The AMR Burden Score eDelphi: Expert and Public Consensus to Standardise AMR Monitoring and Improve Patient Safety

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Background: Antimicrobial resistance (AMR) poses a significant threat to patient safety, yet current hospital AMR monitoring lacks a standardised, clinically meaningful metric to guide stewardship and reduce harm. Without a unified measure, hospitals face challenges in comparing AMR trends, identifying high-risk settings, and addressing inequities in outcomes across patient groups. To address this, we are developing the AMR Burden Score—a composite index designed to capture and communicate the burden of AMR in healthcare settings. Initial development has identified key components such as resistance prevalence, AMR-attributable mortality, and stewardship effectiveness, but expert and public consensus is needed to refine and validate the score.

Objectives: - To achieve expert consensus on the structure, definitions, and clinical applicability of the AMR Burden Score using a Delphi process
- To explore how the AMR Burden Score can support safer antimicrobial use, reduce resistance-related harm, and promote equity across patient populations
- To incorporate patient and public perspectives to ensure the score is relevant, understandable, and aligned with real-world concerns

Methods: This research follows a multi-round eDelphi methodology involving diverse AMR experts (including clinicians, microbiologists, public health professionals, policymakers, and patient safety specialists) across healthcare sectors. Participants will evaluate proposed components, definitions, and weighting systems for the AMR Burden Score. Consensus thresholds are set at ≥75% agreement. A public involvement workshop, held on 6th February 2025, will ensure that patient and public views inform the design, terminology, and potential implementation of the score, supporting accessibility and transparency. Consideration will be given to how the score addresses inequities, including variation in AMR burden and healthcare-associated risks across different populations.

Results (Preliminary): Early stakeholder engagement has identified three core domains for the AMR Burden Score: 1) AMR prevalence rates; 2) AMR-attributable mortality and morbidity; 3) Quality of antimicrobial stewardship processes. Feedback highlights the need for clear, accessible reporting to enable benchmarking, system-wide learning, and targeted safety improvements. Final rounds of the Delphi are underway, with validation planned to ensure applicability across diverse healthcare contexts.

Conclusion: The AMR Burden Score offers a standardised, consensus-driven approach to assess AMR impact in hospitals, with the potential to enhance antimicrobial stewardship, support equitable patient safety improvements, and facilitate national and international benchmarking.

The AMR Burden Score Modified eDelphi: Expert and Public Consensus to Standardise AMR Monitoring and Improve Patient Safety

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Background

- Antimicrobial Resistance (AMR) is a critical threat to patient safety, contributing to mortality, prolonged hospital stays, and treatment failure.
- Hospitals currently lack a standardised, clinically meaningful metric to track AMR burden.
- Without such a score, it's difficult to:
  - Compare resistance trends across settings
  - Identify high-risk wards or populations
  - Address outcome inequities
- We are developing the **AMR Burden Score**, a composite index to quantify AMR impact in hospitals.
- Early work identified components such as:
  - Resistance prevalence
  - AMR-attributable morbidity/mortality
  - Stewardship quality
- Expert and public consensus is essential to finalise the score.

Aims:

•To achieve expert consensus on score structure, definitions and clinical relevance

•To explore the score's role in supporting safer antimicrobial use, reducing resistance-related harm, and promoting equity in patient outcomes

•To incorporate public and patient views to ensure relevance and clarity, and support transparency and accessibility

Methods

•**Modified eDelphi process,** following scoping review, involving:
- Clinicians, microbiologists, public health professionals, policymakers, and patient safety experts

•Participants assess score components, weightings and definitions

•**Consensus threshold:** ≥75% agreement

•**Public workshop:**
- Informed terminology, layout, and accessibility features of score to improve inclusivity and equity for patient groups

•**Equity lens applied throughout** to account for:
- Demographic variations
- Differential AMR burden across populations

Key Patient Safety Insights

•A consensus-driven AMR Burden Score provides a unified, actionable framework for hospitals to track AMR and reduce resistance-related harm.

•Incorporating patient and public perspectives ensures the score is understandable, equitable, and designed for real-world safety impact.

Preliminary Results

•**Stakeholder feedback highlights the need for:**
- Simple, transparent reporting
- Benchmarking capability across hospitals
- Use in system-wide quality improvement

•**eDelphi process ongoing:**
- Final refinement of score items
- Planned validation across diverse hospital contexts

Domain (REMAPS)	Weight	Purpose
Resistance (R)	25%	MDR organism prevalence (MRSA, ESBL, CRE etc.)
Effectiveness (E)	25%	Mortality, Length of Stay, Time to effective therapy
Monitoring (M)	20%	Prescribing quality (Spectrum Coverage, AWaRe adherence)
Adoption & Usability (A)	10%	Clinician use of AMS tools (e.g., CDSS logins)
Processes (P)	10%	AMS intervention uptake, education
Systems (S)	10%	Economic/resource burden of AMR

Discussion The AMR Burden Score fills a key gap by standardising how hospitals measure AMR impact.

•Combines resistance rates, outcomes, and stewardship quality for a comprehensive view.

•Designed to be simple, interpretable, and actionable for real-world use.

•Early expert consensus confirms relevance of core domains.

•Stakeholders stressed clear communication and adaptability across settings.

•Public input improved accessibility, language, and equity focus.

•Score may highlight disparities and guide fairer safety interventions.

Conclusion

•The AMR Burden Score provides a standardised, consensus-based method to quantify and communicate AMR burden.

•It could:
- Enhance stewardship and monitoring
- Improve safety outcomes
- Enable equitable benchmarking at local, national, and global levels

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