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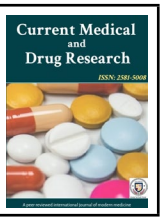

A Scoping Review of Integrating Epidemiologic Evidence and Health Literacy to Support Community Action

Shima Ali Sadia

King Graduate School, Monroe University, United States

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ABSTRACT

Background: Epidemiologic evidence can inform community action only when individuals and communities are able to access, comprehend, critically appraise, and apply relevant information, and when public health systems minimize avoidable demands on these capabilities. Health literacy therefore functions as a critical link between the interpretation of epidemiologic evidence, the development of guidance, risk communication, community engagement, and the material and institutional conditions necessary for action. However, these interrelated processes are often examined within separate bodies of literature.

Objective: This study aims to map the processes through which epidemiologic evidence is translated into health-literacy-responsive guidance and communication, identify the mechanisms and barriers that shape its progression toward community action, and develop integrated evidence–health literacy–action framework.

Methods: A scoping review followed JBI guidance and PRISMA-ScR reporting principles. PubMed and authoritative public health repositories were searched for English-language empirical studies, reviews, frameworks, and guidance addressing epidemiologic evidence, evidence-informed guidance, health literacy, knowledge translation, risk communication, community engagement, implementation, or community behavior. Data were charted by pathway stage, actors, mechanisms, context, equity considerations, and outcomes, then synthesized narratively through a health-literacy lens.

Results: Twenty-two sources were included: 17 peer-reviewed publications and 5 institutional documents. Five linked stages were identified: epidemiologic signal and community information needs; evidence synthesis and accessible interpretation; health-literacy-responsive guidance development; community translation and supported implementation; and action, outcomes, and feedback. Across stages, health literacy operated as a relational capacity shaped by the clarity, accessibility, credibility, cultural relevance, and actionability of information and by the resources available to act. Evidence-to-action was strengthened by triangulating evidence, communicating uncertainty, involving communities early, using trusted intermediaries, adapting language and delivery, pairing messages with accessible services or products, and maintaining feedback loops. Recurrent barriers were technical or inconsistent guidance, one-way communication, low trust, high comprehension or numeracy demands, language and digital exclusion, inequitable access, and evaluation limited to reach.

Conclusions: The translation of epidemiologic evidence into community action is negotiated and iterative rather than a linear transmission of facts. Health literacy should be treated as a shared responsibility of individuals, communities, communicators, and institutions. Equitable action is more likely when evidence is interpreted transparently, guidance is understandable and actionable, lived experience shapes delivery, and practical resources and continuous learning are integrated within an accountable pathway.

INTRODUCTION

Epidemiologic surveillance and research characterize the distribution, determinants, and consequences of health-related events. However, epidemiologic evidence can improve population health only when it is translated into decisions and actions that communities can understand, critically assess, and implement. The pathway from an epidemiologic finding to a community response involves multiple interpretive, communicative, and practical processes. These include evaluating the quality, certainty, and contextual relevance of the evidence; integrating considerations of values, feasibility, equity, and resource availability; formulating actionable guidance; communicating risk and uncertainty; adapting information through meaningful community engagement; and ensuring that individuals and communities have a realistic opportunity to act.

Health literacy provides a useful organizing concept for these transitions. In public health, it encompasses the knowledge, motivation, and competencies needed to access, understand, appraise, and apply health information [18]. Clear-communication and risk-communication guidance place a corresponding responsibility on organizations to reduce avoidable complexity and present information in forms that support decisions and action [17,22]. Limited action should therefore not be interpreted only as an individual deficit: information can be technically accurate yet unusable because it is complex, inaccessible, linguistically mismatched, untrusted, or disconnected from feasible choices.

Evidence-informed decision-making is broader than the transmission of research results. WHO defines it as identifying, appraising, and mobilizing the best available evidence for policy and programmes [1]. Quantitative estimates of risk or effect are necessary but rarely sufficient. Qualitative evidence can reveal acceptability, feasibility, values, implementation constraints, and unequal burdens [2], while community knowledge can identify information needs, trusted channels, local resources, and structural barriers that formal datasets miss [3-5]. Research on knowledge translation, guideline development, communication, community engagement, and implementation has expanded, but these literatures often examine only one transition. From a health-literacy perspective, the central gap is whether evidence remains accurate, understandable, credible, and actionable as it moves into community settings.

This review asked: (1) how is epidemiologic evidence transformed into health-literacy-responsive guidance and community action; (2) how do access, understanding, appraisal, and application operate across the pathway; (3) which mechanisms, actors, and contexts enable or interrupt each transition; and (4) how are equity, trust, uncertainty, feasibility, and feedback addressed? The objective was to develop an integrated framework spanning evidence generation, health literacy, community action, and learning.

METHODOLOGY

Design and eligibility

We conducted a scoping review using JBI methodological guidance and PRISMA-ScR reporting principles [6,7]. The population-concept-context framework defined eligibility. Populations were communities or non-specialist publics. The concept was translation from epidemiologic or related public health evidence through health-literacy-responsive interpretation, guidance, and communication to community-level access, understanding, appraisal, decisions, behavior, participation, service use, or collective action. Contexts included routine prevention, health promotion, infectious and environmental risks, vaccination, emergencies, and health inequalities in any country or communication channel.

Eligible sources were peer-reviewed empirical studies, evidence syntheses, conceptual frameworks with operational implications, and guidance or evaluations from recognized public health institutions. Sources had to address at least two parts of the evidence-to-action pathway or a health-literacy-related mechanism connecting them, such as clear communication, language accessibility, trust, community engagement, or implementation support. We excluded communication limited to individual clinical encounters, commercial marketing, and commentary without transferable findings. The primary evidence search was restricted to English-language materials published from 1 September 2015 through 31 August 2025. Earlier foundational reviews and guidelines were retained when they were directly relevant to the evidence-to-action pathway.

Search, selection, and synthesis

PubMed and WHO, CDC, JBI, PRISMA, and EQUATOR repositories were searched using combinations of epidemiology, surveillance, evidence-informed decision-making, evidence-to-policy, guideline, health literacy, clear communication, knowledge translation, risk communication, community engagement, implementation, behavior, equity, language access, and evaluation. Citation chaining supplemented retrieval. Sources were assessed against eligibility criteria and charted by stage, evidence type, actors, health-literacy function (access, understanding, appraisal, or application), translation strategy, community role, contextual barrier or enabler, equity consideration, and outcome. Directed content analysis and framework synthesis grouped findings into pathway stages and cross-cutting mechanisms. Health literacy was used as an integrative lens that included explicitly labeled health-literacy evidence and adjacent evidence on communication accessibility, trust, engagement, and feasibility.

RESULTS

Evidence characteristics

Twenty-two sources were included: 17 peer-reviewed publications and 5 institutional guidance documents. Evidence comprised scoping and systematic reviews, mixed-methods

Table 1: Five-stage pathway from epidemiologic evidence and health literacy to community action

Stage	*Core work*	*Key output*
1. Epidemiologic signal and community information needs	Detect and characterize magnitude, distribution, determinants, uncertainty, lived experience, information needs, and the information environment.	A problem definition identifying affected groups, inequities, uncertainty, information gaps, and decision needs.
2. Evidence synthesis and accessible interpretation	Appraise and triangulate epidemiologic, intervention, qualitative, economic, ethical, and local evidence; explain relevance and uncertainty.	A decision-ready synthesis that is accurate, transparent, and interpretable, with benefits, harms, feasibility, and gaps.
3. Health-literacy-responsive guidance development	Convert evidence into clear, actionable recommendations while considering values, equity, language, numeracy, resources, acceptability, and implementation capacity.	Understandable, proportionate, and updateable guidance with a specified audience, action, rationale, uncertainty, and alternatives.
4. Community translation and supported implementation	Co-design messages and delivery; adapt language, format, messenger, channel, service pathways, and practical supports.	Locally credible communication and accessible means to appraise and perform the recommended action.
5. Action, outcomes, and feedback	Measure access, understanding, appraisal, decisions, behavior, collective action, service use, equity, harms, and health outcomes.	Feedback that improves communication, implementation, guidance, and future evidence generation.

Source: Authors' synthesis of included evidence.

and experimental studies, implementation frameworks, and WHO and CDC guidance. Emergency and COVID-19 settings were prominent, but evidence on health literacy, clear communication, risk communication, language access, knowledge translation, mass-media campaigns, community-based interventions, and guideline development supported wider application. Although only a subset explicitly used health-literacy terminology, several sources addressed its core functions through accessibility, comprehension, credibility, participation, and support for action. Evidence from high-income and English-language settings predominated.

Stage 1: Epidemiologic signal and community information needs

Surveillance data establish who is affected, where, when, and to what degree, but health-literacy-responsive action begins by identifying what affected communities need to know, how they seek and interpret information, and what constraints shape response. Distribution by place and social position, service availability, language, digital access, public concerns, rumor patterns, and lived experience influence both the interpretation of risk and the feasibility of response. WHO's 2024 community-protection framework recommends integrating collaborative surveillance, community-centred public health interventions, and multisectoral action, with communities involved in co-design and co-delivery [8]. Social listening and rapid community assessment can identify information voids, misunderstood concepts, trusted channels, and practical barriers, guided by privacy protections, bias awareness, and triangulation with representative data sources [9].

Stage 2: Evidence synthesis and accessible interpretation

Evidence becomes decision-ready when estimates are appraised for certainty, relevance, and equity and combined with qualitative, implementation, economic, and ethical evidence. A health-literacy lens asks not only whether a synthesis is scientifically valid, but also whether its implications, limits, and uncertainty can be represented without avoidable complexity or distortion. Qualitative evidence synthesis can inform guideline scope, recommendations, acceptability, and implementation [2]. Interpretation should distinguish what is known, uncertain, and changing; overstated certainty can produce larger losses of trust when evidence changes [10]. Rapid timelines still require clear documentation of sources, assumptions, affected populations, knowledge gaps, and the practical meaning of findings.

Stage 3: Health-literacy-responsive guidance development

Health-literacy-responsive guidance translates evidence into a recommended course of action while minimizing unnecessary cognitive, language, and numeracy demands. This requires consideration of epidemiologic magnitude alongside benefits and harms, values, acceptability, feasibility, resources, equity, and system capacity [1,18]. Guideline-development manuals increasingly recommend involving patients or public representatives, but concrete methods remain inconsistently specified and participation is uneven across stages [11]. Guidance should specify the audience, recommended action, rationale, expected benefits and harms, uncertainty, implementation conditions, review triggers, and feasible alternatives. Clear-language review and audience testing should assess whether intended users can locate the main message, understand its meaning, judge its relevance, and identify the next step [17].

Stage 4: Community translation and supported implementation

Community translation is relational and bidirectional, not a final act of simplification. Reviews of public health knowledge-translation strategies describe tailored materials, knowledge brokers, deliberation, partnerships, training, networks,

Table 2: Mechanisms that strengthen or interrupt health-literacy-responsive evidence-to-action transitions

Mechanism	*Enabling practice*	*Common failure*
Evidence pluralism	Combine epidemiologic estimates with qualitative, implementation, economic, ethical, and community evidence; explain uncertainty and distribution.	Present a single risk estimate as a complete decision or omit uncertainty, context, and unequal effects.
Community power	Engage communities early, define decision rights, compensate participation, and report how input changed evidence interpretation, guidance, or delivery.	Consult after guidance is largely fixed or use participation only to legitimize decisions.
Health literacy and trust	Reduce unnecessary complexity; explain the action, rationale, uncertainty, trade-offs, and update process in accessible language through credible messengers; test understanding and usability.	Issue technical, inconsistent, overly certain, stigmatizing, untranslated, or one-way communication.
Feasibility and access	Pair guidance with services, products, time, transport, protection, and culturally appropriate support.	Assume knowledge is the main constraint or recommend actions people cannot perform.
Equity and inclusion	Assess differential information access, comprehension, language, disability, numeracy, digital access, burdens, and benefits.	Use universal delivery that creates unequal information demands or widens existing inequalities.
Feedback and adaptation	Monitor access, understanding, action, equity, and harms; revise communication, delivery, guidance, and evidence priorities using community feedback.	Measure only reach, retain obsolete guidance, or treat non-adoption as public resistance.

Source: Synthesis of included evidence.

reminders, and interactive dissemination [12]. Clear language, culturally and linguistically appropriate formats, audience testing, trusted messengers, and accessible channels improve usability [17,18,20,22]. These communication practices work best when paired with material opportunity. Mass-media campaigns combined with free or reduced-cost products improved target behaviors by a median 8.4 percentage points across 22 studies [13], illustrating that information and the means of action should be designed together.

Community engagement extends health literacy from individual comprehension to collective sense-making and decision-making. It can improve health behavior, self-efficacy, access, and outcomes, although effects vary by model and context [3-5]. Prior relationships, power sharing, institutional support, culturally congruent delivery, and community health workers are recurrent enablers [4,14]. Engagement should occur throughout problem definition, guidance development, delivery, evaluation, and message pretesting, allowing communities to question, adapt, and influence both information and implementation [16,21].

Stage 5: Action, outcomes, and feedback

Reach, impressions, and recall are insufficient endpoints. Evaluation should examine whether audiences could access the information, identify the main message, understand risk and uncertainty, appraise credibility and relevance, locate required services or supports, and complete the recommended action. It should then connect these health-literacy outcomes to decisions, behavior, service use, collective action, equity, unintended harms, and health outcomes. Community-based knowledge-translation strategies have shown possible reductions in maternal, neonatal, and perinatal mortality, although evidence remains limited and context-dependent [15]. Feedback should flow upstream: implementation failures may require more accessible information, different delivery supports, revised guidance, or new epidemiologic and qualitative inquiry rather than stronger messaging alone.

Cross-cutting mechanisms

DISCUSSION

Principal findings

This review positions health literacy as the functional bridge between epidemiologic evidence and community action. The pathway is iterative rather than linear: evidence must be interpreted, guidance must reduce avoidable complexity, communication must support access, understanding, appraisal, and application, and action must be materially feasible. Health literacy therefore emerges as a relational property of people, communities, messages, institutions, and service environments, not solely as an individual attribute. Feedback from implementation can alter communication, guidance, and the questions asked of surveillance and research.

The main loss points occur at transitions: epidemiologic evidence is treated as self-interpreting; uncertainty is translated poorly; guidance assumes high literacy or numeracy; communities are engaged too late; language, disability, and digital access are overlooked; messages are not paired with accessible resources; and evaluation stops at reach. The strongest approaches connect scientific and community knowledge, communicate uncertainty, use accessible formats and trusted relationships, support deliberation, and make the recommended action practically possible.

Implications for public health and health literacy practice

The decision and the affected communities' information

needs should be defined before an evidence synthesis is commissioned. A decision framework should document certainty, relevance, equity, acceptability, feasibility, resource needs, and uncertainty. During guidance development, a health-literacy review should identify the essential action, remove unnecessary jargon, explain numbers and uncertainty, present feasible alternatives, ensure language, disability, and digital accessibility, and test the guidance with intended users. Community partners should be engaged in problem definition, guidance development, delivery, and evaluation, with meaningful influence and appropriate compensation. Communication should be paired with the products, services, protections, and social support needed for action. Evaluation should follow the pathway from access to understanding, appraisal, and action, measure equity impacts and harms, and use findings to improve delivery, revise guidance, and establish future evidence priorities.

Health literacy and equity implications

Health literacy is socially patterned, but it should not be framed as a deficit located in populations. Guidance can create unequal demands and costs through complex language or numeracy, work conditions, housing, transport, caregiving, disability, immigration status, language, or digital access. Equity should therefore be assessed at every stage: whose data are visible, whose evidence counts, whose information needs are recognized, who can access, understand, and appraise the guidance, who can perform the recommended action, and who bears unintended consequences. Community-controlled and trusted local infrastructures may be as important as message design [5,19,21].

Strengths and limitations

This review integrates epidemiology, health literacy, evidence-informed decision-making, guideline development, knowledge translation, risk communication, community engagement, and implementation in one pathway. Including institutional guidance captured operational practices that journal literature may omit. However, this was an English-language review using PubMed and targeted repositories, without exhaustive multi-database searching, duplicate screening, or formal critical appraisal. Only a subset of sources explicitly used health-literacy terminology; the synthesis also interpreted adjacent evidence on clear communication, language access, trust, engagement, and feasibility through a health-literacy lens. This broadens conceptual integration but may merge distinct constructs. Source types were heterogeneous, and evidence from high-income and emergency settings predominated. The five-stage framework is an interpretive synthesis requiring prospective testing across diverse governance, cultural, and resource contexts.

CONCLUSION

Epidemiologic evidence provides the foundation for informed action, but health literacy shapes whether that evidence becomes accessible, understandable, credible, appraisable, and usable. Community action is more likely when institutions share responsibility for reducing information demands, communities shape interpretation and delivery, uncertainty and feasible alternatives are explicit, and communication is paired with accessible resources. Public health systems should manage evidence, health literacy, and action as a unified, accountable, and adaptive pathway, evaluating success through understanding, decisions, actions, equity, harms, and health outcomes.

DECLARATIONS

Ethics approval and consent to participate:

Not applicable; this review used publicly available sources.

Competing interests:

None declared for this study.

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REFERENCES

1. 1. World Health Organization. Evidence, policy, impact: WHO guide for evidence-informed decision-making. Geneva: World Health Organization; 2022. ISBN 978-92-4-003987-2.
2. 2. World Health Organization. Using qualitative research to strengthen guideline development. Geneva: World Health Organization; 2019.
3. 3. Brunton G, Thomas J, O'Mara-Eves A, Jamal F, Oliver S, Kavanagh J. Narratives of community engagement: a systematic review-derived conceptual framework for public health interventions. BMC Public Health. 2017;17:944. doi:10.1186/s12889-017-4958-4.
4. 4. Riccardi MT, Pettinicchio V, Di Pumpo M, et al. Community-based participatory research to engage disadvantaged communities: levels of engagement reached and how to increase it. A systematic review. Health Policy. 2023;137:104905. doi:10.1016/j.healthpol.2023.104905.
5. 5. O'Mara-Eves A, Brunton G, McDaid D, et al. Community engagement to reduce inequalities in health: a systematic review, meta-analysis and economic analysis. Public Health Res. 2013;1(4). doi:10.3310/phr01040.
6. 6. Peters MDJ, Marnie C, Tricco AC, et al. Updated methodological guidance for the conduct of scoping reviews. JBI Evid Synth. 2020;18(10):2119–2126. doi:10.11124/JBIES-20-00167.
7. 7. Tricco AC, Lillie E, Zarin W, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): checklist and explanation. Ann Intern Med. 2018;169(7):467–473. doi:10.7326/M18-0850.
8. 8. World Health Organization, United Nations Children's Fund, International Federation of Red Cross and Red Crescent Societies. Defining community protection: a core concept for strengthening the global architecture for health emergency preparedness, response and resilience. Geneva: World Health Organization; 2024. ISBN 978-92-4-009613-4.
9. 9. Kolis J, Brookmeyer K, Chuvileva Y, et al. Infodemics and vaccine confidence: protocol for social listening and insight generation to inform action. JMIR Public Health Surveill. 2024;10:e51909. doi:10.2196/51909.
10. 10. Kerr JR, Schneider CR, Recchia G, et al. Negative consequences of failing to communicate uncertainties during a

pandemic: an online randomised controlled trial on the effects of communicating statistical and model uncertainty about COVID-19. BMJ Open. 2023;13:e065334. doi:10.1136/bmjopen-2022-065334.

11. 11. Selva A, Sanabria AJ, Pequeño S, et al. Incorporating patients' views in guideline development: a systematic review of guidance documents. J Clin Epidemiol. 2017;88:102–112. doi:10.1016/j.jclinepi.2017.05.018.
12. 12. Zhao N, Koch-Weser S, Lischko A, Chung M. Knowledge translation strategies designed for public health decision-making settings: a scoping review. Int J Public Health. 2020;65(9):1571–1580. doi:10.1007/s00038-020-01506-z.
13. 13. Robinson MN, Tansil KA, Elder RW, et al. Mass media health communication campaigns combined with health-related product distribution: a Community Guide systematic review. Am J Prev Med. 2014;47(3):360–371. doi:10.1016/j.amepre.2014.05.034.
14. 14. Cyril S, Smith BJ, Possamai-Inesedy A, Renzaho AMN. Exploring the role of community engagement in improving the health of disadvantaged populations: a systematic review. Glob Health Action. 2015;8:29842. doi:10.3402/gha.v8.29842.
15. 15. Montoya-Sanabria SM, Hernández-Sandoval YT, Cáceres-Maldonado SA, et al. Community-based knowledge translation strategies for maternal, neonatal, and perinatal outcomes: a systematic review of quantitative and qualitative data. Int J Public Health. 2023;68:1605239. doi:10.3389/ijph.2023.1605239.
16. 16. World Health Organization. Risk communication and community engagement [Internet]. Geneva: World Health Organization; [cited 2025 Aug 5]. Available from: https://www.who.int/emergencies/risk-communications
17. 17. Centers for Disease Control and Prevention. The CDC Clear Communication Index [Internet]. Atlanta: CDC; [cited 2025 Aug 5]. Available from: https://www.cdc.gov/ccindex/
18. 18. Sørensen K, Van den Broucke S, Fullam J, et al. Health literacy and public health: a systematic review and integration of definitions and models. BMC Public Health. 2012;12:80. doi:10.1186/1471-2458-12-80.
19. 19. Haldane V, Chuah FLH, Srivastava A, et al. Community participation in health services development, implementation, and evaluation: a systematic review of empowerment, health, community, and process outcomes. PLoS One. 2019;14(5):e0216112. doi:10.1371/journal.pone.0216112.
20. 20. Herrera-Espejel PS, Rach S. The use of machine translation for outreach and health communication in epidemiology and public health: a scoping review. JMIR Public Health Surveill. 2023;9:e46814. doi:10.2196/46814.
21. 21. Pedersen JF, Egilstrød B, Overgaard C, Petersen KS. Public involvement in the planning, development and implementation of community health services: a scoping review. Health Soc Care Community. 2022;30(3):809–835. doi:10.1111/hsc.13528.
22. 22. World Health Organization. Communicating risk in public health emergencies: a WHO guideline for emergency risk communication policy and practice. Geneva: World Health Organization; 2017. ISBN 978-92-4-155020-8.