Addressing Gaps in Monitoring and Evaluation of One Health Mechanisms: Enhancing the Effectiveness of Infectious Diseases Control Initiatives

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Background

❖ The One Health approach links human, animal, and environmental health, addressing global health challenges like zoonotic outbreaks (e.g., COVID-19, Ebola) (*WHO, 2024*).

❖ Over 60% of known infectious diseases and 75% of emerging ones are zoonotic, emphasizing cross-sector collaboration (*WHO*, 2024).

❖ Effective implementation and monitoring of One Health initiatives are crucial, yet challenges persist, including a lack of standardization, data integration, and long-term assessments (Gibbs, 2014).

❖ Our study identifies gaps in monitoring and evaluation of One Health mechanisms, focusing on infectious diseases, and proposes strategies to improve effectiveness.

Specific Aims:

❖ What gaps exist in the monitoring and evaluation of One Health mechanisms for infectious diseases?
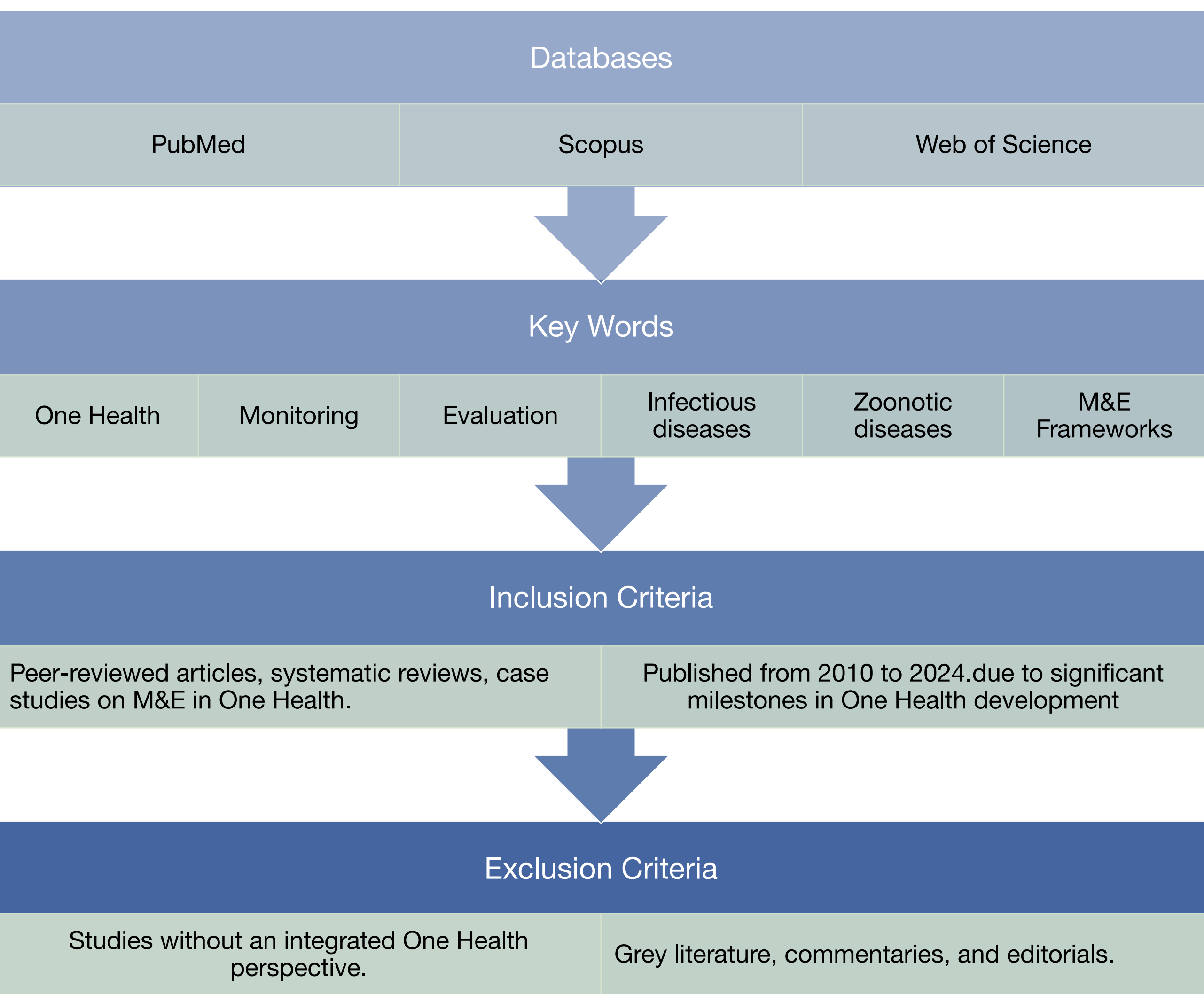❖ How can these gaps be addressed to improve future initiatives?

Methods

Figure 1: The study selection process, from databases searched (e.g., PubMed) to keywords used, then filtering by inclusion (relevance, language) and exclusion criteria (duplicates, off-topic)
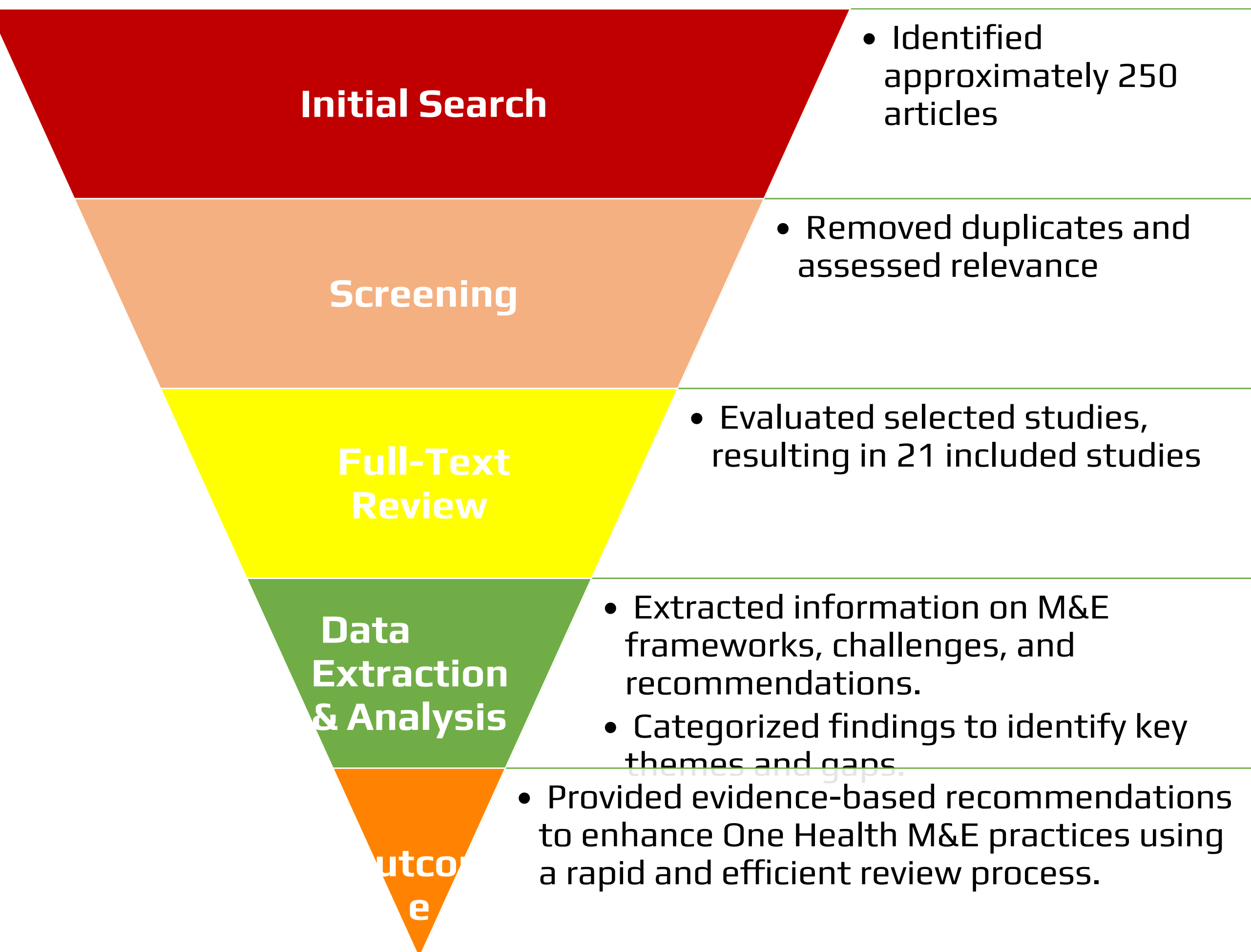

Figure 2: An inverted triangle representing the step-by-step process of article selection and analysis

Initial Search — • Identified approximately 250 articles

Screening — • Removed duplicates and assessed relevance

Full-Text Review — • Evaluated selected studies, resulting in 21 included studies

Data Extraction & Analysis — • Extracted information on M&E frameworks, challenges, and recommendations. • Categorized findings to identify key themes and gaps

Outcome — • Provided evidence-based recommendations to enhance One Health M&E practices using a rapid and efficient review process.

Findings

Monitoring
• Collect and track data from human, animal, and environmental health using surveillance and early-warning systems

Evaluation
• Assess the effectiveness of interventions, such as disease reduction and sector collaboration

Accountability
• Ensure transparency by sharing findings with stakeholders and implementing feedback systems

Learning
• Use insights from monitoring and evaluation to adapt strategies and improve future responses

Figure 3: Outlines how The MEAL Framework can be applied in One Health mechanisms for infectious disease control.
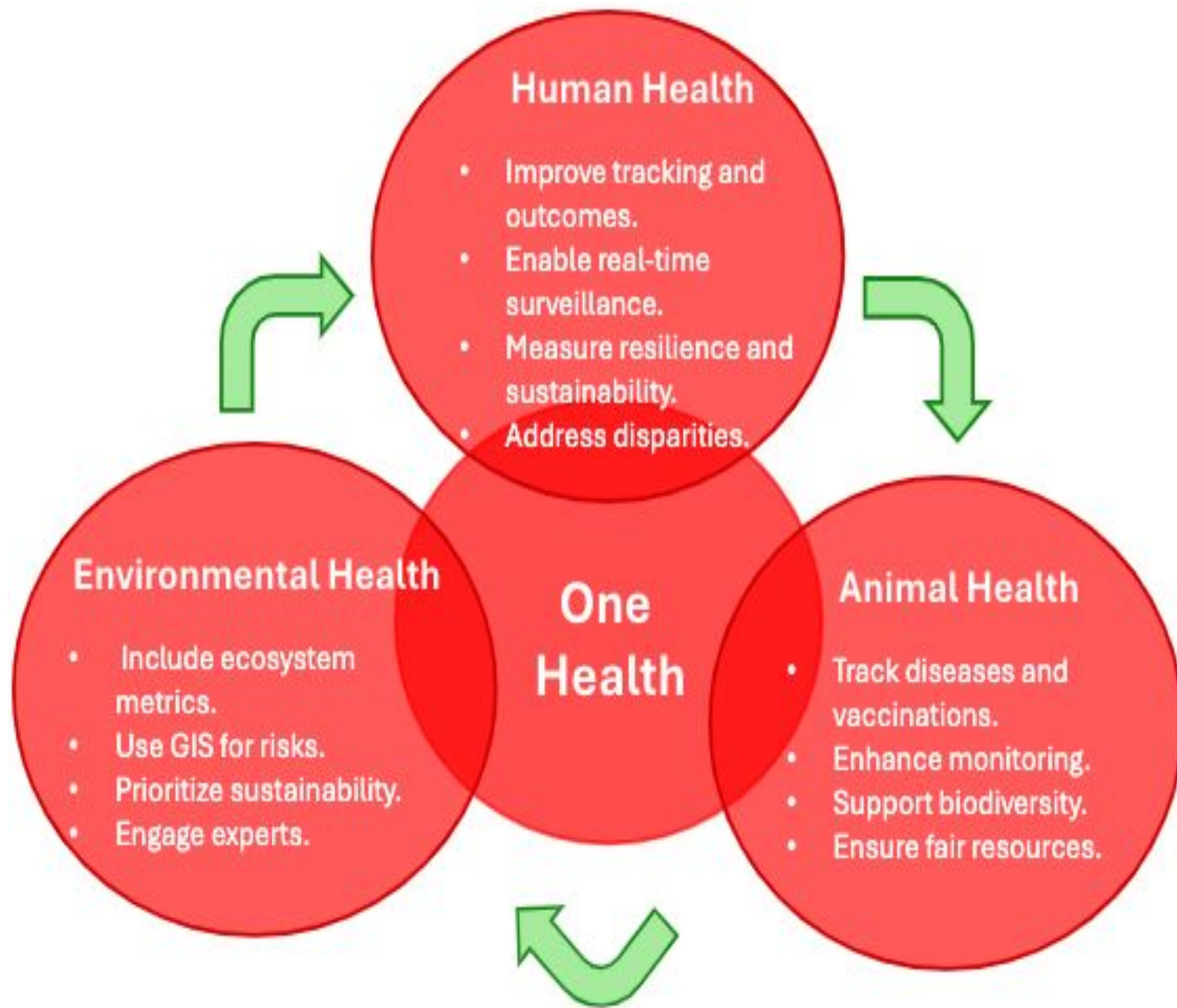

Figure 4: An illustration of ONE HEALTH - the interconnectedness of human, animal, and environmental health

• Standardized frameworks essential for cohesive data collection and policy integration (Yopa et al., 2023).

• Unified global strategy can scale successful interventions and improve One Health outcomes (McNeil, 2022).

• Challenges in M&E include inconsistent application, data fragmentation, and lack of standardized impact metrics (McNeil, 2022).

• Limited cross-sector data integration delays outbreak detection; human health is often prioritized over environmental and animal health (McNeil, 2022).

• Recommendations: develop standardized M&E frameworks, improve digital data integration (e.g., GIS), invest in capacity-building, and establish cross-sectoral task forces (Scott et al., 2023).

• MEAL framework supports monitoring (surveillance tools), evaluation (effectiveness metrics), accountability (transparent decision-making), and learning (adaptive response strategies) (Enenkel et al., 2022).
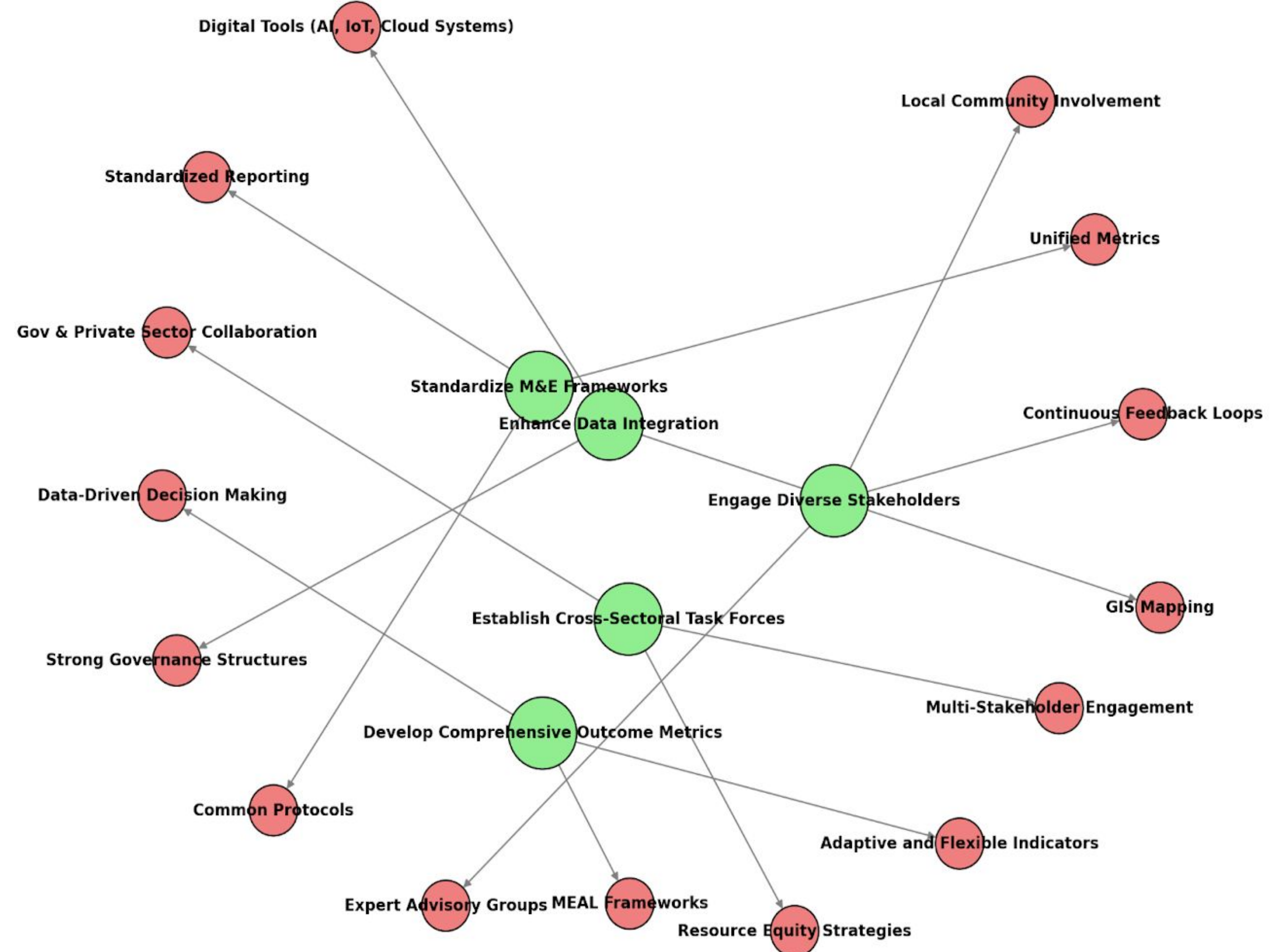
Findings

Figure 5: The diagram shows a network with five main recommendations for the improvement of One Health efforts for infectious diseases at the center. Each main recommendation branches out to several sub-recommendations, illustrating how the sub-recommendations support the main ones.

Conclusions

Recommendations for Improvement
1. Standardize M&E frameworks with unified metrics and protocols.
2. Enhance data integration using digital tools, GIS, and strong governance structures.
3. Develop comprehensive and adaptive outcome metrics, incorporating MEAL frameworks.
4. Establish cross-sectoral task forces for equitable resource distribution.
5. Engage diverse stakeholders, including local communities and environmental experts.

Future Directions
• Targeted interventions to address gaps in data integration and standardized metrics.
• Inclusive approaches recognizing the interdependence of human, animal, and environmental health.
• Ongoing research and innovation in M&E practices for adaptability and effectiveness.
• Build resilience and sustainable health systems by leveraging existing frameworks.

Funding & Contact Information

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