disease. Significant limitations in hospital supply chain, budget and personnel make obtaining and repairing needed equipment challenging. We hypothesized that 3D printing technology could empower clinical care providers to design and manufacture simple, inexpensive products on-site to provide better patient care.

Structure/Method/Design: A commercially available 3D printer was installed at the United Mission Hospital in Tansen, Nepal. Over three months, local biomedical equipment technicians were trained in design specifications, 3D modeling, and printer operation. Product function ranged from supporting hospital infrastructure to direct patient care. As the technicians gained experience, video tutorials for the CAD software were created in Nepalese for the first time to allow training of others across the country.

Outcome & Evaluation: Hospital employees designed, manufactured and implemented a wide array of parts with marginal material costs ranging from USD 0.14 to 1.71. A simple push-button was produced to repair a broken pulse-oximeter. A respiratory tubing adapter was designed and installed, restoring function to a bubble CPAP system. Both technologies are currently in use in patient care. The city weather station, maintained by the hospital, was repaired by replacing the lost weather vane with a newly designed, 3D printed vane. The station now reports regional weather to weatherunderground.com. A custom fit protective case was manufactured for the only functional spirometer, protecting the USB ports from debris and damage. Finally, a custom mounting system was designed for an ultrasonic depth sensor, providing real-time assessment of the hospital's water supply.

Going Forward: Installation of a simple 3D printer and training in CAD software has proven beneficial in a resource limited hospital in Nepal. With a brief, dedicated training experience, local biomedical technicians learned to identify simple needs, modify and repair existing technologies, and custom design new parts. The hospital now funds its own material supplies for the printer as new projects are explored. The digitization and local manufacturing has equipped staff to innovate and improve medical care in resource-limited environments.

Abstract #: *1.064_HHR*

Training Trainers to Deliver Leadership Development Programs: Lessons Learned from Capacity Building in IPPFARO Learning Centers

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Program/Project Purpose: The USAID-funded Leadership, Management & Governance Project (LMG) trained trainers within four Learning Centers (LCs) of the International Planned Parenthood Federation Africa Regional Office (IPPFARO) to deliver the Leadership Development Program Plus (LDP+) to improve service delivery. The goal is to institutionalize the LDP+ to scale up effective interventions, increasing utilization of family planning and reproductive health (FP/RH) services in Sub-Saharan Africa.

Structure/Method/Design: The LDP+ supports health workers to learn and practice leadership, management, and governance (L+M+G) skills. Teams learn practical skills to overcome challenges by developing shared visions, analyzing inhibiting factors, thinking collaboratively, and planning innovative solutions, and apply these skills by implementing 5-8 month service delivery quality improvement projects. Teams use strategic problem-solving to identify a workplace challenge and its obstacles and root causes, then select specific measurable results and priority actions that can be taken to achieve the desired clinical outcomes. The LDP+ provides guidance on engaging relevant stakeholders and governing bodies to achieve scale-up.

The LDP+ training of trainers (TOT) was delivered to LCs in Uganda, Ghana, Mozambique, and Cameroon. Once trained, facilitators delivered the program with local teams, choosing a priority health challenge (primarily related to increasing the number of clients receiving FP/RH services), then developing, implementing, and evaluating action plans to improve quality of and access to facility services.

Outcome & Evaluation: Facilitators from three of the four countries successfully replicated the LDP+ with multiple branches of their IPPF Member Association (MA). In addition to delivering the program in 11 branches in Uganda, Reproductive Health Uganda (RHU) delivered TOTs in Tanzania and Malawi without external financial or technical support. Multiple teams met or exceeded the targets in their original action plan, selected a new challenge, and developed a new plan. Team success was quantitatively evaluated by comparing baseline and target indicators.

Program participants have strengthened capacity to overcome challenges and deliver better health services, and transferred that capacity building approach to other teams of providers.

Going Forward: IPPFARO is institutionalizing the LDP+ as a tool the LCs will continue providing to regional MAs, including as a financial mobilization strategy. The team-based approach is a demonstrated way to build sustainability.

Abstract #: *1.065_HHR*

State University of New York (SUNY) Global Health Institute (GHI) Virtual Grand Rounds Forum Fosters Collaboration and Innovation across the SUNY Network

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Program/Project Purpose: The State University of New York (SUNY) is the largest public university system in the United States. The SUNY Global Health Institute (SUNY-GHI) was formed in 2014 to provide a mechanism for global health programs at the SUNY Academic Health Centers to foster collaboration and

innovation in education, training, and research with international partners and regional corporate and economic leaders.

Structure/Method/Design: The four academic health centers (Buffalo, Brooklyn, Stonybrook and Syracuse) linked with the School of Public Health in Albany and the Manhattan based School of Optometry. A series of meetings were held to identify opportunities for cross campus collaboration.

Outcome & Evaluation: In early 2016, the SUNY-GHI Steering Committee approved a new "Virtual Grand Rounds" lecture series. The 2016-2017 series features five global health lectures, with each participating partner institution hosting one lecture each. The lectures are broadcast across the SUNY network and recorded using web conferencing software.

The 2016 – 2017 Virtual Grand Rounds Series was launched in September 2016 with a lecture on the global emergence of mosquito-borne disease in the Americas, including Zika, given by a faculty member from the University at Albany School of Public Health's Department of Biomedical Sciences and the New York State Department of Health's Wadsworth Center. By using the University at Albany School of Public Health's Adobe Connect video conferencing capabilities, nearly 100 students and faculty in classrooms across five SUNY campuses as well as representatives from several partner institutions globally were able to remotely engage in the presentation and a lively follow-on discussion.

Going Forward: The 2016-2017 Virtual Grand Rounds Series will continue with lectures by the SUNY Upstate Medical Center, SUNY Downstate Medical Center, Stony Brook University, and the University at Buffalo. Planning for the 2017-2018 series is already underway. The SUNY-GHI will use this new forum to foster cross-campus communication among faculty, students and international partners as well as promote foci of global health discussions on each campus.

Source of Funding: State University of New York (SUNY).

Abstract #: *1.066_HHR*

Rethinking R&D: Partnerships as Drivers of Global Health Innovation

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Program/Project Purpose: Emerging infectious diseases (EIDs) pose a significant health and socioeconomic threat. Five major global outbreaks in the last fifteen years have resulted in over 250,000 deaths and $100 billion in financial losses. Each pandemic shares a critical common thread – the lack of an effective, clinically approved vaccine prior to the outbreak's escalation. Interestingly, the public health imperative of EIDs appears to galvanize stakeholders into fast-tracking the research and development (R&D) timeframe, with vaccine candidates advancing from pre-clinical to clinical trials 80% faster during an outbreak. This investigation aims to study the factors that have accelerated R&D for the Ebola and Zika pandemics, and use the lessons learned to develop policy tools for future EIDs.

Structure/Method/Design: Candidates in clinical trials were screened through official National Library of Medicine and National Institutes of Health databases. Preclinical candidates were identified and then cross-referenced through World Health Organization reports, disease-specific networks, industry outlets, and academic literature using a staggered search strategy of "pathogen/product/region/R&D stage/R&D player's role". External factors were accounted for by mapping R&D progression against outbreak timelines. Finally, stakeholders from representative organizations in the public, private, and nonprofit sector were interviewed to provide feedback regarding vaccine R&D's policy challenges.

Outcome & Evaluation: Analysis revealed product development partnerships (PDPs) to be the primary drivers of R&D for EIDs. Interestingly, while small companies and academic institutions comprised the majority of PDPs, representatives from those organizations cited a significant lack of financial backing and incentives for such endeavors prior to the outbreak. Specifically, stakeholders advocated for greater funding to support the transition from preclinical to Phase I. Overall, stakeholders called for greater investment in PDPs, highlighting the need for financial risk sharing due to R&D's high rate of technical attrition.

Going Forward: Institutional analysis and stakeholder interviews suggest that the infrastructure to manage EIDs exists, but is underfunded. New R&D policies must recognize the diversity of innovation "homes" and take steps to tailor incentives to unique partner profiles. Forward-looking investment in R&D alliances will be critical in the transition from reactive to proactive models of pandemic preparedness.

Source of Funding: 1) Duke University, Bass Connections Program 2) The World Health Organization.

Abstract #: *1.067_HHR*

Using Data Visualization to Create New Tools for Interactive CHW Supervision in the Last Mile

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Program/Project Purpose: Since 2015, Medic Mobile has been working with Muso in Mali to design, build, and deploy dashboards that are used by supervisors to provide performance feedback to community health workers (CHWs). In 2015, Muso and Medic co-designed a 6-month randomized controlled trial (RCT) to measure the impact of this intervention on CHWs performance. This session will focus on the process used to design and test the dashboards, as well as the results of the study.

Structure/Method/Design: In Muso's health system strengthening intervention, CHWs receive individual monthly supervision from a dedicated cadre of CHW supervisors. Muso's 360° CHW Supervision model allows supervisors to collect information on CHW performance from multiple angles, including patient feedback, direct observation, and one-on-one feedback sessions. Medic Mobile and Muso have co-designed a supervision tool, the CHW Performance Dashboard, designed to facilitate discussion during the one-on-one feedback session. A web-based application analyzes CHW patient data collected on paper or via a mobile application, and creates an easy-to-read personalized CHW dashboard. The dashboard graphically displays each CHW's performance along three indicators: quantity, speed and quality of care. This dashboard