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Policy Brief

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Digital Solutions for Reproductive, Maternal, Neontal, and Child Health

EXECUTIVE SUMMARY

The Eastern Mediterranean Region is experiencing significant shifts in Reproductive, Maternal, Neonatal, and Child Health (RMNCH) due to the profound influence of digital health innovations. Yet, the promise of digital health in RMNCH also comes with its set of challenges, particularly in the domains of human rights and privacy.

This policy brief emphasizes the vast potential of digital health to redefine RMNCH within the EMR. It offers an in-depth analysis of regional digital health endeavors and delves into the associated challenges, especially those related to privacy and the broader implications of human rights. Addressing these concerns

holistically is essential for the EMR to harness digital health for comprehensive and rights aware RMNCH care effectively.

Recommendations in the brief focus on strengthening the region's digital infrastructure, developing culturally and linguistically appropriate

Approach

This policy brief draws on insights from a webinar titled "Digital Health for RMCH," hosted by EMPHNET) on August 15, 2023. The session was moderated by the Director of the Center of Excellence for Applied Epidemiology at EMPHNET, Prof. Yousef Khader, and featured five expert panelists: Dr. Maysa Nemer, Director of the Institute of Community and Public Health at Birzeit University; Prof. Ziad El-Khatib, Associate Professor in Global Health at Karolinska Institute; Prof. Mohammad Alyahya, Professor at the Department of Health Management and Policy in the Faculty of Medicine at Jordan University of Science and Technology (JUST); Dr. Mirwais Amiri, Research Specialist at EMPHNET; and Ms. Sarah Simms, Policy Officer at Privacy International. These experts discussed the current state of digital health initiatives in RMCH specific projects, and addressed the challenges and opportunities associated with the integration of digital technologies in this field. Their collective insights, experiences, and recommendations provide the foundation for the policy recommendations presented in this brief.

digital health tools and ensuring compatibility with existing health systems. Furthermore, the importance of fostering public-private partnerships, emphasizing public health goals, and providing continuous training to healthcare professionals on digital tools is highlighted. It is also recommended to integrate feedback mechanisms for the continuous improvement of digital strategies.

Given the transformative potential of digital health for RMNCH in the EMR, it is imperative to heed these recommendations. Adopting these strategies will ensure that the EMR not only enhances its RMNCH care but also emerges as a beacon of innovation, rights conservation, and integrated healthcare for the rest of the world to observe and emulate.

INTRODUCTION

Reproductive, Maternal, Neonatal, and Child Health (RMNCH) is at the cornerstone of any healthy society. The Eastern Mediterranean Region (EMR) has made notable strides in RMNCH outcomes over the past decades; however, gaps remain, many of which are worsened by socio-political upheavals, infrastructural deficiencies, and disparities in health care access. As the world becomes increasingly digitalized, the potential of digital health to revolutionize RMNCH in the EMR is undeniable.

Digital health which involves harnessing the power of technology, offers innovative solutions to address persistent challenges in RMNCH, from improving access to vital health information and services to empowering health professionals with timely, data-driven insights. As the global community acknowledges the transformative capabilities of digital health, it is imperative for the EMR to accelerate its embrace of this trend.

By effectively scaling up digital health initiatives tailored for RMNCH, the EMR has a unique opportunity to surpass developmental gaps, provide enhanced care to its populations, and set a precedent for other regions to emulate. This policy brief delves into the rationale behind this urgent need, illustrating the potential benefits and providing recommendations to guide regional efforts.

This policy brief provides an analysis of the current state of digital health for RMNCH, and highlights key challenges, opportunities, and recommendations for policymakers, healthcare providers, and other stakeholders involved in the design, implementation, and evaluation of digital health initiatives in low- and middle-income countries.

REGIONAL EXAMPLES: DIGITAL HEALTH INNOVATIONS IN RMNCH

The Eastern Mediterranean Region is experiencing a wave of innovative digital health approaches, particularly within the sphere of RMNCH. Insights from the 33rd webinar within the WEBi series hosted by EMPHNET provide a snapshot of these endeavors.

In Palestine, the journey of digital health has been marked by significant developments. The emergence of health information systems, health surveillance, and applications such as Nabdh Al Hayat and e-MCH signify the nation's commitment to integrating technology for better health outcomes. Adding to these strides is the creation of a new maternity assessment tool, which serves as a benchmark in evaluating digital health advancements.

The realm of immunization has not been left behind. The Children Immunization App (CIMA) is a testament to the potential of digital solutions in addressing critical public health challenges. With its multifaceted approach that includes combating misinformation and facilitating real-

time immunization monitoring, CIMA offers invaluable lessons for similar health efforts across the region.

Another notable initiative is the Stillbirths and Neonatal Deaths Surveillance System. By leveraging detailed data and advanced reporting techniques, this system is set to transform maternal and neonatal health outcomes, emphasizing the essential role of precision in health data management.

Furthermore, Data harmonization is also coming to the fore, with the *harmonized* Reproductive Health Registry (*h*RHR) initiative underlining the significance of integrated health data. With a successful pilot in Mafraq, this initiative exemplifies the benefits of unified health data platforms, paving the way for improved decision-making in RMNCH.

In essence, these regional endeavors not only spotlight the innovative drive of the Eastern Mediterranean but also offer valuable insights for nations aiming to enhance their RMNCH services through digital health.

IMPLEMENTATION CONSIDERATIONS FOR DIGITAL HEALTH INITIATIVES

The advancement of digital health, propelled by artificial intelligence and global connectivity, offers transformative solutions such as enhanced healthcare access, improved diagnostics, and individualized treatments. Yet, it is essential to concurrently address associated concerns, particularly regarding privacy, security, and data protection.

The rapid adoption of these technologies, while beneficial, exposes vulnerabilities in safeguarding the sanctity of personal data.

As technology becomes more integral to healthcare, new challenges arise encompassing dignity, potential discrimination, and equality. The tendency of certain entities, be it governmental or industrial, to prioritize surveillance and revenue generation overshadows the potential risks involved.

Consider the rise of reproductive health applications. Their utility is undeniable, yet some compromise user data, sharing with third parties often without transparent consent—clearly highlighting the looming privacy concerns.

Therefore, the implementation of digital health initiatives mandates an approach anchored in human rights, emphasizing principles such as participation, non-discrimination, and transparency. Such a strategy will necessitate thorough risk assessments to establish solutions that fundamentally respect individual rights.

The ongoing evolution of digital health requires rigorous oversight concerning privacy and rights. From inception to deployment, digital health endeavors should undergo comprehensive human rights evaluations. Instituting robust regulatory frameworks, maintaining accountability, and enhancing the collective understanding of these digital solutions are imperative for their responsible integration into healthcare.

POLICY RECOMMENDATIONS

Infrastructure and Accessibility:
Invest in strengthening digital infrastructure to ensure consistent and high-speed internet access, targeting both urban centers and underserved rural areas. The success of scaling up hinges on foundational tech infrastructure.

Tailored Local Solutions:
Develop digital health tools that resonate with the cultural, linguistic, and socio-economic dynamics of the EMR. Engage local communities in the design process to ensure relevancy and user-friendly interfaces.

Interoperability and Integration:
Foster the creation of digital health platforms that integrate seamlessly with existing health systems. Standardized data protocols are essential for efficient and safe data exchange, facilitating collaborative health initiatives.

Public-Private Synergy:
Leverage public-private partnerships to tap into the private sector's expertise, resources, and innovative capabilities, while ensuring that public health objectives remain paramount.

Capacity Building and Training:
Prioritize training programs that empower healthcare professionals to effectively utilize digital tools. Establish collaborations with educational institutions to integrate digital health concepts into medical and healthcare curriculums.

Monitoring, Evaluation, and Feedback Loops
Implement a robust monitoring and evaluation framework to assess the efficacy and impact of digital initiatives. Feedback mechanisms should be embedded, encouraging stakeholders to offer insights, ensuring the continual refinement of digital health strategies.

By addressing these core areas, the EMR can optimally leverage digital health initiatives, driving improved healthcare outcomes and accessibility for its populace.

REFERENCES

Lowery, C. (2020). What is digital health and what do I need to know about it?. Obstetrics and Gynecology Clinics, 47(2), 215-225.

Khader, Y., Alyahya, M., El-Khatib, Z., Batieha, A., Al-Sheyab, N., & Shattnawi, K. (2021). The Jordan stillbirth and neonatal mortality surveillance (JSANDS) system: evaluation study. Journal of Medical Internet Research, 23(7), e29143.

Nemer, M., Khader, Y. S., Alyahya, M. S., Pirlot de Corbion, A., Sahay, S., & Abu-Rmeileh, N. M. (2023). Personal data governance and privacy in digital reproductive, maternal, newborn, and child health initiatives in Palestine and Jordan: a mapping exercise. Frontiers in Digital Health, 5, 1165692.

El-Halabi, S., Khader, Y. S., Khdeir, M. A., Hanson, C., Alfvén, T., & El-Khatib, Z. (2023). Children Immunization App (CIMA): A Non-randomized Controlled Trial Among Syrian Refugees in Zaatari Camp, Jordan. Journal of Prevention, 44(2), 239-252.

EMPHNET. Jordan Ministry of Health and EMPHNET Collaborate to Enhance Maternal and Child Health in Mafraq. https://www.emphnet.net, https://www.emphnet.net/en/resources/news/2018/jordan-ministry-of-health-and-emphnet-collaborate-to-enhance-maternal-and-child-health-in-mafraq-1/ (2018, accessed 27 August 2023).

Alyahya, M. S., Abu-Rmeileh, N. M., Khader, Y. S., Nemer, M., Al-Sheyab, N. A., Corbion, A. P. D., ... & Sahay, S. (2022). Maturity Level of Digital Reproductive, Maternal, Newborn, and Child Health Initiatives in Jordan and Palestine. Methods of Information in Medicine, 61(05/06), 139-154.

EMPHNET. EMPHNET Hosts its 33rd Webinar in the EMPHNET WEBi Series. Published 2023. (2018, accessed 27 August 2023) https://emphnet.net/en/resources/news/2023/emphnet-hosts-its-33rd-webinar-in-the-emphnet-webi-series/