One (3%) was on treatment for tuberculosis. We listed 139 contacts, including 25 staff. A quarantine facility was under renovation, with a capacity of 48 persons. There were temperature checkpoints and handwashing stations at every major entrance. Remandees were frequently sensitized on COVID-19 prevention measures through health talks. However, the disinfection of shared surfaces like door handles and items like utensils seemed unsatisfactory, potentially increasing the risk of spreading the virus.

Discussion: We confirmed the COVID-19 outbreak in the institution. Context-specific interventions were necessary in the entire Kenyan correctional services system. Water, sanitation, and hygiene (WASH) interventions and risk communication were commonly applied, but crowding and data management remained challenging. A systemic literature review revealed that even developed countries grappled with infection containment in jails and prisons during the pandemic. Thoroughly screening inmates and workers and reducing crowding were the most common interventions globally.

Conclusion: An increase in the risk of COVID-19 infection was noted in the prison, requiring more quarantine space and thorough screening and quarantining of newly admitted inmates. Contact tracing and data management needed to be improved. After the assessment, the Prisons Department worked closely with the Ministry of Health to enhance quarantine facilities and data management and reduce the prison population, thereby steadily reducing the spread of the infection.

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Utilising Virtual Microscopy for Parasitology EQA: Standardising the Gold Standard

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Intestinal parasites pose a significant global public health burden. Approximately 3.5 billion people are affected by intestinal parasitic infections globally, with more than 200,000 deaths reported annually. While diagnostic methods such as PCR and serology have their advantages, they may not be as sensitive or specific as microscopy, which remains the gold standard for identifying parasitic micro-organisms in biological samples. The foundation of this statement remains true, as long as the proficiency of the laboratory technician performing the analysis is maintained to a high standard. In this regard, external quality assurance (EQA) programs are essential for medical laboratories as they help ensure the accuracy and reliability of laboratory testing results and assess the proficiency of the operator.

Providing EQA material for parasitology proficiency testing programs (PTPs) has historically presented many challenges. Sourcing samples of sufficient quality and quantity to satisfy the requirements of a parasitology PTP is often a major difficulty. Once a suitable sample has been sourced, additional challenges arise in maintaining sample stability and homogeneity to ensure all participants receive a sample representative of the desired final interpretation. The Royal College of Pathology of Australasia Quality Assurance Programs (RCPAQAP) has begun a pilot study to assess the feasibility of using virtual microscopy to resolve some common problems encountered while procuring and planning parasitology PTPs.

Virtual microscopy allows digitisation of parasitology microscope slides for viewing and analysis on a computer or other digital device. RCPAQAP uses the MetaSystems VSlide slide scanner paired with the Zeiss Axio Imager Z2 for virtual slide scanning. This apparatus can capture over 200,000 images per slide across 17 individual focal planes, stitched together into a final ultra-high resolution virtual slide image using Metasystems Metafer software. The final product is a virtual slide that effectively emulates visual microscopy of a physical sample while ensuring each participant is assessed equally. This technology is perfectly suited for this type of sample. It provides solutions to issues related to standardisation across all PTP participants and the transport and storage of EQA materials.

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Utility of the WHO AWaRe classification in monitoring antibiotics use trends at select tertiary hospitals in Uganda: Evaluation of 2020-2023 Point Prevalence Surveys

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Introduction: Irrational use of antibiotics is a major driver of antimicrobial resistance (AMR). The WHO AWaRe classification was introduced as a tool to support antibiotic stewardship efforts to optimize antibiotic use and control AMR. We evaluated antibiotic use trends at nine tertiary hospitals in Uganda, classified according to the AWaRe classification.

Methods: We evaluated the Point Prevalence Surveys (PPS) data, collected at nine regional referral hospitals (RRH); Arua, Gulu, Jinja, Kabale, Lira, Masaka, Mbale, Mbarara and Soroti, from Oct 2020 to Dec 2023. Data were collected at each facility from five wards; gynaecology, maternity, medical, paediatric and surgical, using the modified WHO PPS tool. The antibiotics prescribed were categorized according to the 2023 WHO AWaRe classification. Data were analyzed descriptively using frequencies and percentages, and linear regression analysis using R software version 4.3.1.

Results: Over the evaluation period, 12 PPS were conducted and a total of 15,934 antibiotics were prescribed. Overall, the prevalence of antibiotic use was 60.1 per 100 admissions (8879/14,769). Access antibiotics were the most frequently used antibiotics 47.7% (7,605/15,934), followed by Watch 44.4% (7075/15,934), with less of the Reserve 0.08% (12/15,934). Up to 7.8% of the antibiotics used were unclassified combination drugs. Notably, medical ward used more Watch antibiotics 62% (1740/2806), compared to gynaecology, maternity, paediatric and surgical wards, whose use were 43.7% (791/1812), 42.2% (1425/3375), 39.2% (1555/3970), and 39.4% (1564/3971) respectively. Prescription of Reserve antibiotics was 1.8% (7/379), on the surgical ward in the 11th PPS.

Over the evaluation period, there was an 18% (R-squared: 0.183, slope: 0.147, p-value: 0.165) increase, and a 64% (R-squared: 0.641, slope: -0.417, p-value: 0.002) decrease in the use of Access and Watch antibiotics respectively. There was no notable change in the Reserve antibiotics use trend (R-squared: 0.331, slope: 0.022, p-value: 0.051).

Discussion: Similar to findings in Zambia (Mudenda, 2024), prescription of Access antibiotics was below the WHO AWaRe classification recommended threshold of 60%. The observed effect from the stewardship interventions needs to be strengthened and scaled up to preserve our endangered antibiotics.

Conclusion: Overall, antibiotic use prevalence was 61%, with a notably high use of Watch antibiotics on the surgical ward. However, there was an overall decrease in use of the Watch antibiotics over the evaluation period. Adoption of the WHO AWaRe classification to guide stewardship can help to promote the rational use of antibiotics, addressing one of the major drivers of AMR. Control of

AMR can contribute to reducing the burden of infectious diseases more so in limited resource settings.

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Utilizing Antimicrobial Use Data for Intervention Design: Advancing Antimicrobial Stewardship Practices in African Health Facilities, across Eight Countries

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Introduction: Commonwealth Partnerships for Antimicrobial Stewardship (CwPAMS) programme, funded by the UK Department of Health and Social Care's Fleming Fund and managed by the Commonwealth Pharmacists Association (CPA) and the Tropical Health and Education Trust, launched its second phase (CwPAMS2) in March 2023. The programme supports the implementation of Point Prevalence Survey (PPS) on antimicrobial use (AMU) in 73 health-facilities across eight African countries: Ghana, Kenya, Malawi, Nigeria, Sierra Leone, Tanzania, Uganda and Zambia. This study assesses how health-facilities in Africa are utilizing PPS data to design and implement antimicrobial stewardship (AMS) interventions.

Methods: A mixed-methods research design was adopted in this study, with data collection in 3 phases: pre-, mid- and post-implementation from December2022-March2025. Tools for data collection including monitoring and evaluation forms, surveys and interview guides, were created for each phase and administered remotely and in-person. Monitoring and evaluation indicators were created to assess change and impact. Quantitative data were analyzed using descriptive statistics in Microsoft Excel and SPSS software (V22.0), while qualitative data underwent thematic analysis using NVivo14®.

Results: The results show that 51/73 health-facilities had never conducted a PPS prior to CwPAMS2 implementation. Out of 73 health-facilities, 52 have completed PPS data collection and analysis. PPS data analysis led to identification of both low- and high-AMU for each health-facility, as well as areas of non-compliance with local, national, and international guidelines, such as the WHO AWaRe recommendations. Findings are being used to support the design and implementation of AMS interventions including increasing awareness and engagement of hospital management in AMS, establishing governance structures such as AMS committees, delivering AMS-focused training to prescribers, developing institutional antibiotic policies and guidelines, enhancing communication between clinical and laboratory staff, promoting the use of national and global AMS resources to increase guideline adherence at the point-of-care, and utilizing data to inform procurement and use of antimicrobials. These interventions have contributed to the development of 21 health-facility-based AMS Action Plans, delineating actions with specific and time-bound targets.

Discussion: PPS implementation at the health-facility level generated local AMU data for tailored interventions, aligning with literature advocating for context-specific approaches to combat antimicrobial resistance.

Conclusion: Whilst PPS data utilization helped identify areas for improvement and led to designing and implementing tailored AMS interventions, continued research is needed to evaluate long-term impact and cost-effectiveness and to strengthen capacity-building efforts to mitigate the threat of antimicrobial resistance in Africa.

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UV-Inactivated Zika Virus Retains Cellular Entry Capability: Enabling a Multitude of Downstream Applications

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Background/Introduction: Zika virus (ZIKV), a member of the Flaviviridae family, causes significant public health concerns. However, Zika virus (ZIKV) symptoms are usually similar to the flu, but it can sometimes cause serious brain-related health problems like meningitis and Guillain-Barre syndrome. It's especially dangerous for pregnant women because it can lead to severe brain defects in fetus, such as microcephaly. There is no vaccine and special treatment against ZIKV. The development of safe methods for virus inactivation is crucial for both research and therapeutic purposes. This study investigates the efficacy of UV-C irradiation in inactivating ZIKV while preserving its immunogenic properties.

Methods & Materials: We utilized a specially designed enclosed system allowing selective exposure of ZIKV to UV-C light at 254 nm. The minimum irradiation time required to prevent viral replication was determined using a TCID50 assay. Further characterization of the inactivated virus was performed through immunofluorescence, labeling the viral NS1 protein and dsRNA, and qRT-PCR to assess genomic integrity.

Results: UV-C irradiation for 45 seconds effectively inactivated ZIKV with no detectable cytopathic effect. The absence of cytopathic effects post-irradiation confirms the viral replication halt. qRT-PCR confirmed no significant changes in cycle quantification values, indicating preservation of the viral genome's integrity. Confocal microscopy demonstrated that the inactivated virus could enter cells but did not replicate.

Discussion: The UV-C inactivation method preserves ZIKV's protein structure and biological activity, making it safe for use in vaccine development, diagnostic assays, and antiviral research. This technique offers a non-toxic alternative to chemical inactivants, crucial for handling pathogenic viruses in a research setting.

Conclusion: With the establishment of UV-C irradiation as a safe and effective method for ZIKV inactivation, we pave the way for new investigations into virus-host interactions and vaccine development without the associated risk of infection. Future research will focus on expanding the applications of UV-inactivated ZIKV in therapeutic and diagnostic contexts and further refining inactivation protocols to enhance disease management strategies.

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VacA gene analysis of Helicobacter pylori isolates and their relationship to gastric diseases in Trinidad and Tobago

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Background: There is implication of Helicobacter pylori infection in various gastric disorders, and understanding their genetic variations among strains can enhance treatment efficacy. Notably,