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From national evidence to global implementation: evolving public health guideline methodology for a changing world

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Public health guidelines are increasingly used in populations and settings beyond those represented in their supporting evidence. Existing methods assess evidence certainty and support contextualisation, but guideline users may lack a clear account of whose experiences and which settings informed a recommendation. Using the 24-hour movement guidelines as an example, we propose that panels explicitly define the intended implementation population and report how well it is represented in the evidence base. A short, domain-based template could document population characteristics, geographic and health-system contexts, measurement approaches, plausible effect modifiers and implementation evidence. Identified gaps would then inform established assessments of indirectness, equity, feasibility and research priorities. Representation is distinct from transportability: sparse local evidence does not, by itself, mean that a recommendation is inapplicable or should be weakened. Panels should explain when gaps affect confidence in a recommendation and when they primarily call for local implementation evidence or surveillance. Publishing this assessment alongside evidence profiles would make globally disseminated guidelines easier to interpret, adapt and update.

Keywords public health guidelines; evidence representation; transportability; implementation; health equity; 24-hour movement behaviours

Public health guidelines increasingly influence populations beyond those represented in the evidence from which they were developed. By translating evidence into practical recommendations, they have improved the consistency, transparency and credibility of health policy worldwide [1–3]. Guidelines developed by the World Health Organization (WHO), professional societies and national organisations are routinely adopted or adapted across geographic, cultural and socioeconomic settings [1,4].

This global reach is a success of evidence-based public health, but it raises an important methodological question. Guideline development appropriately assesses whether evidence is sufficiently

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certain to support a recommendation [2,3]. For recommendations disseminated beyond their original setting, it should also report how well the populations and contexts represented in the evidence align with those intended to receive the recommendation.

The 24-hour movement guidelines provide a useful example [5–7]. By integrating physical activity, sedentary behaviour and sleep, they recognise that behaviours across the day are interdependent. The framework has generated research in 32 countries [8], yet its epidemiological evidence remains concentrated in high-income settings. Comparable applicability concerns have been reported for diabetes [9] and stroke-rehabilitation guidelines [10] in low- and middle-income countries. In the latter review, guidelines adapted from high-income countries often had limited stakeholder involvement and analysis of local health systems or patient pathways [10]. These examples support the broader relevance of the problem beyond movement behaviours.

We do not question existing recommendations or suggest that every country develop independent guidelines. We propose a structured reporting step that makes the relationship between the intended implementation population and the evidence populations visible within the existing guideline-development workflow.

CURRENT GUIDELINE METHODOLOGY HAS TRANSFORMED EVIDENCE-BASED DECISION MAKING

Frameworks such as GRADE, AGREE II and the WHO Handbook for Guideline Development assess evidence certainty, benefits and harms, stakeholder values and decision rationales [1–4]. WHO-INTEGRATE and GRADE Evidence-to-Decision frameworks also consider feasibility, equity, acceptability and implementation [2,11,12]. These approaches should remain the methodological foundation.

GRADE assesses whether evidence is indirect with respect to the population, intervention, comparator or outcome in the guideline question [2,13], while WHO guidance supports contextualisation across countries and health systems [1,14]. External validity and transportability methods likewise ask whether causal effects estimated in a study population apply to a specified target population, considering effect modifiers and population differences [15,16]. However, these assessments may not produce a readily visible account of who contributed evidence, which relevant dimensions are missing, and what those gaps mean for implementation. Our proposal makes that account an explicit output rather than introducing a new concept or replacing established judgments.

This transparency would complement existing approaches to evidence appraisal and contextualisation, help policymakers interpret globally disseminated recommendations, and identify populations and settings that should be prioritised in future research.

We distinguish representation from generalisability. Representation describes the empirical coverage of the evidence across prespecified population and setting characteristics. It is descriptive and multidimensional, not a claim that a sample must mirror every demographic proportion in the target population. Generalisability or transportability concerns whether an association or causal effect applies in the target population [15,16]. That causal judgment depends on overlap in relevant characteristics, plausible effect modifiers, consistency and assumptions, rather than demographic similarity alone. Poor representation therefore does not automatically imply poor transportability, and apparent demographic representation does not ensure that health-system or cultural conditions support implementation. When missing populations differ on plausible effect modifiers, underrepresentation may constitute GRADE indirectness and reduce certainty or recommendation strength [13]. Otherwise, it may remain an informational or implementation gap that should be reported without changing the recommendation.

THE 24-HOUR MOVEMENT GUIDELINES ILLUSTRATE A BROADER METHODOLOGICAL CHALLENGE

The 24-hour movement guidelines [5–7] illustrate this distinction. Their integrated approach has influenced surveillance, research and policy internationally, with studies using the guidelines reported across 32 countries [8]. Most supporting evidence, however, was generated in high-income settings. The concern is not that behaviour-health associations necessarily differ elsewhere, but that users are seldom given a structured description of the evidence's population and contextual coverage.

Sub-Saharan Africa is a case in point. A review among preschool-aged children identified only three eligible studies, two using the same South African sample, and none with usable sleep data [17]. Rural children were more likely than urban children to meet the combined guidelines in Kenya [18], with a similar pattern in Mozambique [19]. These findings demonstrate heterogeneity in behavioural prevalence and implementation context, not effect modification. Cameroon developed a physical activity policy with almost no local movement-behaviour surveillance, emphasising infrastructure and communication priorities negotiated across seven ministries [20]. Its device-measured adult evidence remains limited to one study published a decade ago [21]. The methodological concern is therefore not population size or country counts alone. It is whether relevant exposures, effect modifiers, social conditions, measurement approaches and implementation environments are adequately captured.

These gaps should not be reduced to a regional label. Differences between rural and urban settings, socioeconomic groups and countries may be as important as differences between broad regions. Yet country-by-country guideline development would be inefficient where surveillance infrastructure and resources are limited. The appropriate response is to separate two evidence questions: whether the biological or epidemiological basis is transportable, and whether local evidence supports feasibility, acceptability, communication and surveillance. The second may require direct evidence even when the first is plausible.

Accordingly, evidence representation should be assessed after evidence synthesis and indirectness appraisal, and before Evidence-to-Decision deliberation and implementation planning. This placement allows representation gaps to inform established judgments about certainty, equity, feasibility and contextualization while remaining visible as a distinct reporting domain, not a new criterion. Table 1 summarises how this reporting step can be integrated into established guideline-development processes, from defining the scope to implementation and future updating.

Table 1. Existing methodological questions addressed during guideline development and additional considerations for recommendations intended for global implementation

Established methodological step	Explicit representation output for globally disseminated recommendations
Define scope and PICO	Prospectively define the intended population and settings across decision-relevant dimensions
Synthesise evidence and assess indirectness	Compare evidence populations with the intended population using structured domains and identify plausible effect modifiers
Determine certainty and recommendation strength	Distinguish informational gaps from genuine indirectness that may affect certainty or recommendation strength
Evidence-to-Decision deliberation	Use representation gaps and stakeholder knowledge to inform equity, feasibility, acceptability and contextualization
Plan implementation and updating	Report missing information and prioritise surveillance, implementation evidence and research for future updates

TOWARDS THE NEXT GENERATION OF GLOBAL PUBLIC HEALTH GUIDELINE DEVELOPMENT

The intended implementation population is the people and settings to which a panel expects the recommendation to apply, not simply the guideline sponsor's jurisdiction. A recommendation may be global in geographic scope while restricted by age, clinical risk or setting. Panels should

define this target prospectively by relevant dimensions such as age, clinical risk, geography, socioeconomic circumstances, race or ethnicity where appropriate, urbanicity, culture, health-system capacity, disease burden and baseline exposure. They should also identify whether each dimension is relevant primarily to the underlying association, implementation, or both. Only dimensions plausibly related to effects or implementation need detailed assessment.

Three practical steps can operationalise the proposal. First, panels should specify the intended population and settings when defining the guideline scope. Second, alongside evidence profiles, they should use a short domain-based template to compare the evidence with that target. Third, they should carry identified gaps into indirectness judgments, Evidence-to-Decision deliberations, implementation plans and research priorities. This produces a traceable link from scope to evidence appraisal and action while avoiding a parallel grading system.

The template should record: geographic and sociodemographic coverage; clinical characteristics and baseline exposure or risk; cultural and health-system context; study design, sample size and representativeness; measurement comparability; plausible effect modifiers; and implementation evidence. For each domain, panels could classify coverage as adequate, limited, absent or unclear and provide a brief rationale, without calculating a composite score. Judgments should consider the informativeness and quality of samples, not merely count studies, countries or income groups. A large representative study may contribute more than several small convenience samples. Systematic-review teams should extract these characteristics when routinely reported. Panels should state when information is unavailable rather than undertake burdensome reconstruction from every primary study, although targeted extraction or author contact may be warranted when a gap could alter certainty, recommendation strength or implementation. This proportional approach makes the assessment reproducible while limiting burden.

No universal threshold can define actionable underrepresentation. Panels should explain whether absent direct evidence is reasonably bridged by neighbouring or epidemiologically similar settings, biological plausibility and consistency of effects, or whether suspected effect modification or major contextual differences warrant downgrading, a qualified recommendation or implementation research. Complete absence from an intended region should normally be reported, even when transportability is judged plausible. Stakeholders from underrepresented populations should help make these judgments. Their experiential and contextual knowledge can identify relevant outcomes, values, barriers and adaptations that published studies miss. It may partly address gaps in contextual understanding, but it should complement rather than be treated as a substitute for empirical evidence.

CONCLUSIONS

Evidence-based guidelines have transformed public health through rigorous and transparent recommendations. As their reach expands, panels should provide an equally transparent, multidimensional account of who and which settings are represented in the evidence. This structured step complements GRADE, WHO-INTEGRATE and contextualisation by linking evidence representation to indirectness, implementation and research priorities. Publishing the completed template with the evidence profiles would let users see the panel's rationale, distinguish missing evidence from negative evidence and revisit judgments transparently when new studies emerge.

The 24-hour movement guidelines illustrate why the distinction matters. Sparse evidence from a setting does not establish that a recommendation is inappropriate, but it may limit confidence in transportability, surveillance choices or feasible delivery. Explicit reporting, informed by local stakeholders, would help policymakers distinguish these possibilities and direct research toward gaps most consequential for the next guideline update.

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REFERENCES

1 World Health Organization. WHO handbook for guideline development. 2nd edition. Geneva, Switzerland: World Health Organization; 2014. Available: https://www.who.int/publications/i/item/9789241548960. Accessed: 12 November 2026.

2 Guyatt GH, Oxman AD, Vist GE, Kunz R, Falck-Ytter Y, Alonso-Coello P, *et al;* GRADE Working Group. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. BMJ. 2008;336:924–6. **Medline:18436948 doi:10.1136/bmj.39489.470347.AD**

3 Brouwers MC, Kho ME, Browman GP, Burgers JS, Cluzeau F, Feder G, *et al;* AGREE Next Steps Consortium. AGREE II: advancing guideline development, reporting and evaluation in health care. CMAJ. 2010;182:E839–42. **Medline:20603348 doi:10.1503/cmaj.090449**

4 Alonso-Coello P, Schünemann HJ, Moberg J, Brignardello-Petersen R, Akl EA, Davoli M, *et al;* GRADE Working Group. GRADE Evidence to Decision (EtD) frameworks: a systematic and transparent approach to making well informed healthcare choices. 1: Introduction. BMJ. 2016;353:i2016. **Medline:27353417 doi:10.1136/bmj.i2016**

5 Ross R, Chaput JP, Giangregorio LM, Janssen I, Saunders TJ, Kho ME, *et al.* Canadian 24-Hour Movement Guidelines for Adults aged 18-64 years and Adults aged 65 years or older: an integration of physical activity, sedentary behaviour, and sleep. Appl Physiol Nutr Metab. 2020;45:S57–102. **Medline:33054332 doi:10.1139/apnm-2020-0467**

6 Tremblay MS, Chaput JP, Adamo KB, Aubert S, Barnes JD, Choquette L, *et al.* Canadian 24-Hour Movement Guidelines for the Early Years (0-4 years): An Integration of Physical Activity, Sedentary Behaviour, and Sleep. BMC Public Health. 2017;17 Suppl 5:874. **Medline:29219102 doi:10.1186/s12889-017-4859-6**

7 Tremblay MS, Carson V, Chaput JP, Connor Gorber S, Dinh T, Duggan M, *et al.* Canadian 24-Hour Movement Guidelines for Children and Youth: An Integration of Physical Activity, Sedentary Behaviour, and Sleep. Appl Physiol Nutr Metab. 2016;41:S311–27. **Medline:27306437 doi:10.1139/apnm-2016-0151**

8 Hossian M, Mielke GI, Nisar M, Tremblay MS, Khan A. Global research on 24-hour movement behaviours guidelines in children and adolescents: a systematic review. Int J Behav Nutr Phys Act. 2025;22:108. **Medline:40781309 doi:10.1186/s12966-025-01809-5**

9 Owolabi MO, Yaria JO, Daivadanam M, Makanjuola AI, Parker G, Oldenburg B, *et al.* Gaps in guidelines for the management of diabetes in low- and middle-income versus high-income countries: a systematic review. Diabetes Care. 2018;41:1097–105. **Medline:29678866 doi:10.2337/dc17-1795**

10 Gandhi DBC, Kamalakannan S, Urimubenshi G, Sebastian IA, Montanaro VVA, Chawla NS, *et al.* Stroke rehabilitation clinical practice guidelines in low- and middle-income countries: a systematic review of quality and unique features. Cerebrovasc Dis. 2025;54:429–40. **Medline:39097962 doi:10.1159/000539999**

11 Rehfuess EA, Stratil JM, Scheel IB, Portela A, Norris SL, Baltussen R. The WHO-INTEGRATE evidence to decision framework version 1.0: integrating WHO norms and values and a complexity perspective. BMJ Glob Health. 2019;4 Suppl 1:e000844. **Medline:30775012 doi:10.1136/bmjgh-2018-000844**

12 Schünemann HJ, Wiercioch W, Brozek J, Etxeandia-Ikobaltzeta I, Mustafa RA, Manja V, *et al.* GRADE Evidence to Decision (EtD) frameworks for adoption, adaptation, and de novo development of trustworthy recommendations: GRADE-ADOLOPMENT. J Clin Epidemiol. 2017;81:101–10. **Medline:27713072 doi:10.1016/j.jclinepi.2016.09.009**

13 Guyatt GH, Oxman AD, Kunz R, Woodcock J, Brozek J, Helfand M, *et al.* GRADE guidelines: 8. Rating the quality of evidence-indirectness. J Clin Epidemiol. 2011;64:1303–10. **Medline:21802903 doi:10.1016/j.jclinepi.2011.04.014**

14 World Health Organization Regional Office for Europe. Strengthening countries' capacities to adopt and adapt evidence-based guidelines: a handbook for guideline contextualization. Copenhagen, Denmark: WHO Regional Office for Europe; 2023. Available: https://iris.who.int/items/92ecfa5d-9bbf-4b81-aae5-98b3cea1ab7d. Accessed: 11 November 2026.

REFERENCES

15 Rothwell PM. External validity of randomised controlled trials: 'To whom do the results of this trial apply?'. Lancet. 2005;365:82–93. Medline:15639683 doi:10.1016/S0140-6736(04)17670-8

16 Degtiar I, Rose S. A review of generalizability and transportability. Annu Rev Stat Appl. 2023;10:501–24. doi:10.1146/annurev-statistics-042522-103837

17 Nusurupia J, Reilly JJ, Janssen X. Pre-school children's compliance with the WHO 24-hour movement behaviour guidelines: A systematic review of Sub-Saharan African studies. Afr J Phys Act Health Sci. 2020;26:345–59.

18 Swindell N, Wachira LJ, Okoth V, Kagunda S, Owino G, Ochola S, *et al.* Prevalence and correlates of compliance with 24-h movement guidelines among children from urban and rural Kenya-The Kenya-LINX project. PLoS One. 2022;17:e0279751. Medline:36584149 doi:10.1371/journal.pone.0279751

19 Manyanga T, Barnes JD, Chaput JP, Katzmarzyk PT, Prista A, Tremblay MS. Prevalence and correlates of adherence to movement guidelines among urban and rural children in Mozambique: a cross-sectional study. Int J Behav Nutr Phys Act. 2019;16:94. Medline:31661004 doi:10.1186/s12966-019-0861-y

20 Tatah L, Mapa-Tassou C, Shung-King M, Oni T, Woodcock J, Weimann A, *et al.* Analysis of Cameroon's Sectoral Policies on Physical Activity for Noncommunicable Disease Prevention. Int J Environ Res Public Health. 2021;18:12713. Medline:34886439 doi:10.3390/ijerph182312713

21 Assah F, Mbanya JC, Ekelund U, Wareham N, Brage S. Patterns and correlates of objectively measured free-living physical activity in adults in rural and urban Cameroon. J Epidemiol Community Health. 2015;69:700–7. Medline:25841243 doi:10.1136/jech-2014-205154

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