

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.

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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.

Source of Funding: USAID/GH.

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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