WEBINAR SESSION 6 (FEB 2019) – SUMMARY

Understanding the Cost of WASH in Health Care Facilities: Where Do We Start?

Presentations by Darcy Anderson, MPH, from the University of North Carolina, Chapel Hill and Dr. Robert Quick, MD, MPH, from the Centers for Disease Control and Prevention.
Commentary from Deborah A. McFarland, MPH, PhD, Associate Professor, Hubert Department of Global Health, and Department of Health Policy and Management.

Purpose of this Webinar

Cost data are critical to ensuring sustainable water, sanitation and hygiene (WASH) service delivery in healthcare facilities (HCF), but standardized cost collection methods are lacking. Researchers at the University of North Carolina, Chapel Hill developed a 10-step costing model method to collect cost evidence. CDC researchers calculated total program costs for a short-term WASH program in 117 HCF in 5 districts in western Kenya. These researchers provide valuable insight into understanding costs data collection in WASH in HCF.

Summary of Presentation

Collecting Costs Evidence

- Researchers from the University of North Carolina, Chapel Hill aimed to identify expenditures necessary to establish, operate and maintain environmental health services in HCF in low-resource settings and evaluate the costs of these services.
- This was done by conducting a scoping review and framework development and collecting field data in Malawi.
- Researchers developed a 10-step costing model that can be broken down into three phases: Ideation, Data collection, and Synthesis.
- The Ideation stage consists of four steps: 1) defining costing goals, 2) defining the service to be costed, 3) defining the scope of eligible costs and 4) developing a costing plan.
- Researchers applied the Data collection phase in Malawi by 5) identifying data sources, 6) collecting costs data, 7) collecting non-costs contextual data, and 8) aggregating and assessing the data. The data collected were compared to the costing framework and the entire process was iterative.
- The Synthesis phase includes: 9) calculating costs and 10) disseminating and applying results for planning and budgeting internally within facilities and more broadly for policy changes and setting national priorities.

WASH in HCF: A Cost Analysis of Short-Term Interventions in Kenya

- Researchers from the CDC implemented a program to address poor access to handwashing and drinking water facilities in the short-term by installing portable

handwashing and drinking water stations in 117 HCF in 5 districts in western Kenya.
- Increases in the number of hand washing stations, improved drinking water stations and safe drinking water stations were observed.
- A cost analysis was conducted for all 117 HCF to determine the average cost per beneficiary.
- Cost per beneficiary was calculated by multiplying the total program cost by incremental increases in access to handwashing and drinking water stations in HCF and dividing this number by the number of HCF, health workers, households and individuals.
- Limitations of this study included total costs did not include recurring costs in the analysis, the findings are not generalizable, an outcome of at least one water station was accepted for analysis, direct costs may have increased over time and the study did not examine long-term costs.

<u>Key Take-Aways and Lessons Learned</u>

- Existing data collection tools are not designed for WASH in HCF and need to be piloted, revised and disseminated.
- A standardized reporting system for costs and rigorous costing definitions do not exist in the literature due to a lack of clarity and definitions of where WASH falls in context of universal healthcare and health systems.
- When collecting costing data, it is important to increase stakeholder engagement, establish systems to support sustained use and maintenance of WASH interventions, and consider the costs of cleaning staff, waste disposal and long-term interventions.

Comments from Dr. Deborah McFarland:

- Differentiate between key activities and inputs required for each activity and identify who these costs belong to (HCF, donor, household).
- Identify who or what office is in charge of documenting costs and ask for expenditure data, not budget data.
- Be very clear about which cost year is being considered in the analysis.
- Consider the costing base year and the change in pricing in purchase of commodities when scaling programs.
- Place cost per year in the context of HCF budgets.
- Provide expenditures in the context of universal health coverage.
- Consider whether it cost more to collect the data at a micro level compared to the cost drivers.
- Look at both total cost and total revenue for a complete financial analysis.

Unanswered Questions from the Discussion

- Deborah McFarland: How is the cost per health worker relevant as an outcome?
  Rob Quick: As we saw during the Ebola epidemic, poor WASH conditions can put health workers at risk of healthcare associated infections, so they are important beneficiaries of these programs.
  Darcy Anderson: Costs in units of "per healthcare worker" may be useful to contextualize services where the overall cost is strongly correlated with the number of healthcare workers. An example is infection prevention training for nurses or the purchase of personal protective equipment for cleaners. This outcome will be less relevant for other services where costs are less strongly correlated with number of healthcare workers, such as vector control. However, current understanding of what drives demand for environmental health services is poor. Ultimately, the sector needs to develop consensus on standardized and reliable indicators to measure both quantity and quality of service delivery outcomes. Standard indicators will facilitate generalizing findings and comparing across facilities.
- Deborah McFarland: Did you convert your costs to a base year?
  Rob Quick: We did not. This was a retrospective look at a one-off intervention for which we had total cost data.
  Darcy Anderson: We converted costs to a base year in our work. However, in our forthcoming systematic review, we found that this practice is infrequent among available costing studies. Furthermore, in this review, we found that the precise dates at which expenses were incurred was often unclear, limiting our ability to perform this conversion and compare costs across included studies. Studies often documented the dates when a report was published, records reviewed, etc., rather than the year that expenses were actually incurred. This hinders accurate adjustment for inflation and may introduce significant bias in cases with long delays between publication or review dates and the true dates of expenditure, or in cases where rates of inflation are high. To address this source of bias, studies should report the dates when expenses were incurred. For data collected in different years, not converting costs to a base year will bias findings by a percentage proportional to the rate of inflation. To compare studies conducted in different years, we found that converting to a base year can change costs estimates by as much as 20%, particularly in settings with high inflation.
- Deborah McFarland: Putting the cost of commodities in context, what percent of the HCF budget do they comprise?
  Rob Quick: That is an excellent point. We know the HCFs in many countries have scant budgets that can even get in the way of procuring soap, for example. In our current projects, we are working to improve the systems through which these programs operate so that essential commodities are continuously available.
  Darcy Anderson: This is potentially a useful unit that would be easy to compare across settings. However, environmental health is often a low funding priority relative to other healthcare needs, so in some contexts low budget or expenditure

proportions may represent low priority rather than low costs required to achieve adequate service. Combining costs data with quality indicators will help provide context.

- Deborah McFarland: Comment about putting costs in the context of universal health coverage, which should include WASH.
  Rob Quick: We couldn't agree more and in our current projects, we are working to ensure that ministries of health, water, and finance participate to ensure that planning for HCF improvements incorporate WASH as an essential component of quality health care.
  Darcy Anderson: A conceptual framework to define the needs and boundaries of environmental health in HCF is an important but underdeveloped area of study. Lack of clarity around what exactly are environmental health needs and the resources required to meet those needs likely contributes to inconsistent and incomplete evaluation and reporting of environmental health costs in HCF. Bundling WASH (and other environmental services!) within the framing of universal health coverage, or parallel development of a similar conceptualization for an essential environmental health package, may be useful. A functional facility (i.e. one that has water, sanitation, and hygiene, but also other related needs not considered when we think of community-based WASH, such as waste management, cleaning, and energy) is a prerequisite to the delivery of universal health coverage. The Water Institute is working on such a framework to advance scholarship in this area.
- Deborah McFarland: Whose costs are you looking at in these analyses?
  Rob Quick: In the example I presented, the costs were covered by the donors via UNICEF. In our current projects, a variety of stakeholders, including donors, are brought into the planning process to share costs, the idea being that this will create greater local buy-in and enhance prospects for sustainability.
  Darcy Anderson: We have several ongoing projects on this topic. They include the collection of costs data, as well as the development of related theoretical frameworks, models, and definitions. The broad goal of these projects is to understand the costs of establishing, operating, and maintaining environmental health services in healthcare facilities—not just understanding overall costs but also the resource inputs necessary. We are collecting costs for WASH, but also related services: cleaning, healthcare waste management, vector control, laundry, and lighting/energy. Both our fieldwork in Malawi and systematic review projects have encountered challenges with finding costs related to establishing services (e.g. construction costs, start-up costs of equipment purchases and training). Operation and maintenance costs are better documented, though evidence overall is lacking.
- Wendy Graham: Calculating unit costs is clearly key, but so is the choice of the denominator. For Robert - when you refer to "individuals" in HCFS, do you just include patients? Our work in the Soapbox Collaborative, has found the need to challenge this owing to the presence of huge numbers of visitors who also use the WASH utilities.

Rob Quick: I couldn't agree more. In fact, the population of individual beneficiaries we considered included everyone in the HCF catchment area, not just patients. We looked at the cost spread across that entire populations.

Summary of Action Items

- Increase stakeholder engagement.
- Document costing process steps.
- Triangulate results across data sources where available.
- Document known gaps and limitations.
- Contextualize findings with non-costs indicators.
- Prospectively document lifecycle costs.
- Be proactive about good record keeping.
- Identify, adapt and/or develop cost data collection tools.
- Share, review and disseminate WASH in HCF costing findings.
- Work with health systems to ensure that commodities form part of the budget.