Gavin III has served on the advisory boards of Abbott Diabetes Care and Embecta, and on the speaker's bureaus of Boehringer Ingelheim and Eli Lilly and Company. Francesco Giorgino has served on the advisory boards of AstraZeneca, Eli Lilly and Company, Novo Nordisk, Roche Diabetes Care, Sanofi and as a consultant to AstraZeneca, Boehringer Ingelheim, LifeScan, Medimmune, Medtronic, Merck Sharp & Dohme, Roche Diabetes Care and Sanofi. FG has also received research support from Eli Lilly and Company and Roche Diabetes Care. Jennifer Green has nothing reported. Linong Ji declares that he has no competing interests. Monika Kellerer has served on advisory boards of Abbott Diabetes Care, AstraZeneca, Bayer AG, Boehringer Ingelheim, Eli Lilly, Novo Nordisk and Sanofi. Sue Koob has nothing reported. Nebojsa Lalic declares that he has no competing interests. Nikolaus Marx has received research grants from Boehringer Ingelheim and MSD, speaking fees from Amgen, AstraZeneca, Bayer, BMS, Boehringer Ingelheim, Eli Lilly and Company, MSD, Novo Nordisk, and Sanofi-Aventis and has served or serves on the advisory board of Amgen, Bayer, BMS, Boehringer Ingelheim, MSD, Novo Nordisk, and Sanofi-Aventis. All honoraria are paid to the Aachen University Hospital. Prashant Nedungadi has nothing reported. Christopher G. Parkin has nothing reported. Helena W. Rodbard provides consulting to Bayer, Endogenex, Gan and Lee, Eli Lilly, Novo Nordisk, Kriya Therapeutics, Skye Bioscience, Pacira, Yonis, and Sanofi. She engages in lecturing on behalf of Eli Lilly. She conducts clinical trials with support from Eli Lilly, Novo Nordisk, and Medtronic/MiniMed. Lars Rydén declares that he has no competing interests related to this work. Banshi Saboo has nothing reported. Wayne Huey-Herng Sheu has nothing reported. Eberhard Standl reports personal fees from Oxford Diabetes Trials Unit, Bayer, Berlin Chemie, Boehringer Ingelheim, Menarini, Merck Serono, EXCEMED, Novartis, Novo Nordisk, and Sanofi. Frank Tacke's lab has received research grants (funding to the institution) from AstraZeneca, MSD, Gilead, Agomab; he has received honoraria for consulting or lectures from Gilead, Abbvie, Falk, AstraZeneca, Boehringer, Madrigal, MSD, GSK, Ipsen, Mirum, Novartis, Novo Nordisk, Sanofi. Pinar Topsever served on Advisory Boards of Eli Lilly, AstraZeneca, Boehringer Ingelheim, Abbott and LifeScan, and has served on the speaker's bureau for AstraZeneca and Novo Nordisk. Pinar Topsever received grant/research support from PCDE, made possible by corporate sponsorship from AstraZeneca, Eli Lilly, Novo Nordisk, and Roche Diagnostics; the sponsors had no input into the study protocols. Oliver Schnell is founder and CEO at Sciarc GmbH, Baierbrunn, Germany.

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