USAID MEDICINES, TECHNOLOGIES, AND PHARMACEUTICAL SERVICES (MTaPS) PROGRAM

*Improved Access. Improved Services. Better Health Outcomes.*

OPD triage area for Kumi Hospital, Eastern Uganda. Photo credit: JP Waswa, MTaPS Uganda

# Improving the Quality of Health Care Services by Strengthening IPC at Centers of Excellence: Technical Report

**July 2021**

USAID FROM THE AMERICAN PEOPLE

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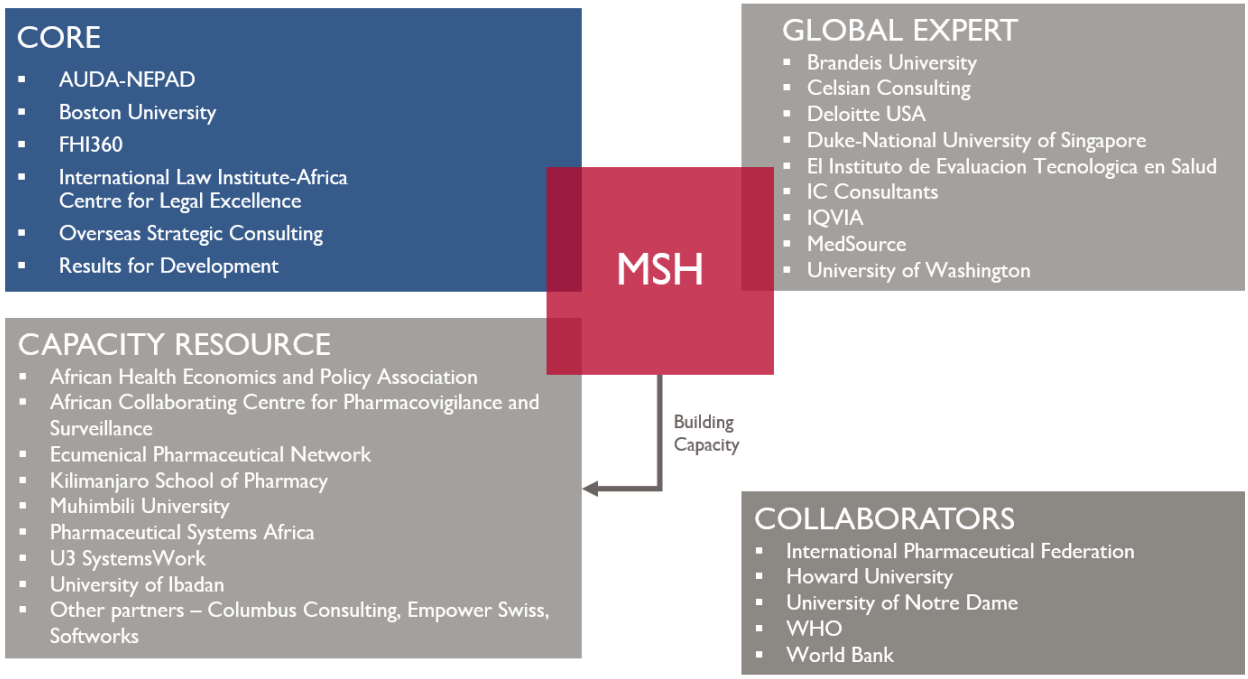
## About the USAID MTaPS Program

The USAID Medicines, Technologies, and Pharmaceutical Services (MTaPS) Program enables low- and middle-income countries to strengthen their pharmaceutical systems, which is pivotal to higher-performing health systems. MTaPS focuses on improving access to essential medical products and related services and on the appropriate use of medicines to ensure better health outcomes for all populations. The program brings expertise honed over decades of seminal pharmaceutical systems experience across more than 40 countries. The MTaPS approach builds sustainable gains in countries by including all actors in health care—government, civil society, the private sector, and academia. The program is implemented by a consortium of global and local partners and led by Management Sciences for Health (MSH), a global health nonprofit.

## The MTaPS Consortium

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# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ABHR | alcohol-based hand rub |
| AMR | antimicrobial resistance |
| AMS | antimicrobial stewardship |
| CDC | Centers for Disease Control and Prevention |
| CME | continuous medical education |
| CQI | continuous quality improvement |
| FY | fiscal year |
| HAI | health care-associated infection |
| HCW | health care worker |
| HF | health facility |
| HH | hand hygiene |
| HHSAF | Hand Hygiene Self-Assessment Framework |
| IPC | infection prevention and control |
| IPCAF | Infection Prevention and Control Assessment Framework |
| MOH | Ministry of Health |
| MTaPS | Medicines, Technologies, and Pharmaceutical Services |
| PD | patient days |
| PNFP | private-not-for-profit |
| RRH | regional referral hospital |
| UCMB | Uganda Catholic Medical Bureau |
| UPMB | Uganda Protestant Medical Bureau |
| USAID | US Agency for International Development |
| WHO | World Health Organization |

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# PROJECT SUMMARY

| | | |
|---|---|---|
| **Program Name:** | | USAID Medicines, Technologies, and Pharmaceutical Services (MTaPS) Program |
| **Activity Start Date and End Date:** | | September 20, 2018–September 19, 2023 |
| **Name of Prime Implementing Partner:** | | Management Sciences for Health |
| **Contract Number:** | | 7200AA18C00074 |
| **MTaPS Partners** | **Core Partners** | Boston University, FHI 360, Overseas Strategic Consulting, Results for Development, International Law Institute-Africa Centre for Legal Excellence, NEPAD |
| | **Global Expert Partners** | Brandeis University, Deloitte USA, Duke-National University of Singapore, El Instituto de Evaluacion Technologica en Salud, IC Consultants, Imperial Health Sciences, MedSource, QuintilesIMS, University of Washington |
| | **Capacity Resource Partners** | African Health Economics and Policy Association, Ecumenical Pharmaceutical Network, U3 SystemsWork, University of Ibadan, University of Ghana's World Health Organizations (WHO) Pharmacovigilance Collaborating Center, Kilimanjaro School of Pharmacy, Muhimbili University, Pharmaceutical Systems Africa |
| | **Collaborators** | International Pharmaceutical Federation, Howard University, University of Notre Dame, WHO, World Bank |

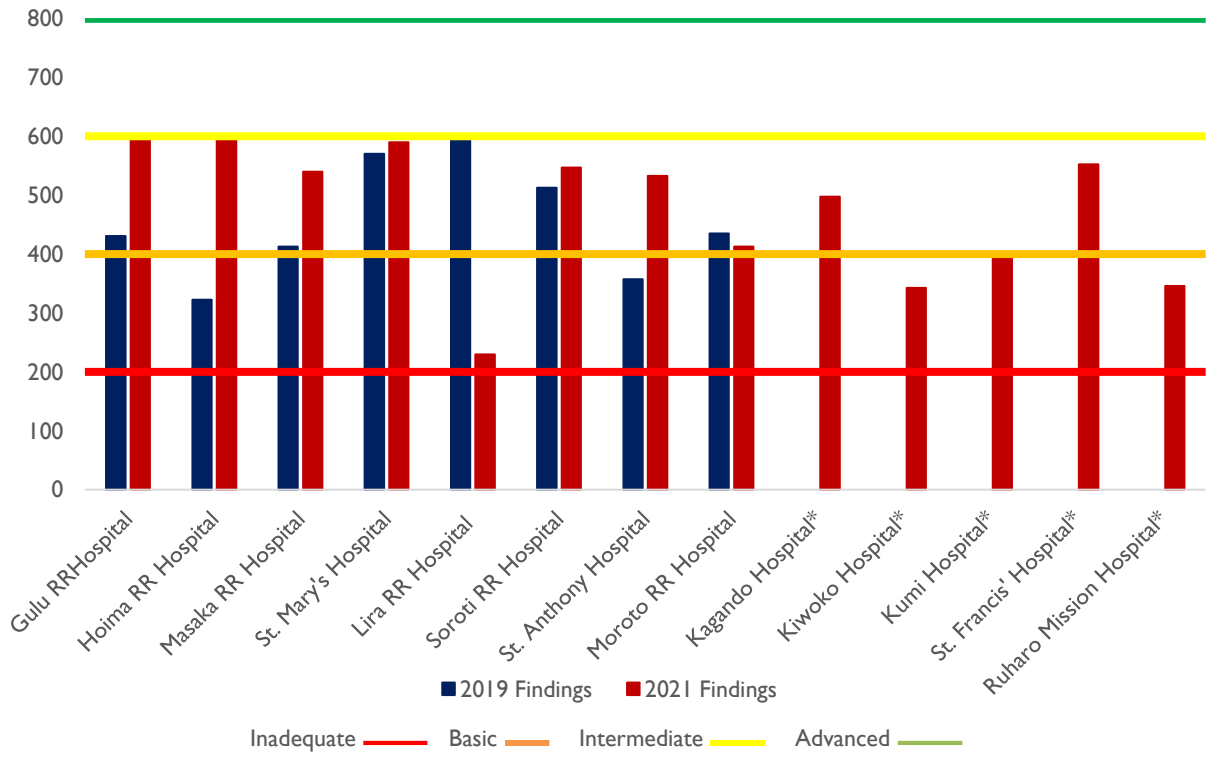
# EXECUTIVE SUMMARY

The US Agency for International Development (USAID) Medicines, Technologies, and Pharmaceutical Services (MTaPS) Program is supporting Uganda to implement the national action plan for antimicrobial resistance (AMR), including multisectoral coordination, antimicrobial stewardship (AMS), and infection prevention and control (IPC). MTaPS is implementing IPC and hand hygiene (HH) interventions in 13 health facilities (HFs) with the aim of improving IPC and HH practices.

As a basis for informing IPC interventions, in 2021, MTaPS applied World Health Organization (WHO) tools to assess IPC and HH capacity, HH knowledge and perceptions of health care workers (HCWs) and senior managers, and soap and alcohol-based hand rub (ABHR) consumption in 13 HFs, including 6 regional referral hospitals (RRHs) and 7 private-not-for-profit (PNFP) hospitals. The tools were applied in the HFs by MTaPS technical officers, and steps were taken to ensure correct application of the tools and interpretation of the results. This was a follow-on to a 2019 assessment in 8 of the 13 HFs.

The average Infection Prevention and Control Assessment Framework (IPCAF) score for the 13 HFs was 476/800 (SD 119), which is an intermediate-level rating, with most of the HFs rating intermediate and none rating inadequate. Overall, there was an increase in average IPCAF scores between the two assessments (figure 1).

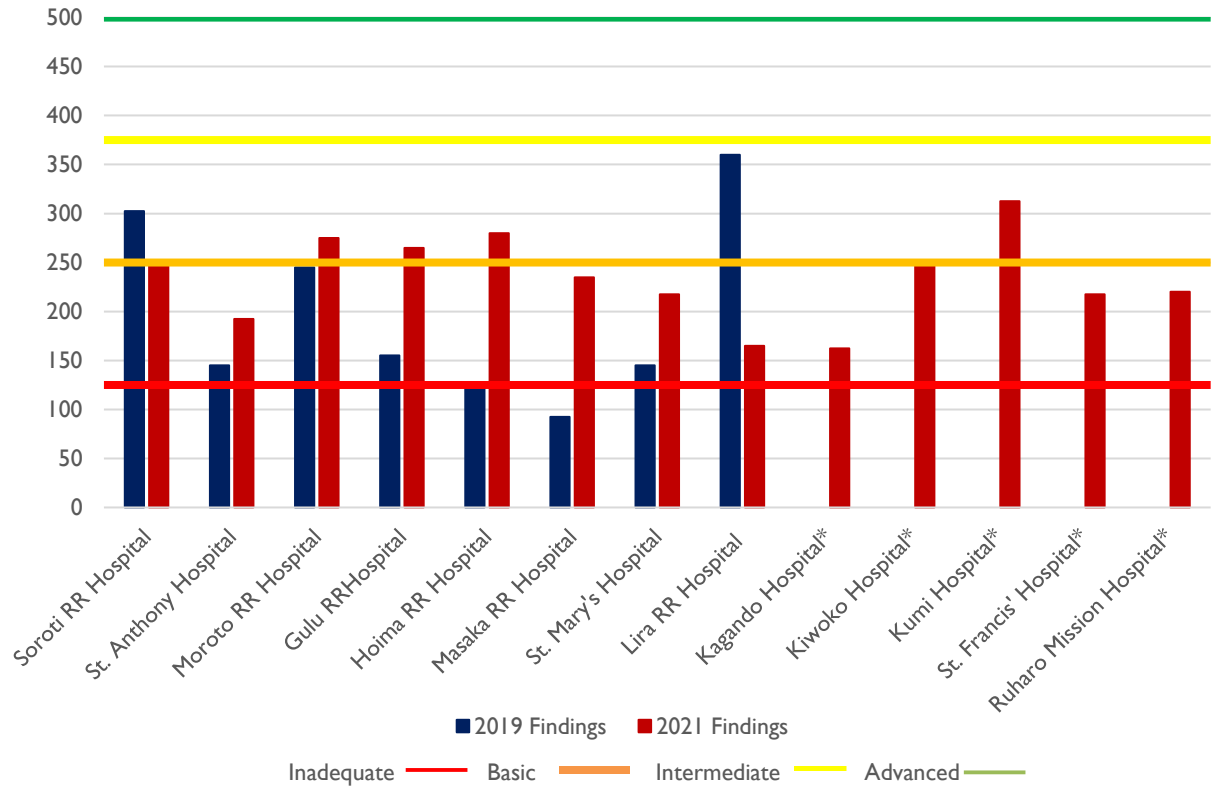
**Figure 1: IPCAF scores and levels for the 2019 survey and 2021 assessment**




**HFs that did not participate in the 2019 survey, so no comparison data are available*

There was generally poor performance on the Hand Hygiene Self-Assessment Framework (HHSAF), with an average score of 234.4/400 (SD 44.7), which is basic HH level. Like the IPCAF assessments, there was an increase in average HHSAF scores between the two assessments (figure 2).

**Figure 2: HHSAF scores and levels for the 2019 survey and 2021 assessment**




**HFs that did not participate in the 2019 survey, so no comparison data are available*

The HFs' average consumption for hand rub and soap was 39.4mL/patient days (PD) (SD 19.4) and 39.9mL/PD (SD 14.5), respectively, which is significantly higher than the standard ABHR consumption of 20mL/PD. Despite availability of adequate IPC structures, ABHR consumption was generally high in most HFs due to interventions for controlling the spread of COVID-19 in HFs. In addition, an assessment of 130 HCWs revealed low knowledge (average score for all participants being 44.2%) about HH and health care-associated infections (HAIs). This reinforces the need to link HH to daily patient care and IPC practice. Of the 130 HCWs, 68% had received formal training on HH in the past three years. It was further revealed that the trainings are usually disease-based (e.g., COVID-19, Ebola virus disease) and a daily practice for patient safety. Comprehensive HH observation surveys are planned, and the results will link the behavior change to previous and current interventions.

This assessment represents one of the first applications of these WHO tools on this broader scale in Uganda, covering both public and PNFP HFs. These assessments have delivered valuable insight into the state of IPC and HH implementation in Uganda. MTaPS will work with regional implementing partners in fiscal year (FY) 22 to provide technical assistance to strengthen IPC practices in different health regions as a mechanism for building sustainability for IPC implementation.

# BACKGROUND

Uganda scored capacity level 3 on the 2017 Joint External Evaluation assessment for WHO Benchmarks for IHR Capacities benchmark 3.3 (infection prevention and control),[1] but the 2019 MTaPS scoping visit identified several Joint External Evaluation-2 capacity level 2 activities that were incomplete. These included reviewing WHO recommendations on core components for effective IPC programs and the national and facility practical manuals, using IPC assessment tools to assess the core components of IPC programs at the national and facility levels, identifying precise areas requiring action, developing and implementing action plans informed by assessment results, developing national IPC committee terms of reference, and developing a national IPC policy and plan for national health.[2] MTaPS' Global Health Security Agenda work was designed to involve both the human and animal health sectors to strengthen multisectoral coordination for AMR and make the program a suitable implementing partner to support the Government of Uganda to improve scores for benchmark 3.3.

The Uganda Ministry of Health (MOH) acknowledges the need to invest in building resilient IPC programs in HFs to compliment efforts to improve patient safety and combat AMR.[3] WHO recommends HH as the entry point for setting up hospital IPC programs,[4]—an approach used by MTaPS in setting up Centers of Excellence in IPC in selected HFs in Uganda. MTaPS established IPC programs in selected HFs in 2019 and 2020, including conducting baseline IPC and HH assessments using WHO tools; setting up IPC committees supported by IPC teams; training these committees and teams; supporting the committees to develop and implement IPC and HH continuous quality improvement (CQI) plans; and embarking on extensive IPC and HH education and training, including dedicated training workshops and continuous medical education (CME) activities. These interventions have provided a basis for implementing interventions for improving IPC and HH with the aim of reducing HAIs and combatting AMR.

# METHODOLOGY

## METHODS AND MATERIALS

As a basis for informing IPC interventions, MTaPS applied WHO tools to assess IPC and HH capacity, HH knowledge and perceptions of HCWs and senior managers, and soap and ABHR consumption for 13 HFs. The tools were applied in the HFs by MTaPS technical officers, and steps were taken to ensure correct interpretation of the tools and high data quality. This report presents the results from these assessments and the way forward for improving IPC and HH to ensure patient safety and combat AMR.

[1] http://apps.who.int/iris/bitstream/handle/10665/258730/WHO-WHE-CPI-SUM-2017.39-eng.pdf;jsessionid=18CQuF6sostWaeSkSZRJPpb8UGDqH1w2WF?sequence=1

[2] https://apps.who.int/iris/rest/bitstreams/1210452/retrieve

[3] https://www.health.go.ug/cause/infection-prevention-and-controltraining-of-trainers-manual/

[4] https://www.who.int/infection-prevention/tools/core-components/en/

## STRATEGIC APPROACH

MTaPS is utilizing the WHO stepwise approach to IPC implementation[5] to set up Centers of Excellence for IPC in 14 HFs by mobilizing all stakeholders and resources to ensure successful IPC implementation, including engaging health facility managers, implementing partners, and the MOH (step 1: preparing for action); undertaking baseline assessments for IPC and HH using WHO tools (step 2: baseline assessment); working with facility IPC committees to develop and implement CQI plans with the goal of reducing HAIs and combatting AMR (step 3: develop and implement action plans); conducting follow-up annual evaluations to assess the effectiveness of the CQI plan implementation and cost-effectiveness (step 4: evaluating impact); and developing long-term and ongoing plans through high-level (regional implementing partners [e.g., USAID Regional Health Integration to Enhance Services programs]) and national-level (MOH, IPC and AMS technical working committees) engagements to foster sustainability (step 5: sustaining the program).

In 2019, MTaPS applied WHO and Centers for Disease Control and Prevention (CDC) tools to assess IPC and HH in the first implementation HFs, including six RRHs; (Moroto, Soroti, Lira, Gulu, Hoima, and Masaka). This baseline assessment was part of the national IPC survey that measured hospital-level IPC capacity using the IPCAF tool, HH capacity using the HHSAF, HH compliance using the HH observation tool, and HAI prevalence using an adapted CDC tool for HAI surveillance.

The results are shown in table 1. The results of the survey were disseminated to these facilities, and MTaPS supported the IPC committees to develop and implement CQI plans to improve IPC and HH. By 2020, these HFs had been supported to set up hospital IPC and HH programs, including functional IPC committees; set up IPC and HH teams; secure commitment from hospital managers to support IPC activities; facilitate provision of IPC and HH guidelines and other information, education, and communication materials, including reference materials, books, and posters; conduct dedicated IPC and HH facility-based education activities, including CMEs and dedicated IPC/HH mentorship and supervision activities to support the implementation of CQI plans; and conduct IPC assessments to evaluate IPC implementation during the commencement of implementation of COVID-19 pandemic mitigation measures in 2020.

In FY21, MTaPS extended its support to eight PNFP health facilities, including Kagando Hospital (Kasese district, western Uganda); Kiwoko Hospital (Nakaseke district, central Uganda); St. Francis Hospital-Naggalama (Mukono district, central Uganda); St. Anthony's Hospital (Tororo district, eastern Uganda); St. Mary's Hospital-Lacor (Gulu district, northern Uganda); CoRSU Rehabilitation Hospital (Wakiso district), Ruharo Mission Hospital (Mbarara district, western Uganda); and CoRSU hospital (Wakiso district, central Uganda). Inception activities included engagements with the Uganda Catholic Medical Bureau (UCMB) and Uganda Protestant Medical Bureau (UPMB), which are responsible for accrediting their respective PNFP hospitals. The engagements were aimed at mobilizing all stakeholders and resources for IPC and AMS implementation in these facilities. This was followed by engaging with HF managers; introducing the approach to managers, key HCWs, and hospital staff; and conducting a baseline assessment. The assessment was also conducted in the original six RRHs but was expanded to include ward infrastructure, HH knowledge and perceptions for HCWs and health managers, and ABHR

[5] https://www.who.int/infection-prevention/tools/core-components/cc-implementation-guideline.pdf

and soap consumption. The assessment was followed by support to the IPC committees of the PNFP hospitals to develop and implement CQI plans to improve IPC and HH, which was accomplished through a residential training workshop for the IPC committees/team members from the eight PNFP hospitals. In addition, the workshop facilitated the transfer of knowledge, including IPC and AMR concepts; interconnections among IPC, AMS, HAI, and AMR; IPC data collection and interpretation; and HAI surveillance. Thereafter, MTaPS supported the implementation of the CQI plans through regular mentorship activities and supervision.

**Table 1: Results of the 2019 baseline survey (national IPC survey)**

| Entity | IPCAF (/800) | HHSAF (/500) | HH Observation (%) | HAI Prevalence (%) |
|---|---|---|---|---|
| National | 433 | 207 | 22 | 15.1 |
| Moroto RRH | 435 | 275 | 32 | 14.5 |
| Masaka RRH | 412.5 | 235 | 12 | 22 |
| Soroti RRH | 512.5 | 252.5 | 9 | 8.8 |
| Gulu RRH | 430.5 | 265 | 13 | 16.4 |
| Hoima RRH | 322.5 | 280 | 20 | 15.4 |
| Lira RRH | 595 | 165 | 31 | 7.5 |
| St. Mary's Lacor Hospital | 570 | 217.7 | 28 | 6.4 |
| St. Anthony's Hospital | 357.5 | 192.5 | 38 | - |

# IMPLEMENTATION

## 1.1 PROGRESS OF IPC AT CENTERS OF EXCELLENCE AND FOLLOW-UP ASSESSMENT DURING PROGRAM YEAR 3

Cumulatively, MTaPS is supporting 14 hospitals, including 6 RRHs and 8 PNFP hospitals, to implement CQI plans for improving IPC with HH as the entry point for IPC implementation. The aim of this implementation is to build these hospitals as Centers of Excellence for IPC and for them to expand IPC activities to all HFs under their direct supervision. MTaPS established 4 IPC committees and revitalized 10 committees for IPC program implementation with the aim of reducing HAIs and preventing AMR. These committees are routinely supported by MTaPS technical officers through remote and direct support supervision visits and mentorships.

MTaPS has also conducted more than 50 IPC/HH education activities, including CMEs; baseline data dissemination; dedicated IPC and HH CMEs and facility-based trainings for IPC committees, teams, and hospital staff; distribution and dissemination of information, education, and communication materials; and off-site training workshops involving 1,172 health workers (65% female, 35% male). These activities have generated much-needed buy-in from hospital managers and HCWs, thereby facilitating the implementation of CQI plans.

A critical step in IPC implementation is to measure and evaluate progress. MTaPS, in collaboration with the MOH, UPMB, and UCMB, conducted assessments in 13 hospitals including 6 RRHs (public/government owned) and 7 PNFP hospitals. The facilities are distributed throughout the north (excluding the West Nile), east, west, and central parts of the country. The assessed RRHs include Masaka RRH, Soroti RRH, Moroto RRH, Lira RRH, Hoima RRH, and Gulu RRH. These hospitals participated in the 2019 IPC survey, and the data presented in this report act as a progress and

evaluation assessment; therefore, comparative data will be presented for them. The PNFP hospitals included Kagando Hospital, Kiwoko Hospital, St. Francis Hospital-Naggalama, St. Anthony's Hospital-Tororo, Kumi Hospital, St. Mary's Hospital-Lacor, and Ruharo Mission Hospital. Among these, only St. Anthony's Hospital-Tororo and St. Mary's Hospital-Lacor participated in the 2019 IPC survey; therefore, comparative data will be presented for these too. The rest of the PNFP hospitals did not participate in this survey, and no comparative data will be presented.

## 1.2 DATA COLLECTION TOOLS

MTaPS applied the following standard WHO tools without any modifications. Table 2 summarizes the different tools applied, the method of assessment used, and the respondents for each tool.

**Table 2: Tools and methods used in the assessment and the respective correspondents**

| Tool | Method of assessment | Respondents |
|---|---|---|
| Infection prevention and control assessment framework (IPCAF)[6] | Interviewing and observation | IPC focal person/nursing in-charges |
| Hand Hygiene Self-Assessment Framework (HHSAF)[7] | Interviewing and observation | IPC focal person/nursing in-charges/hand hygiene focal persons |
| Soap/Hand rub Consumption Survey[8] | Interview, review of stock cards | Store personnel |
| Hand hygiene knowledge questionnaire for HCWs[9] | Interview | Hospital staff |
| Perception survey for health care workers[10] | Interview | Hospital staff |
| Perception survey for senior managers[11] | Interview | Hospital directors, administrators, and nursing in-charges |

## 1.3 DATA COLLECTION

The data collection process involved two critical steps.

The first step involved training hospital IPC teams and selected HCWs on data collection tools and interpretation. The trained personnel went on to work as investigators and support data management. This was conducted through focused on-site, one-day trainings facilitated by MTaPS technical staff. The training session involved theoretical and practical mock application of the tools and the participants were tested on what they learned. In addition, data collection activities were disseminated to hospital managers and hospital staff to obtain buy-in and collaboration. The aim of these trainings was to build hospital capacity to conduct routine assessments with accurate data collection and interpretation.

The second step involved data collection from the different departments and units. Data were collected in one day and involved simultaneous application of the tools by the trained data collectors. Continuous mentorship is being applied to the HFs to fine tune their data collection skills.

[6] https://www.who.int/infection-prevention/tools/core-components/IPCAF-facility.PDF
[7] https://www.who.int/gpsc/country_work/hhsa_framework_October_2010.pdf
[8] https://www.who.int/gpsc/5may/Soap_Handrub_Consumption_Survey.doc
[9] https://www.who.int/gpsc/5may/Hand_Hygiene_Knowledge_Questionnaire.doc
[10] https://www.who.int/gpsc/5may/Perception_Survey_for_Health_care_Workers.doc
[11] https://www.who.int/gpsc/5may/Perception_Survey_for_Senior_Managers.doc?ua=1

### 1.4 DATA MANAGEMENT

The data were entered into MS Excel sheets provided by MTaPS with support of the hospital IPC teams and were cleaned. MTaPS worked with trained investigators to conduct data entry and analysis processes as a mechanism for building the capacity of health facilities to conduct the assessments on a routine basis. The data were then analyzed using MS Excel; presented in tables, graphs, and charts; and described below.

# RESULTS

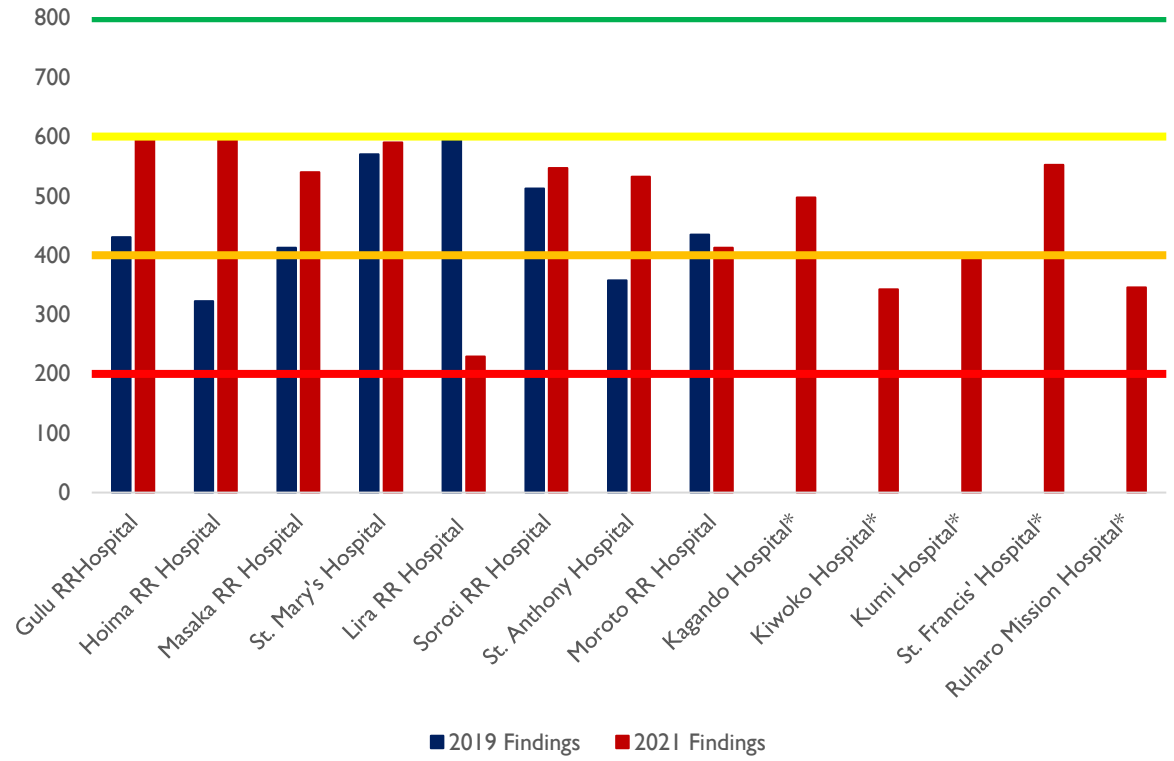
This section presents results of the assessments and progress of the intervention during FY20/21 in the 13 MTaPS-supported health facilities.

### 2.1 INFECTION PREVENTION AND CONTROL ASSESSMENT FRAMEWORK (IPCAF) SCORES

*Health facility IPC level*

Thirteen HFs were assessed. For the 2021 assessment, the average score was 476 (SD 119), which is an intermediate-level rating. Seven facilities scored at the intermediate level, two at the advanced level, and four at the basic level. Gulu and Hoima RRHs had the highest scores, while Lira RRH had the lowest score. No HF had an inadequate score for the IPC level. The scores for the 2019 national IPC survey and the 2021 assessment are shown in figure 2.

**Figure 2: IPCAF scores and levels for the 2019 survey and 2021 assessment**




**HFs that did not participate in the 2019 survey, so no comparison data are available*

Key:

| Total score (range) | IPC level | Marker |
|---|---|---|
| 0–200 | Inadequate | |
| 201–400 | Basic | |
| 401–600 | Intermediate | |
| 601–800 | Advanced | |

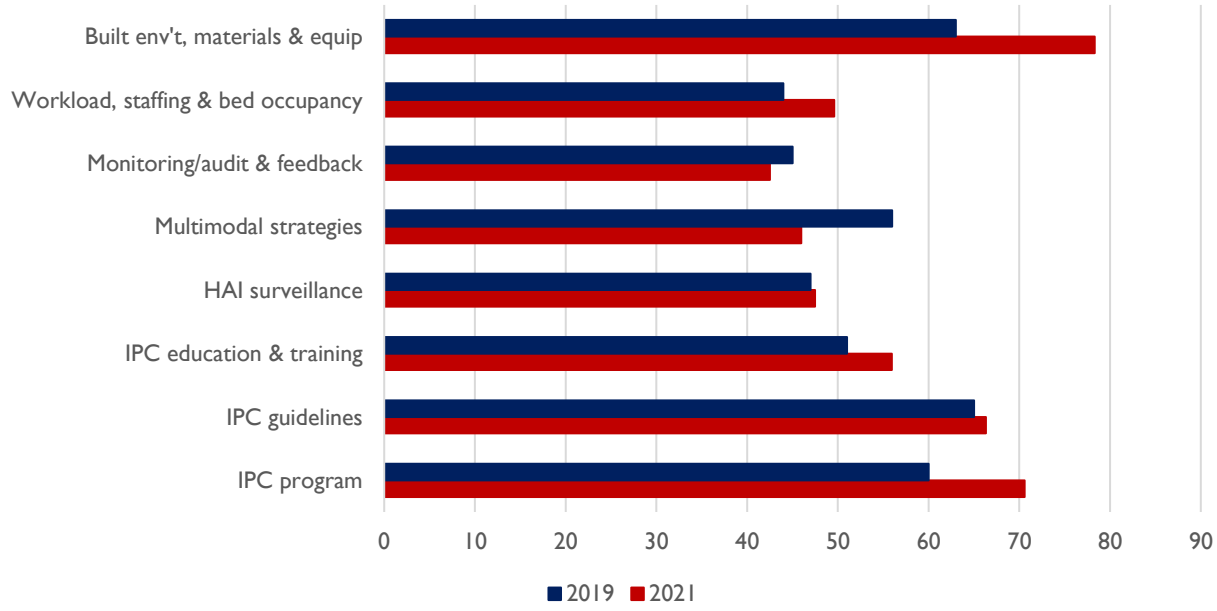
Eight of the 13 MTaPS-supported HFs were assessed in the 2019 survey, including six RRHs and two PNFP hospitals. Overall, there was an increase in average IPCAF scores of 52.6/800 between the two assessments. Of the eight HFs, six (75%) demonstrated increase in IPCAF scores, with an average increase of 134.8 (SD 97). Of these, four HFs changed their IPC level and two remained at the same IPC level despite the increase in scores. Two HFs demonstrated a decrease in scores, with an average decrease of 194 (SD 242). Lira RRH dropped from intermediate to basic IPC capacity level, while Moroto RRH maintaining the same IPC level despite a decrease in its score.

*IPC core component scores*

Figure 3 shows the scores on the eight core components for the 2019 national IPC survey and the 2021 assessment. In 2021, the highest average score was the component *Built environment, materials, and equipment* (78.3/100) followed by *IPC program* (70.6/100) and *IPC guidelines* (66.3/100). *Monitoring/audit & feedback of IPC practices* had the lowest average score (42.5/100), followed by *Multimodal strategies* (45.9/100) and *HAI surveillance* (47.5/100). Half of the eight core components had scores above 50/100. The detailed component scores for each HF are shown in Appendix 1.

There was a demonstrable increase in the average scores in six core components, with an average increase of 3.4/100 (SD 7.8). The biggest increase was demonstrated in *Built environment, materials, and equipment* (15.3/100), followed by *IPC program* (10.5/100). The two components that demonstrated a decrease had an average reduction of 6/100 (SD 5.7), with the biggest reduction observed in *Multimodal strategies* (10/100).

**Figure 3: IPC core component average scores for the 2019 survey and 2021 assessment**




*Comparison of IPCAF performance between public and PNFP HFs*

Six public (government) HFs (RRHs) and seven PNFP HFs were assessed with the IPCAF tool. On average, public HFs performed a little better than PNFP HFs (figure 4), with public HFs having an average IPCAF score of 489/800 (intermediate IPC level) compared to the average PNFP HF score of 465.14 (intermediate IPC level). Among the public HFs, two scored at advanced IPC level, three at intermediate IPC level, and one at basic IPC level. Four PNFP HFs had an intermediate IPC level score, three had a basic IPC level score, and none had an advanced IPC level score. Figure 4 shows the IPC levels of public and PNFP HFs.

**Figure 4: Average IPCAF scores (IPC level) of government and PNFP HFs**

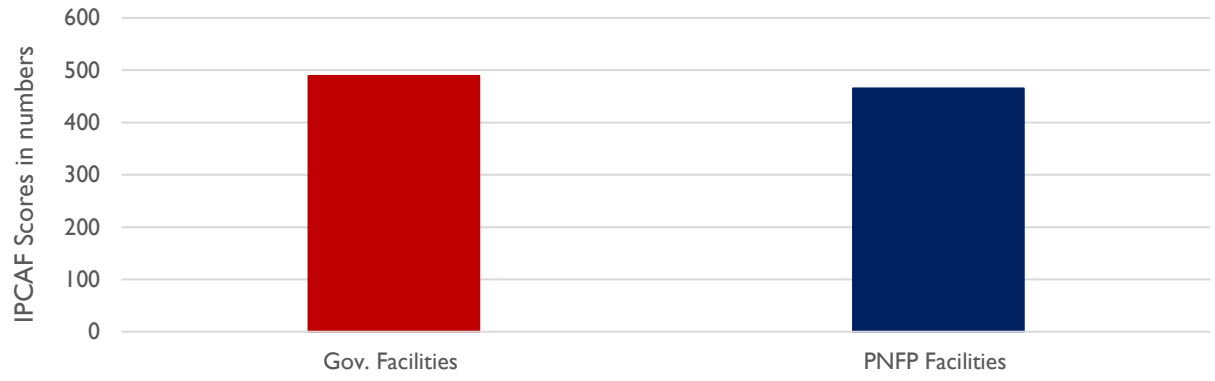
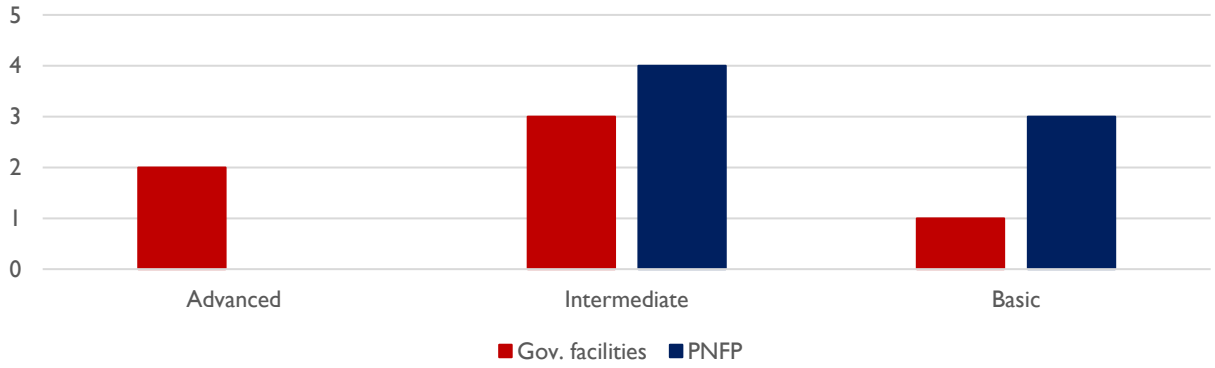



**Figure 5: Summary of IPCAF performance for public and PNFP HFs**



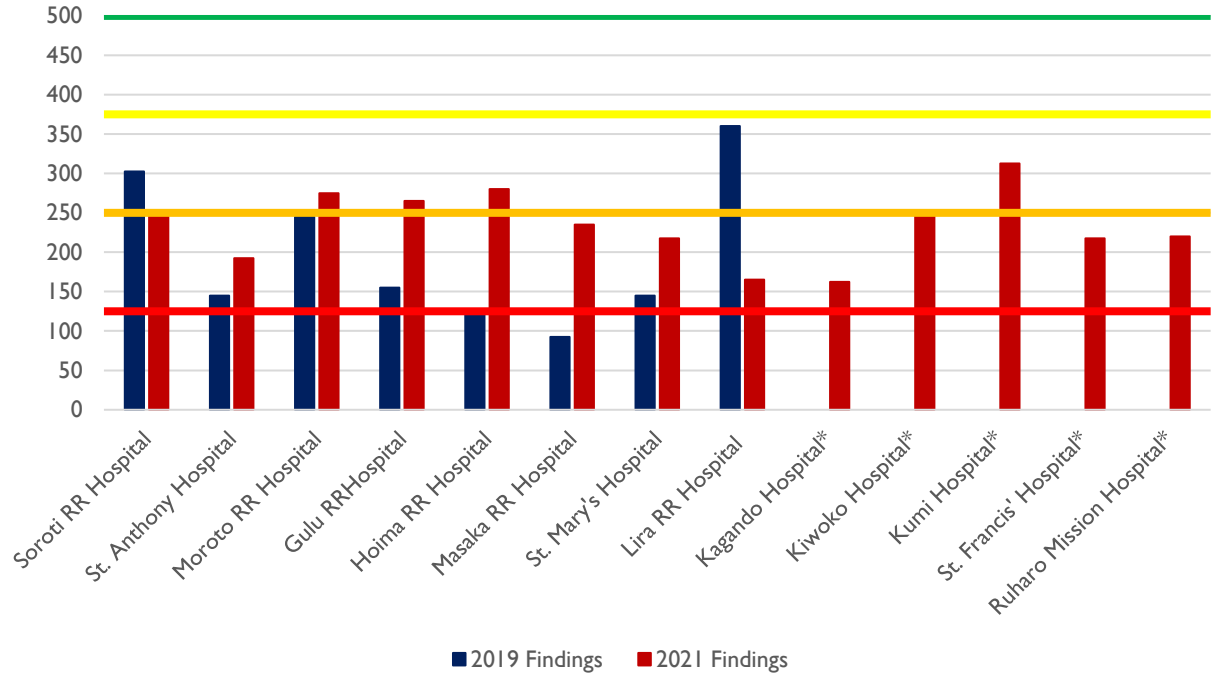

## 2.2 HAND HYGIENE SELF-ASSESSMENT FRAMEWORK (HHSAF) SCORES

*Health facility hand hygiene level*

Thirteen HFs were assessed. For the 2021 assessment, the performance of HFs on the HHSAF tool was generally poor, with an average score of 234.4 (SD 44.7), which is the basic level. Seven facilities scored at the intermediate level, and the rest scored at the basic level. Kumi Hospital had the highest score, while Kagando Hospital had the lowest score. The scores for the 2019 national IPC survey and 2021 assessment are shown in figure 5.

A comparison of HHSAF scores between the 2019 national IPC survey and the 2021 assessment is shown in figure 5. Eight of the 13 MTaPS-supported HFs were assessed in the 2019 survey, including six RRHs and two PNFP hospitals. Overall, there was an increase of 38/500 in average HHSAF scores between the two assessments. Of the eight HFs, six (75%) demonstrated an increase in HHSAF scores, with an average increase of 93 (SD 51). Of these, four HFs changed HH levels (from basic to intermediate) and two remained at the same HH level despite the increase in scores. Two HFs demonstrated a decrease in scores, with an average reduction of 122.5 (SD 103). Lira RRH dropped from intermediate to basic HH level and Soroti RRH maintaining the same HH level despite a decrease in score.

**Figure 1: HHSAF scores and levels for the 2019 survey and 2021 assessment**




**HFs that did not participate in the 2019 survey, so no comparison data are available*

Key

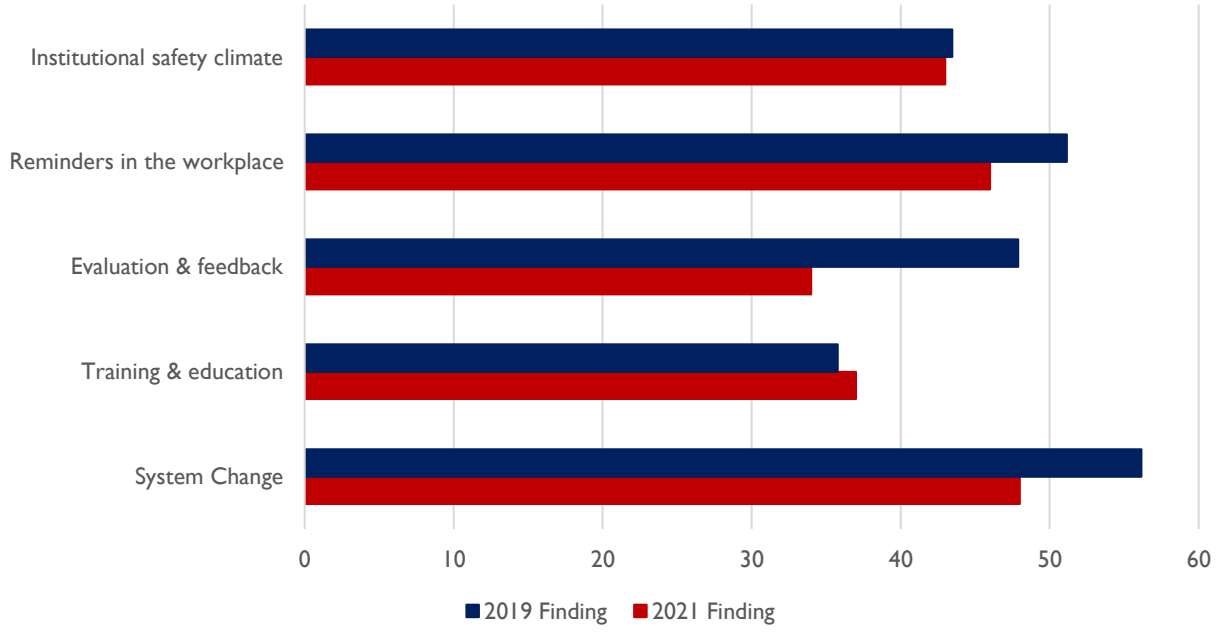
| Total score (range) | HH level | Marker |
|---|---|---|
| 0–125 | Inadequate | |
| 126–250 | Basic | |
| 251–375 | Intermediate | |
| 376–500 | Advanced | |

### *HHSAF multimodal strategies (elements) scores*

Figure 6 shows the average scores of the HHSAF elements for the assessed HFs for the 2019 and 2021 assessments. Only two elements had 2021 scores above 50/100, with the highest score being *System change* (56/100) followed by *Reminders in the workplace* (51/100). *Training & education* had the lowest score (35.8/100) followed by *Institutional safety climate for HH* (43.5/100) and *Evaluation & feedback* (48/100). The detailed element scores for the HFs are shown in Appendix 2.

A comparison of the average scores of the five multimodal strategies (elements) between the 2019 national IPC survey and the 2021 assessment showed a demonstrable reduction in the average scores of three elements, with the average decrease of 5.2/100 (SD 4.6). The biggest reduction was demonstrated in *Evaluation & feedback* (14/100), followed by *System change* (8/100) and *Reminders in the workplace* (5/100). Only *Training and education* demonstrated a very slight increase of 1/100 in the average score between the two assessments. The average score for *Institutional safety climate* remained the same between the two surveys.

**Figure 2: Comparison of HHSAF MMS (elements) average scores between the 2019 survey and 2021 assessment**




*Comparison of HHSAF performance between public and PNFP HFs*

Six public (government) HFs (RRHs) and seven PNFP HFs were assessed with the HHSAF tool. Despite public HFs having a higher average score than PNFP HFs (figure 7), the difference is not significant. Public HFs had an average HHSAF score of 245/500 (basic HH level) compared to the score of 237/500 (basic HH level) for the PNFP HFs. Among the public HFs, five scored at intermediate HH level and one scored at basic HH level. Two PNFP HFs had intermediate HH scores and five had basic IPC level scores. No HF scored at advanced HH level.

**Figure 3: Average HHSAF scores (HH level) of government and PNFP HFs**

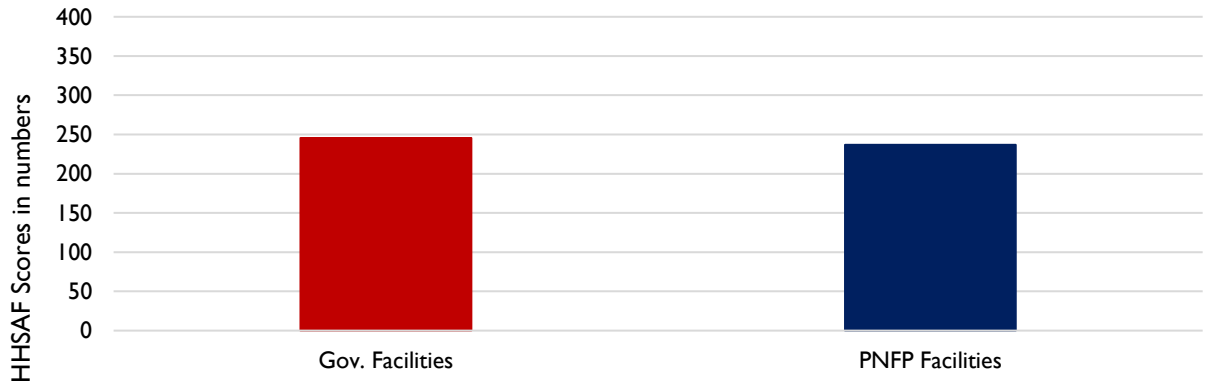
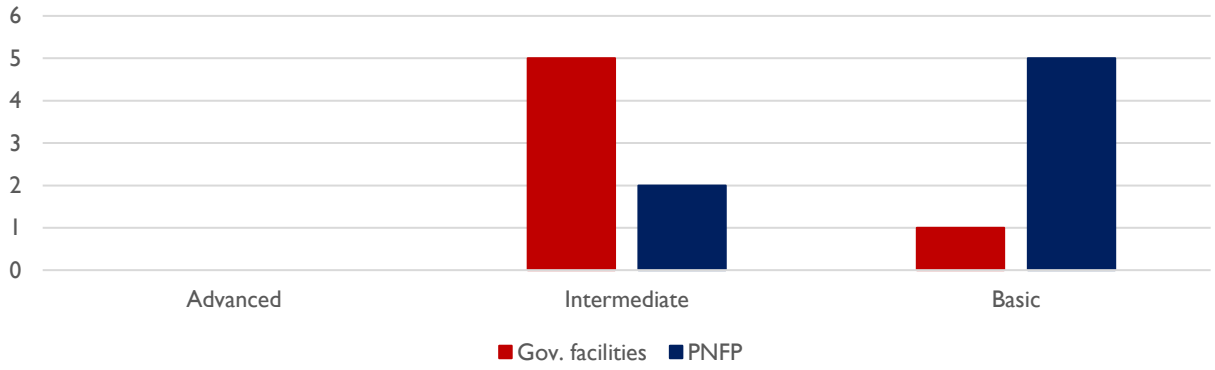



Figure 8 shows the HH levels of public and PNFP HFs.

**Figure 4: Summary of IPCAF performance for public and PNFP HFs**

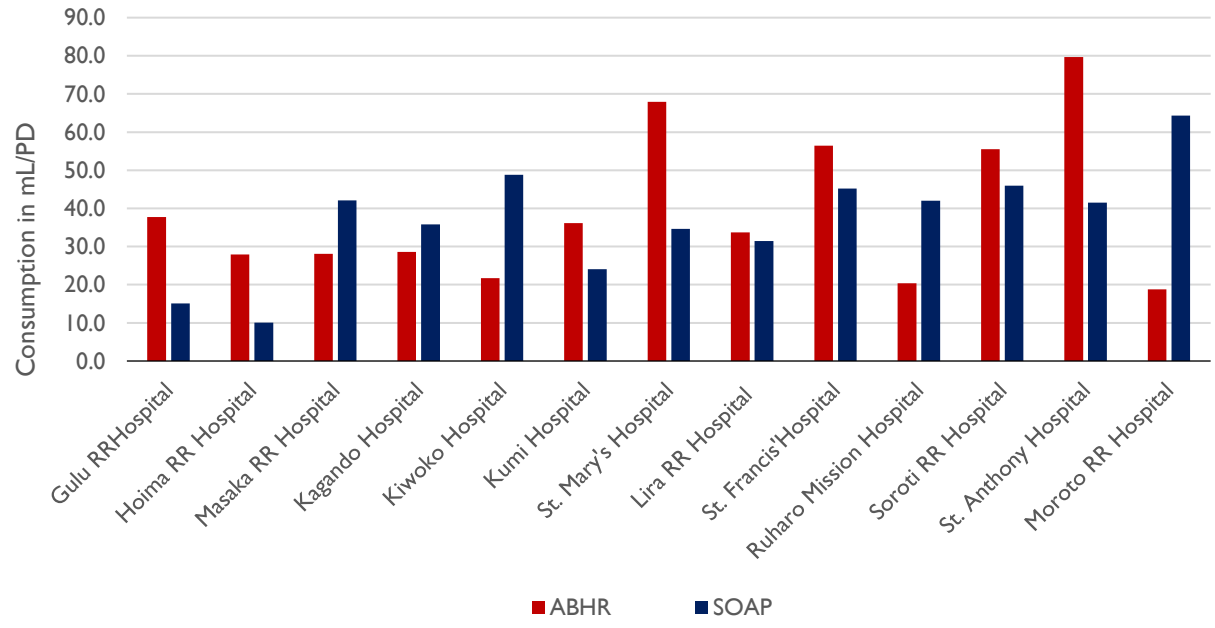



## 2.3 HAND-RUB AND SOAP CONSUMPTION

The consumption of ABHR and soap for the 13 HFs was assessed using the WHO Soap/Hand rub consumption survey tool. All facilities had a central purchasing unit but differed in frequency of ordering. Two facilities do monthly orders, six place orders after two months, and three place orders on a quarterly basis. The facilities' average consumption for hand rub and soap was 39.4mL/PD (SD 19.4) and 39.9mL/PD (SD 14.5), respectively. All facilities used both hand rub and the soap simultaneously but in differing volumes (figure 9).

PNFP HFs consume more ABHR than public HFs; the average consumption of ABHR in public and PNFP HFs is 33.6mL/PD (SD 12.5) and 44.4mL/PD (SD 23.7), respectively. Similarly, PNFP HFs consume more soap than public HFs, with average consumption of 38.9mL/PD (SD 8.2) and 34.8mL/PD (SD 20.3), respectively.

**Figure 5: Consumption of ABHR and soap in the assessed facilities**



## 2.4 HEALTH CARE WORKERS' KNOWLEDGE ASSESSMENT

*Participant demographics*

MTaPS assessed the knowledge of 130 HCWs (58% female and 42% male) involved in direct patient care using the WHO Hand Hygiene Knowledge Questionnaire for Health-Care Workers. Most respondents were nurses (43%), followed by laboratory technicians (12%), midwives (9%), and doctors (7%). Other cadres comprised 29% (figure 10).

*Health care workers' knowledge on hand hygiene*

The average scores of HCW knowledge on HH are shown in figure 11. The average score for all participants was 44.2% (SD 10.9) with St. Mary's Hospital having the highest average score (62.5%), followed by Moroto RRH (60%) and Hoima RRH (53.6%). Soroti RRH had the lowest average score (28.8%), followed by St. Anthony's Hospital (31.2%), Kumi Hospital and Lira RRH both had an average score of 32.5%. Only three HFs had an average score above 50%.

The knowledge of HCWs positively correlated with the HHSAF and IPCAF scores, with a correlation co-efficiency of 0.144 and 0.3, respectively. However, the results also showed that there was a negative correlation between HH knowledge and consumption of ABHR of -0.155 as shown in table 3.

**Table 3: Correlation co-efficiencies between HCW knowledge, ABHR, HHSAF, and IPCAF**

| | HHSAF | HCW Knowledge | IPCAF | ABHR consumption |
|---|---|---|---|---|
| **HHSAF** | 1.0000 | 0.1442 | - | - |
| **HCW Knowledge** | 0.1442 | 1.0000 | 0.2996 | – 0.1551 |
| **IPCAF** | - | 0.2996 | 1.000 | - |
| **ABHR consumption** | - | – 0.1551 | - | 1.000 |

**Figure 6: Composition of HCWs involved in the assessment of knowledge on HH, disaggregated by cadre**

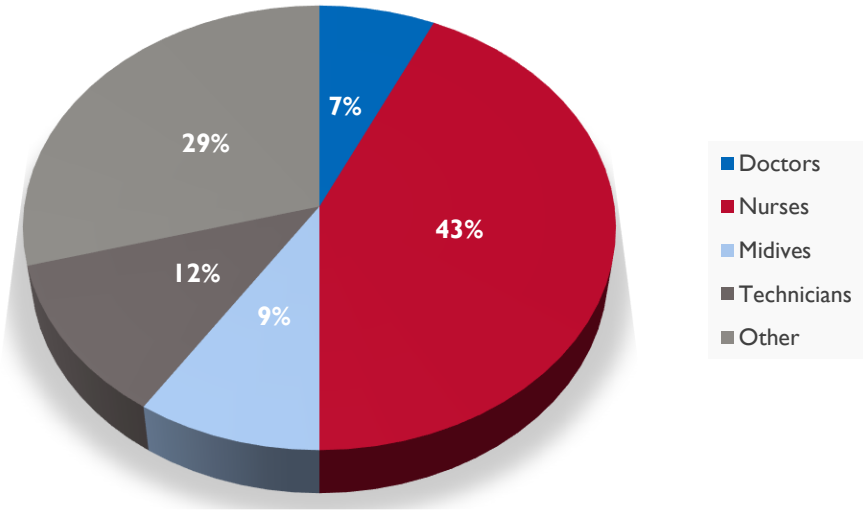
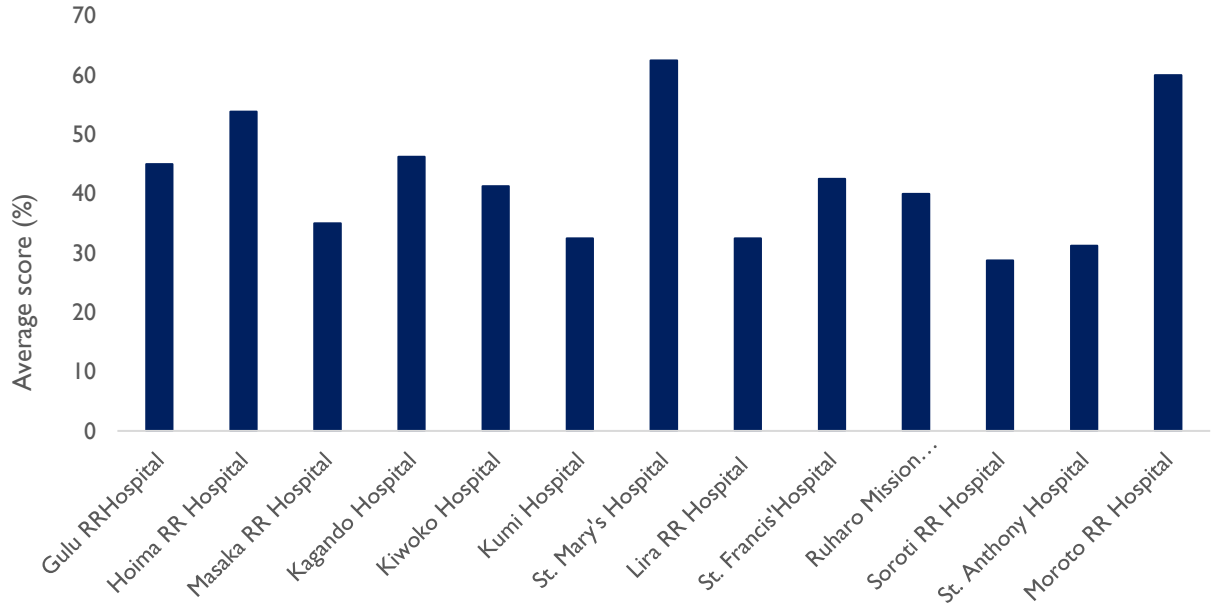


**Figure 7: Average scores of HCW knowledge on HH among HCW in the assessed facilities**




## 2.5 HEALTH CARE WORKER PERCEPTIONS ON HAND HYGIENE

MTaPS assessed HH perception of 130 HCWs (58% female, 42% male) involved in direct patient care using the WHO Perception Survey for HCWs questionnaire.

Only 68% of respondents had received formal training on HH in the past three years, and 97% routinely use ABHR for HH. Among the respondents, 37 (28.5%) said they do not know the percentage of hospitalized patients who would develop an HAI, while the rest reported an average of 30% (SD 25.5) of patients.

The perception of the different aspects of HH was also assessed. MTaPS encoded every categorical score with a numerical score in percentages (table 4) and calculated the percentage score for each aspect (table 5).

**Table 4: How the categorical scores were encoded with numerical scores**

| Categorical score | | Very low | Low | Moderate | High | Very high |
|---|---|---|---|---|---|---|
| Numerical score | Impact of a health care-associated infection on a patient's clinical outcome | 25% | 50% | | 75% | 100% |
| | Effectiveness of hand hygiene in preventing health care-associated infections | 25% | 50% | | 75% | 100% |
| | How important is hand hygiene at your institution? | | 25% | 50% | 75% | 100% |

On average, HCWs believe that the impact of HAIs on a patient's clinical outcome is 63.2%, HH is 83.2% effective in preventing HAIs, and the importance of HH at their HFs is 81.7%.

**Table 5: Scores on different aspects on hand hygiene in the assessed facilities as provided by HCWs**

| Aspect | Number of HCWs that responded to the aspect | | | | | Average % score for the aspect |
|---|---|---|---|---|---|---|
| | Very low | Low | Moderate | High | Very high | |
| Impact of a health care-associated infection on a patient's clinical outcome | 21 | 41 | | 46 | 22 | 63.2% |
| Effectiveness of hand hygiene in preventing health care-associated infection | 6 | 6 | | 57 | 61 | 83.2% |
| How important is hand hygiene at your institution? | | 4 | 14 | 55 | 57 | 81.7% |

Twenty-one respondents reported that they did not know the HH compliance of HCWs in their HFs. Those that did reported an average compliance of 75%.

HCWs also rated the perceived effectiveness of different suggested aspects on permanently improving HH in the facilities (table 6).

**Table 6: Scores of the perceived effectiveness of different aspects in improving hand hygiene compliance permanently in facilities**

| Aspect | Score (%) |
|---|---|
| Leaders and senior executive managers at your facility support and openly promote hand hygiene | 83.4 |
| The health care facility makes alcohol-based hand rub available at each point of care | 84.7 |
| Hand hygiene posters are displayed at points of care as reminders | 79.6 |
| Each health care worker receives education on hand hygiene | 79.6 |
| Clear and simple instructions for hand hygiene are made visible for every health care worker | 78.9 |
| Health care workers regularly receive the results of their hand hygiene performance | 59.5 |
| Senior nurses and doctors perform hand hygiene adequately | 85.4 |
| Patients are invited to remind health care workers to perform hand hygiene | 40.8 |

The HCWs reported the importance stakeholders (departmental heads, colleagues, and patients) attach to different aspects of HH (table 7).

**Table 7: The importance stakeholders attach to hand hygiene aspects**

| Aspect | Importance (%) |
|---|---|
| What importance does the head of your department attach to the fact that you perform optimal hand hygiene? | 77.8 |
| What importance do your colleagues attach to the fact that you perform optimal hand hygiene? | 75.9 |
| What importance do patients attach to the fact that you perform optimal hand hygiene? | 64.8 |

HCWs scored the effort required to perform HH promptly during patient care at an average of 82.9%, indicating too much effort required, and that their self-reported compliance is 81.4% on average.

The perceptions of both HCWs and senior managers negatively correlated with the HHSAF scores, with a correlation co-efficiency of -0.277 and -0.073, respectively, as in table 8.

**Table 8: Correlation co-efficiencies between HHSAF and HCW perception**

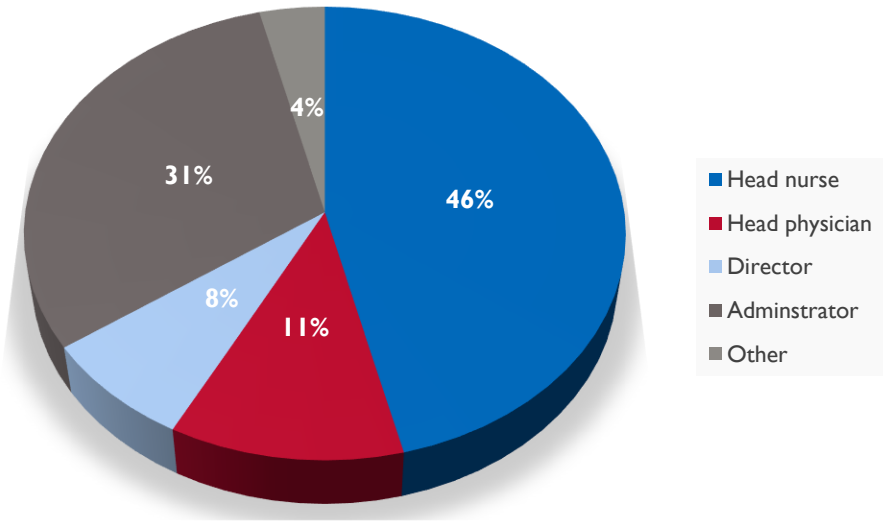
| | HHSAF | HCW perception |
|---|---|---|
| **HHSAF** | 1.000 | – 0.2769 |
| **HCW perception** | – 0.2769 | 1.000 |

## 2.6 SENIOR MANAGERS' PERCEPTION ON HAND HYGIENE

*Participant demographics*

MTaPS assessed the knowledge of 26 senior managers (46% female, 54% male) in the 13 HFs using the WHO Perception Survey for Health-Care Workers questionnaire. Most of the surveyed senior managers were head nurses (46%), followed by administrators (31%), head physicians (11%), and hospital directors (8%). Other cadres were 4% (figure 12).

**Figure 8: Composition of senior managers involved in the assessment disaggregated by positions**




All senior managers agreed that they had had previously experienced an HH campaign in their facilities and that they have alcohol-based formulations for HH. Eleven respondents did not know the percentage of hospitalized patients who would develop a HAI while in their facility. The rest of the respondents reported an average of 20.79% (SD 0.25) of patients developing HAIs.

The senior managers' perception of different aspects of HH was also assessed (table 9). MTaPS encoded every categorical score with a numerical score in percentages (table 10) and calculated the percentage score for each aspect (table 11).

**Table 9: How the categorical scores were encoded with numerical scores**

| Categorical score | | Very low | Low | Moderate | High | Very high |
|---|---|---|---|---|---|---|
| Numerical score (%) | Impact of a health care-associated infection on a patient's clinical outcome | 25% | 50% | | 75% | 100% |
| | The impact of a health care-associated infection on facility expenditures | 25% | 50% | | 75% | 100% |
| | The effectiveness of hand hygiene in preventing health care-associated infection | 25% | 50% | | 75% | 100% |
| | How important is hand hygiene within your management's priorities at your facility? | | 25% | 50% | 75% | 100% |

On average, senior managers believe that the impact of HAIs on a patient's clinical outcome is 68.3%, the impact of HAIs on facility expenditures is 68.3%, HH is 88.5% effective in preventing HAIs, and the importance of HH in managerial priorities is 82.7%.

**Table 10: Scores on different aspects on hand hygiene in the assessed facilities as provided by senior managers**

| No. | Aspect | Very low | Low | Moderate | High | Very high | Percentage (%) |
|---|---|---|---|---|---|---|---|
| 1 | Impact of a health care-associated infection on a patient's clinical outcome | 2 | 7 | | 13 | 4 | 68.3% |
| 2 | The impact of a health care-associated infection on facility expenditures | 2 | 5 | | 17 | 4 | 68.3% |
| 3 | The effectiveness of hand hygiene in preventing health care-associated infection | 0 | 0 | | 12 | 14 | 88.5% |
| 4 | How important is hand hygiene within your management's priorities at your facility? | | 0 | 4 | 10 | 12 | 82.7% |

Five senior managers reported not knowing HH compliance for HCWs in their HFs; however, those that responded reported an average compliance of 66.9%. Additionally, 77% of these senior managers reported that it is common practice to inform patients about the importance of optimal HH during health care delivery.

**Table 11: How senior managers scored the performance of their facilities on aspects that increase compliance with hand hygiene**

| Aspect | Percentage scores |
|---|---|
| Senior nurses and doctors set good examples for the promotion of hand hygiene | 73% agreed |
| The effort required by health care workers to perform good hand hygiene when caring for patients at your facility | 75% noted effort is needed |
| How do health care workers perceive your request to perform optimal hand hygiene during patient care at your facility? | 88% said it is of importance |

The managers scored the effectiveness of different aspects in improving HH compliance permanently in facilities (table 10).

**Table 12: Effectiveness of different aspects in improving hand hygiene compliance permanently in facilities**

| Aspect | Percentage scores |
|---|---|
| Leaders and senior executive managers (you) at your facility support and openly promote hand hygiene | 96 |
| The health care facility makes alcohol-based hand rub available at each point of care | 94 |
| Hand hygiene posters are displayed at points of care as reminders | 82 |
| Each health care worker receives education on hand hygiene | 90 |
| Clear and simple instructions for hand hygiene are made visible for every health care worker | 84 |
| Health care workers regularly receive the results of their hand hygiene performance | 66 |
| Senior nurses and doctors perform hand hygiene adequately | 88 |
| Patients are invited to remind health care workers to perform hand hygiene | 58 |

The perceptions of the senior managers at facilities negatively correlated with the HHSAF scores, with a correlation co-efficient of -0.073 as shown in table 13.

**Table 13: Correlation co-efficiencies between HHSAF and senior managers' perception**

| | HHSAF | Sen. Managers' perception |
|---|---|---|
| **HHSAF** | 1.000 | – 0.0734 |
| **Sen. Managers' perception** | – 0.0734 | 1.000 |

There was a positive correlation between the perception on the effectiveness of HH on reducing HAIs between the HCWs and senior managers. The results also showed that there was a positive correlation between senior manager perception and HCW perception (0.246) and knowledge (0.269) (table 14).

**Table 14: Correlation co-efficiencies between HCW & senior managers' perception and HCW knowledge**

| | HCW Perception | Sen. Managers' perception | HCW knowledge |
|---|---|---|---|
| **HCW Perception** | 1.000 | 0.2463 | 1.000 |
| **Sen. Managers' perception** | 0.2463 | 1.000 | 0.2689 |

# DISCUSSION

To our understanding, this approach represents one of the first comprehensive applications of these WHO tools on this broader scale, covering both public and PNFP HFs. MTaPS supported HFs to conduct a comprehensive assessment of IPC and HH, which has delivered valuable insight into the state of implementation of key IPC and HH structures and processes in Uganda. The data demonstrated some improvements in IPC implementation in MTaPS-supported HFs. This improvement was generally expected due to efforts by MTaPS to support the IPC structures in these HFs since 2019.

In a study conducted last year in one of the country's teaching hospitals,[12] the IPC compliance score based on the IPCAF tool was 225/800, which is close to the lowest score in the assessed facilities. Both facilities—the one assessed in this previous study (Lira University Hospital) and the lowest-scoring facility in our assessment—are in the same region, indicating a call for improved activities in this region. MTaPS will work with the regional implementing partner in FY22 to provide technical assistance to strengthen IPC practices in this region.

The MTaPS study observed generally low performance on the HHSAF for all HFs. This poor performance was reflected in all HHSAF multimodal strategies (elements) aside from *System change*. The better performance for this element can be attributed to the recent increase in HH supplies by different partners in the fight to combat COVID-19. The low scores on *Training and education* were mainly due to the absence of WHO standard documents, which MTaPS was able to supply after the assessments. Similarly, the highest scoring component was *Systems change* in the MTaPS-supported Uganda National IPC survey of 2019.

[12] https://research.itg.be/en/publications/infection-prevention-and-control-at-lira-university-hospital-ugan

Previous studies have highlighted HH education and training as one of the major factors affecting IPC practices in Africa.[13] Therefore, MTaPS has embarked on rolling out HH education and training activities in the supported health facilities, targeting all HCWs. This will be implemented with other interventions, including those aimed at improving the use of antibiotics for surgical prophylaxis and AMS. The overall objective is to reduce HAIs and combat AMR.

Average ABHR consumption is high and almost double the average consumption from a similar study conducted in in 232 European hospitals, which reported an average consumption of 21mL/PD[14] (Hansen et al. 2015). This could be due to interventions for mitigating the spread of COVID-19 in HFs, low bed occupancy rates due to limitations of movement in Uganda following COVID-19-related restrictions, or misuse of ABHR in the assessed facilities. This is coupled with the fact that ABHR use is not linked to patient care (it is used by staff even when at home and by students and support staff), which inflates the consumption from the store/pharmacy. This is also evident in the relatively low knowledge (44.2%) among HCWs. In the assessed facilities, soap was mainly used by patients and caregivers. Compared with a recent study on HH among caregivers, there has been an increase in the usage of soap among facility attendants.[15] The results showed that HHSAF scores had a negative correlation with ABHR and soap consumption. This is in contrast to findings in a similar study that showed HHSAF scores correlated with ABHR consumption.[16.] However, this is expected given that HCWs also had a relatively low average score on knowledge. Overall, ABHR was used more than soap for HH because ABHR is well tolerated by the skin, quicker to use, does not require drying materials, and can be made available at the point of care.[17]

The results of the assessment of HCW knowledge on HH were consistent with findings in similar studies conducted in Uganda.[18] These findings are also consistent with findings from Kenya[19] (Bedoya et al. 2017). Various studies in Africa have continued to show that there is inadequate knowledge on HH, and more efforts are required to address the challenge[20] (Tenna et al. 2013). The education and training efforts that MTaPS has embarked on will specifically target HCWs to increase their knowledge about HH, HAIs, and AMR.

The findings of the assessment of the perception of HCWs and senior managers on HH are in tandem with results from other studies, which may suggest that involvement of administrators and senior personnel in HH by supporting and being good examples will improve facility HH compliance[21](Abd Elaziz and Bakr 2009). Similar to our findings, studies also suggest that there is less engagement of patients and caregivers in proper hygiene by HCWs.[22.] The results still suggest a complex partnership between caregivers and HCWs on improving HH, even when the structures are favorable. In a previous study, the self-reported compliance in one of the assessed facilities was 63%, and improvement over

[13] https://pubmed.ncbi.nlm.nih.gov/26170127/
[14] https://pubmed.ncbi.nlm.nih.gov/26417851/
[15] https://www.researchgate.net/publication/339146130_Assessing_Knowledge_Attitudes_and_Practice_of_Hand_Washing_with_Soap_among_Mothers_and_Caregivers_of_Children_under_Five_years_in_Ntungamo_District_Uganda
[16] https://academic.oup.com/eurpub/article-abstract/30/Supplement_5/ckaa166.695/5915997
[17] https://pubmed.ncbi.nlm.nih.gov/31189085/
[18] https://journal.cosecsa.org/index.php/ECAJS/article/view/20190041
[19] https://pubmed.ncbi.nlm.nih.gov/28670015/
[20] https://pubmed.ncbi.nlm.nih.gov/24225614/
[21] https://pubmed.ncbi.nlm.nih.gov/19771756/
[22] https://pubmed.ncbi.nlm.nih.gov/19628304/

time could be related to previous efforts in the facility by MTaPS.[23] The results also correlate with self-reported compliance in a similar study.[24]

# CHALLENGES AND WAY FORWARD

## CHALLENGES

MTaPS has faced the following challenges with IPC implementation:

- In some of the HFs, there was a lack of continuous availability of IPC supplies, mainly ABHR and soap. This was because the central distribution unit practiced uniform distribution of the supplies to all units, yet some units needed more supplies than others due to differences in workloads. MTaPS' support does not include the purchase of IPC and HH products for HFs.
- In some facilities, the administration was not very cognizant of the budgetary needs for IPC materials and supplies. This led to constant shortages of these supplies, making adherence to IPC practices among HCWs difficult. Additionally, some IPC committees reported that they are not approached or consulted during budgeting and planning, resulting in deficits in the funding of IPC structures and practices as the people doing the budgeting are not aware of the needs.
- The HFs lack the necessary IT infrastructure to support online trainings and remote mentorship. MTaPS' support does not include the purchase of IT equipment to boost the infrastructure.

MTaPS' proposed solutions to these challenges are shown in table 15.

**Table 15: Possible solutions to the challenges faced during activity implementation**

| Challenge | Solution |
|---|---|
| Shortages in IPC supplies following uniform supply of supplies and materials to all units | IPC teams to study the consumption and use of IPC supplies, including root cause analysis in the hospitals, and:<br>▪ Disseminate results (feedback) to hospital staff<br>▪ Make recommendations to the IPC committee<br>▪ Coordinate the implementation of IPC committee resolutions |
| Budgetary needs for IPC materials and supplies overlooked when preparing health facility budgets | IPC committees to work with all stakeholders involved in the budgeting processes to promote adequate resourcing for IPC |
| HFs lack the necessary IT infrastructure to support online trainings and remote mentorship | IPC committees to engage regional implementation partners who have relevant funding to support the provision of the necessary IT infrastructure at the HFs |

## WAY FORWARD

Following this assessment, MTaPS had a data dissemination session to share these findings with senior managers and HCWs at the facilities. During the sessions, the facilities were able to understand their scores for the assessed indicators. In addition, MTaPS organized a two-day offsite training session for 40 participants from the eight assessed PNFPs to provide further training on HH. During the session,

[23] http://dspace.ciu.ac.ug/handle/123456789/1035
[24] https://pubmed.ncbi.nlm.nih.gov/20436062/

MTaPS worked with participants and used the assessment findings to conduct a root cause analysis and suggested interventions that were summed up into CQI plans focused on improving HH.

In FY22, MTaPS will continue to support these facilities to achieve full status of Centers of Excellence in IPC. In addition, MTaPS will continue supporting the implementation of the CQI plans, and the results from the implementation will be summarized in a technical brief. MTaPS will focus on priority indicators shown in table 16.

**Table 16: Short- and long-term targets for selected indicators**

| Indicator | Short term target | End Target - 2023 |
|---|---|---|
| IPCAF | Intermediate | Advanced |
| HHSAF | Intermediate | Advanced |
| HCW knowledge on HH | Average score - 75% | Average score – 90% |

# APPENDICES

## APPENDIX 1: IPCAF SCORES FOR THE ASSESSED HEALTH FACILITIES

| Hospital name | IPC Program | IPC Guidelines | IPC Education and Training | HAI Surveillance | Multimodal Strategies | Monitoring/Audit and Feedback | Workload, Stuffing, and Bed Occupancy | Built Environment, Materials, and Equipment | Score |
|---|---|---|---|---|---|---|---|---|---|
| Gulu RR Hospital | 77.5 | 87.5 | 85 | 82.5 | 70 | 67.5 | 55 | 77.5 | 602.5 |
| Hoima RR Hospital | 80 | 85 | 75 | 65 | 45 | 45 | 60 | 85 | 540 |
| Moroto RR Hospital | 82.5 | 65 | 45 | 37.5 | 45 | 0 | 50 | 87.5 | 412.5 |
| Masaka RR Hospital | 70 | 50 | 65 | 45 | 0 | 0 | 45 | 75 | 350 |
| Lira RR Hospital | 62.5 | 40 | 50 | 12.5 | 0 | 10 | 20 | 34.5 | 229.5 |
| Soroti RR Hospital | 85 | 82 | 75 | 57.5 | 80 | 70 | 30 | 67.5 | 547 |
| St. Mary's Hospital-Lacor | 80 | 90 | 60 | 80 | 80 | 65 | 50 | 85 | 590 |
| Kiwoko Hospital | 52.5 | 47.5 | 25 | 7.5 | 40 | 37.5 | 45 | 87.5 | 342.5 |
| Kagando Hospital | 60 | 67.5 | 60 | 52.5 | 75 | 45 | 50 | 87.5 | 497.5 |
| Ruharo Mission Hospital | 65 | 40 | 30 | 5 | 50 | 37.5 | 40 | 78.5 | 346 |
| Kumi Hospital | 67.5 | 57.5 | 12.5 | 65 | 12.5 | 65 | 35 | 80 | 395 |
| St. Francis Hospital Naggalama | 50 | 82.5 | 95 | 75 | 25 | 50 | 80 | 95 | 552.5 |
| St. Anthony Hospital- Tororo | 85 | 67.5 | 50 | 32.5 | 75 | 60 | 85 | 77.5 | 532.5 |
| **Average** | **70.58** | **66.31** | **55.96** | **47.50** | **45.96** | **42.50** | **49.62** | **78.31** | **456.73** |

## APPENDIX 2: HHSAF SCORES FOR THE ASSESSED HEALTH FACILITIES

| Hospital name | System change | Training and education | Evaluation and feedback | Reminders in workplace | Institutional safety climate for hand hygiene | Total |
|---|---|---|---|---|---|---|
| Gulu RR Hospital | 30 | 55 | 65 | 50 | 65 | 265 |
| Hoima RR Hospital | 45 | 50 | 60 | 65 | 60 | 280 |
| Moroto RR Hospital | 50 | 45 | 55 | 70 | 55 | 275 |
| Masaka RR Hospital | 45 | 45 | 50 | 50 | 45 | 235 |
| Lira RR Hospital | 20 | 25 | 35 | 50 | 35 | 165 |
| Soroti RR Hospital | 40 | 45 | 42.5 | 50 | 75 | 252.5 |
| St. Mary's Hospital-Lacor | 80 | 45 | 25 | 47.5 | 20 | 217.5 |
| Kiwoko Hospital | 55 | 30 | 60 | 67.5 | 40 | 252.5 |
| Kagando Hospital | 50 | 10 | 40 | 32.5 | 30 | 162.5 |
| Ruharo Mission Hospital | 85 | 25 | 60 | 0 | 50 | 220 |
| Kumi Hospital | 85 | 35 | 80 | 77.5 | 35 | 312.5 |
| St. Francis Hospital Naggalama | 75 | 25 | 30 | 57.5 | 30 | 217.5 |
| St. Anthony Hospital- Tororo | 70 | 30 | 20 | 47.5 | 25 | 192.5 |
| **Average** | **56.15** | **35.77** | **47.88** | **51.155** | **43.46** | **234.42** |

## APPENDIX 3: ABHR AND SOAP CONSUMPTION

| | Aug-20 | | Sep-20 | | Oct-20 | | Nov-20 | | Dec-20 | | Jan-21 | | Av. Comp (mL/PD) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ABHR | Soap | ABHR | Soap | ABHR | Soap | ABHR | Soap | ABHR | Soap | ABHR | Soap | ABHR | Soap |
| Gulu RR Hospital | 33.82 | 13.53 | 32.18 | 12.87 | 40.89 | 16.36 | 35.95 | 14.38 | 39.99 | 15.99 | 43.61 | 17.45 | 37.7 | 15.1 |
| Hoima RR Hospital | 28.45 | 8.75 | 32.14 | 10.71 | 27.87 | 9.69 | 25.68 | 9.78 | 31.1 | 11.31 | 22.34 | 9.93 | 27.9 | 10.0 |
| Masaka RR Hospital | 26.54 | 39.81 | 29.88 | 44.82 | 25.83 | 38.75 | 30.34 | 45.5 | 28.08 | 42.12 | 27.68 | 41.52 | 28.1 | 42.1 |
| Kagando Hospital | 24.23 | 30.28 | 22.28 | 27.86 | 29.24 | 36.55 | 28.38 | 35.47 | 36.92 | 46.15 | 30.69 | 38.36 | 28.6 | 35.8 |
| Kiwoko Hospital | 23.03 | 51.83 | 23.45 | 52.77 | 19.14 | 43.07 | 20.93 | 47.1 | 21.69 | 48.79 | 21.92 | 49.33 | 21.7 | 48.8 |
| Kumi Hospital | 35.55 | 23.7 | 41.8 | 27.86 | 41.9 | 27.93 | 40.4 | 26.94 | 34.5 | 23 | 22.56 | 15.04 | 36.1 | 24.1 |
| St. Mary's Hospital | 73.33 | 38.02 | 64.39 | 32.58 | 60.72 | 30.36 | 66.03 | 33.82 | 74.76 | 36.94 | 68.4 | 35.91 | 67.9 | 34.6 |
| Lira RR Hospital | 32.18 | 30.03 | 35.12 | 32.78 | 30.94 | 28.88 | 34.16 | 31.89 | 34.48 | 32.18 | 35.49 | 33.12 | 33.7 | 31.5 |
| St. Francis' Hospital | 65.96 | 52.77 | 63.45 | 50.76 | 57.6 | 46.08 | 46.17 | 36.93 | 46.17 | 36.93 | 59.38 | 47.51 | 56.5 | 45.2 |
| Ruharo Mission Hospital | 22.97 | 47.47 | 26.69 | 55.16 | 16.32 | 33.73 | 20.03 | 41.39 | 18.25 | 37.71 | 17.73 | 36.64 | 20.3 | 42.0 |
| Soroti RR Hospital | 51.92 | 43.02 | 54.88 | 45.48 | 62.3 | 51.62 | 55.46 | 45.95 | 56.53 | 46.76 | 51.91 | 43.01 | 55.5 | 46.0 |
| St. Anthony Hospital | 72.4 | 37.71 | 101.27 | 52.74 | 59.48 | 30.98 | 92.49 | 48.17 | 69.36 | 36.13 | 83.19 | 43.33 | 79.7 | 41.5 |
| Moroto RR Hospital | 2.57 | 50.9 | 0 | 84.28 | 31.38 | 78.35 | 22.74 | 54.13 | 11.41 | 58.81 | 25.87 | 59.6 | 15.7 | 64.3 |