PACIFIC HEADS OF HEALTH
Réunion des directeurs de la santé du Pacifique

SPC/PHD/HOH15

Working paper 15.0
ORIGINAL: ENGLISH

15th PACIFIC HEADS OF HEALTH MEETING,
15-17 April 2024, Apia Samoa

HEALTHCARE WASTE MANAGEMENT IN THE PACIFIC: NAVIGATING TOWARDS A SUSTAINABLE FUTURE

(Paper presented by Dr Joshua Sam, Hazardous Waste Management Adviser, SPREP)

INTRODUCTION

1. The Pacific region faces unique healthcare waste management challenges, largely due to its geographical disposition, consisting of scattered island nations with limited landmass and resources. These challenges are compounded by the lack of infrastructure and resources necessary for effective waste management systems. Many islands experience difficulties in segregating, storing, and disposing of healthcare waste properly, leading to increased risks of infection, environmental contamination, and the spread of diseases. The situation is further exacerbated by the impact of climate change and natural disasters, which strain already limited waste management systems and disrupt regular healthcare services. Additionally, the capacity for local governance and regulatory frameworks to enforce waste management standards is often limited, posing significant hurdles to improving healthcare waste management practices across the Pacific.

2. Sustainable healthcare waste management practices are vital for protecting the environment and public health in the Pacific. Proper waste management reduces the risk of pollution, preserves valuable natural resources, and minimizes the ecological footprint of healthcare activities. From a public health perspective, correctly disposing of healthcare waste is crucial in preventing the spread of infections and diseases, particularly in communities with limited access to healthcare services. Sustainable practices, such as waste reduction, recycling, and safe disposal methods, can significantly mitigate the adverse effects of healthcare waste on the environment and public health. Moreover, investing in sustainable waste management systems strengthens resilience against climate change impacts, ensuring that healthcare systems can continue to operate effectively even in the face of natural disasters. This commitment to sustainability not only protects the environment and public health but also supports the overall well-being and development of Pacific island nations.

CURRENT SITUATION

3. Data on healthcare waste generation in Pacific island is scarce, highlighting a gap in systematic waste management monitoring[1]. While precise data varies across different island nations, it's estimated that the healthcare sector in these areas produces several hundred kilograms of waste per bed per year. This waste encompasses a broad spectrum of materials, including general non-hazardous waste, infectious and pathological wastes, sharps, pharmaceuticals, and chemical waste. The variance in waste types underscores the complexity of management and disposal required. Infectious waste, which poses a direct threat to health, constitutes a significant portion of the total waste generated by healthcare facilities. The lack of comprehensive data collection and reporting mechanisms in the region further complicates efforts to address these waste management challenges effectively.

4. The Pacific region faces numerous specific challenges in healthcare waste management. One of the most pressing issues is the inadequate segregation of waste at the point of generation, which leads to the mixing of hazardous and non-hazardous waste, thereby complicating disposal processes and increasing risks. Moreover, the lack of proper disposal facilities is a critical problem; many islands do not have access to incinerators or autoclaves, leading to reliance on open burning or landfilling, which are neither safe nor sustainable[2]. Additionally, there is a significant gap in awareness and training among healthcare workers regarding best practices for waste management. This lack of knowledge contributes to improper disposal methods, increasing the risk of infection and environmental contamination. These challenges are exacerbated by limited financial resources and technical capacity, hindering the development and implementation of effective waste management strategies[3].

5. The consequences of improper healthcare waste management in the Pacific are profound, affecting both the environment and public health. Pollution resulting from uncontrolled waste disposal can contaminate soil, water sources, and air, posing severe risks to human health and the environment. Specifically, the improper disposal of hazardous waste can lead to the transmission of diseases such as hepatitis and HIV through the mishandling of sharps and exposure to infectious agents[4]. Moreover, the environmental impact extends to harm to marine ecosystems, a critical concern for the Pacific region, where many communities rely on marine resources for their livelihoods and cultural practices. Chemical and pharmaceutical wastes can enter waterways, leading to the bioaccumulation of toxic substances in marine life, disrupting ecosystems, and potentially entering the human food chain. These environmental and health impacts underscore the urgent need for improved healthcare waste management practices in the Pacific region.

---

[1] World Health Organization, 2015. Status of health-care waste management in selected countries of the Western Pacific Region.
[2] Mataki, M., 2011. *A critical assessment of the paradigms for solid waste management in Pacific island countries* (Doctoral dissertation, Murdoch University).
[3] Richards, E. and Haynes, D., 2014. Solid waste management in Pacific Island countries and territories. *Municipal solid waste management in Asia and the Pacific Islands: challenges and strategic solutions*, pp.255-279.
[4] Secretariat of the Pacific Regional Environment Programme (2012) Draft pacific health care waste: a regional strategy and action plan 2013–2015.

FUTURE VISION

6. The Secretariat of the Pacific Regional Environment Programme (SPREP) envisions a future where sustainable healthcare waste management systems significantly minimize environmental impact and protect public health across the Pacific islands. This vision is encapsulated in the "Cleaner Pacific 2025," the region's comprehensive waste management strategy that aims to address the unique challenges faced by Pacific island countries and territories. The Cleaner Pacific 2025[5] strategy outlines a holistic approach to waste management, emphasizing the importance of reducing waste generation at the source, promoting the safe and effective segregation, treatment, and disposal of healthcare waste, and enhancing capacity building and awareness among healthcare providers and the community. The strategy advocates for the integration of traditional knowledge with modern technologies to create resilient waste management systems that are adaptable to the Pacific's diverse cultural and environmental landscapes. By focusing on innovation, collaboration, and adherence to best practices, SPREP seeks to establish a framework that ensures healthcare waste is managed in a manner that is both environmentally sustainable and conducive to the health and well-being of the Pacific populations.

7. SPREP's vision for sustainable healthcare waste management aligns closely with the broader objectives of the Blue Pacific 2050 strategy[6] and the United Nations Sustainable Development Goals (SDGs), particularly SDG 3 (Good Health and Well-being), SDG 6 (Clean Water and Sanitation), SDG 12 (Responsible Consumption and Production), and SDG 14 (Life Below Water)[7]. The Blue Pacific 2050 strategy, which emphasizes the importance of sustainable development, environmental protection, and regional solidarity in addressing the Pacific's unique challenges, provides a framework for integrating healthcare waste management into the larger context of ocean health, climate change resilience, and sustainable economic development.

8. This alignment is evident in the shared emphasis on protecting marine ecosystems from pollution, reducing the release of hazardous substances, and promoting public health and well-being. By adhering to these strategic priorities, the vision for healthcare waste management in the Pacific contributes to mitigating the impacts of climate change through reduced greenhouse gas emissions from waste management processes, enhanced resilience of healthcare systems to climate-related shocks, and protection of water resources. The integration of sustainable healthcare waste management practices supports the region's commitment to the UN SDGs by fostering a healthier environment, reducing inequalities in access to healthcare and sanitation, and ensuring sustainable use of resources, thus contributing to a more sustainable, resilient, and healthy Pacific.

[5] Secretariat of the Pacific Regional Environment Programme (2016) Pacific regional waste and pollution management strategy 2016–2025, SPREP
[6] Pacific Islands Forum (2023)2050 Strategy for the Blue Pacific Continent
[7] UN (2015) Sustainable development goals

EXAMPLES OF RECENT PROGRESS

9. In recent years, SPREP has made significant strides in advancing healthcare waste management across the Pacific through a variety of initiatives and investments. One notable effort is through the PacWaste Plus Programme[8], which focuses on improving waste management practices and infrastructure across the region. A key component of this project has been the investment in healthcare waste incineration technology, providing a sustainable and efficient solution for the disposal of hazardous waste. This technology not only reduces the volume of waste but also minimizes the risk of infection and environmental contamination, marking a significant advancement in healthcare waste management in the Pacific.

10. Additionally, SPREP has placed a strong emphasis on capacity building and education, organizing extensive training programs for healthcare waste workers and hospital staff. These training sessions cover proper waste segregation, handling, and disposal practices, aiming to enhance the overall safety and efficiency of healthcare waste management. By empowering healthcare workers with the knowledge and tools they need, SPREP is ensuring that healthcare facilities across the Pacific are better equipped to manage waste in a manner that protects both public health and the environment.

11. Policy changes and government initiatives play a crucial role in driving progress in healthcare waste management. In Papua New Guinea (PNG), SPREP has been collaborating closely with the National Department of Health to develop the National Health Care Waste Management Strategy. This strategic framework aims to standardize and improve healthcare waste management practices across the country, addressing the unique challenges faced by different regions and facilities.

12. Furthermore, SPREP is working with provincial health authorities in PNG to develop facility-specific healthcare waste management plans. These plans are tailored to the needs and capacities of individual healthcare facilities, providing clear guidelines and strategies for improving waste management practices. By focusing on both national and local levels, these initiatives represent a comprehensive approach to enhancing healthcare waste management in PNG, setting a precedent for other Pacific nations to follow.

13. These efforts by SPREP and Pacific governments underscore a growing recognition of the importance of effective healthcare waste management. Through targeted investments, capacity building, and policy development, significant progress is being made towards creating more sustainable and health-protective waste management systems in the Pacific.

[8] https://pacwasteplus.org/

WHY ACTION IS NEEDED NOW

(i) Urgency of Environmental Protection

14. The Pacific region, home to some of the world's most unique and biodiverse ecosystems, faces an urgent need for environmental protection[9]. These ecosystems are not only vital for the cultural and economic livelihoods of Pacific communities but also play a critical role in global environmental health. Pollution and degradation from improper waste management, including healthcare waste, pose a significant threat to these pristine environments. Contaminants can leach into soil and waterways, affecting both terrestrial and marine life, and ultimately disrupt the delicate balance of these ecosystems. The urgency to protect these natural treasures from pollution is heightened by the increasing pressures of climate change, making the implementation of sustainable waste management practices a critical priority for the region. Immediate action is necessary to prevent irreversible damage and ensure the preservation of the Pacific's environmental heritage for future generations.

(ii) Public Health Considerations

15. Effective waste management is intrinsically linked to public health outcomes, particularly in the context of healthcare waste. Improper disposal methods can lead to the spread of infectious diseases, posing serious health risks to communities, especially those with limited access to healthcare services. The current COVID-19 pandemic has further highlighted the importance of robust healthcare waste management systems in preventing disease transmission[10]. By prioritizing sustainable waste management practices, the Pacific can significantly reduce the risk of infections, improve overall public health, and build resilience against future health crises. This underscores the necessity of immediate action to address healthcare waste management, ensuring a healthier future for all Pacific Islanders.

(iii) Opportunity for Leadership

16. The Pacific region stands at a critical juncture, with the opportunity to emerge as a global leader in sustainable healthcare waste management. By adopting innovative and culturally sensitive waste management solutions, the Pacific can demonstrate how small island developing states can overcome unique challenges and set a precedent for others. This leadership can inspire action and cooperation beyond the Pacific, showcasing the effectiveness of integrated, community-based approaches in achieving sustainable waste management and environmental protection. Embracing this opportunity for leadership not only positions the Pacific at the forefront of environmental and public health innovation but also contributes significantly to the global efforts towards achieving the United Nations Sustainable Development Goals. Now is the time for the Pacific to lead by example, catalyzing change and promoting sustainable practices that can be replicated worldwide.

---

[9] Jupiter, S., Mangubhai, S. and Kingsford, R.T., 2014. Conservation of biodiversity in the Pacific Islands of Oceania: challenges and opportunities. *Pacific Conservation Biology*, *20*(2), pp.206-220.

[10] Manupati, V.K., Ramkumar, M., Baba, V. and Agarwal, A., 2021. Selection of the best healthcare waste disposal techniques during and post COVID-19 pandemic era. *Journal of cleaner production*, *281*, p.125175.

RECOMMENDATIONS TO BE CONSIDERED BY PACIFIC HEADS OF HEALTH

(i) Policy and Regulation

17. We strongly advocate for the development and strict enforcement of comprehensive waste management policies and regulations across the Pacific region. These policies should be tailored to the unique challenges and needs of each island nation, ensuring they are both practical and enforceable. A regional framework can provide consistency and guidance, while allowing for local adaptations. This approach should prioritize the establishment of standards for healthcare waste segregation, handling, disposal, and treatment, alongside mechanisms for monitoring and evaluation to ensure compliance. Strengthening policy and regulation is fundamental to creating a sustainable and effective waste management system that protects both public health and the environment.

(ii) Capacity Building

18. Implement targeted training programs for healthcare workers and waste management staff, focusing on best practices for waste segregation, handling, and disposal. Capacity building is essential for ensuring that those on the front lines of healthcare waste management are equipped with the knowledge and skills necessary to perform their duties safely and effectively. Training should be ongoing and adapted to reflect the latest developments in waste management strategies and technologies, ensuring that staff remain competent in the face of evolving challenges.

(iii) Investment in Infrastructure

19. Significant investments in waste management infrastructure are critical to improving healthcare waste management across the Pacific. This includes the development of facilities for the safe disposal and treatment of waste, such as autoclaves, incinerators, and recycling plants, that are environmentally friendly and appropriate for the scale and needs of Pacific island communities. Infrastructure development should also consider improvements in transportation and storage facilities for waste, to prevent accumulation and reduce risks to public health and the environment.

(iv) Community Engagement and Education

20. Launch comprehensive community engagement and education initiatives to raise awareness about the importance of waste reduction and recycling. Encouraging community participation in sustainable waste management practices can significantly reduce the volume of waste generated and foster a culture of environmental stewardship. Education campaigns should highlight the impact of waste on health and the environment and promote simple, actionable steps that individuals and communities can take to contribute to waste management efforts.

(v) Research and Innovation

21. Support and fund research into new waste management technologies and practices that can be adapted to the Pacific context. Innovation in waste treatment and disposal methods is crucial for overcoming the unique challenges faced by the region. Research should focus on developing solutions that are not only effective and sustainable but also culturally appropriate and scalable. Encouraging collaboration between governments, academic institutions, and the private sector can accelerate the development and implementation of innovative waste management solutions.

CONCLUSION

22. In conclusion, the presentation has highlighted the critical challenges and opportunities within healthcare waste management in the Pacific. We have explored the unique environmental and public health considerations that necessitate urgent and effective action, emphasizing the role of policy and regulation, capacity building, infrastructure investment, community engagement, and research and innovation in driving progress.

23. The urgency of addressing these challenges cannot be overstated. The health of our communities and the preservation of our precious environmental resources depend on immediate and concerted action by the Pacific's Heads of Health. It is imperative that we move swiftly to implement comprehensive waste management strategies that are both sustainable and adapted to the unique needs of our region.

24. Despite the challenges ahead, there is a strong reason for optimism. The Pacific region is rich in resilience, ingenuity, and community spirit. By harnessing these strengths through collaboration, innovation, and leadership, we are well-positioned to overcome the obstacles facing us. Together, we can create a healthier, more sustainable future for all Pacific Islanders, setting an example for small island developing states around the world.

25. This is not just a call to action but a call to leadership. The Pacific has the opportunity to lead by example, demonstrating to the world that even the smallest communities can make a significant impact in the global fight for better healthcare waste management and environmental sustainability.

_____

14/01/2024