FROM KNOWLEDGE TO ACTION APPLICATION

Title: Developing a Visualization Framework to Translate Clinical Research into Actionable Decisions.

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Category: From Science To Society

Problem (max. 50 words):

Healthcare decision-makers face increasing difficulty interpreting complex clinical research findings due to fragmented data and traditional visualization tools that are not intuitive for non-experts. This results in a gap between scientific knowledge production and its practical application in policy and clinical settings.

Unmet Need (max. 50 words):

Current methods (e.g., forest plots, survival curves) often fail to communicate key aspects such as efficacy, safety, and cost in an integrated, accessible format. A standardized, easily interpretable model is needed to support evidence-based decisions at all levels of the healthcare system.

Project Description (max. 200 words):

This project aims to develop an intuitive visual framework to improve how clinical research findings are translated into practical healthcare decisions. Clinical outcomes are inherently complex, requiring the consideration of efficacy, safety, and cost. Existing visualization tools often fail to convey these dimensions in a way that is easily understandable to non-specialist decision-makers such as policymakers, hospital administrators, and frontline clinicians.

Through a structured, multi-stakeholder Delphi, we are evaluating multiple candidate models for visualizing clinical implications. These include concentric diagrams, matrix layouts, and hybrid graphical systems. All models will be assessed based on their clarity, usability, and effectiveness in supporting evidence-based decisions. One leading candidate—the Ring Diagram Model—uses color-coded concentric rings to display outcomes in a compact and accessible format. However, the final model selection will depend on expert consensus, stakeholder feedback, and real-world usability testing. The chosen model will support structured implication sections in research publications and policy briefs, bridging the gap between data generation and decision-making. A freely available online generator will promote adoption and scalability across healthcare systems. This project represents a critical step toward simplifying science communication and improving public health outcomes.

Hypothesis (25 words):

A color-coded ring diagram can significantly improve the translation of complex clinical findings into actionable decisions by simplifying interpretation across key outcome domains.

Implication for Practice (50 words):

The Ring Diagram enables practitioners and policymakers to quickly evaluate the efficacy, safety, and cost of interventions, supporting faster and more informed decisions. It is particularly useful in time-sensitive or resource-constrained settings, helping to prioritize high-impact treatments.

Implication for Research (50 words):

By highlighting knowledge gaps through gray or mixed-color segments, the model directs future research priorities. It also opens new avenues for investigating visual communication in clinical science and shared decision-making frameworks.