The core components of infection prevention and control programs: from guidelines to implementation in real life (Part 2)
Why IPC is so important for patient outcomes

>30% Reduction
Effective IPC programmes lead to more than a 30% reduction in HAI rates

25-57% Reduction
Surveillance contributes to a 25-57% reduction in HAIs

50% Reduction
Improving hand hygiene practices may reduce pathogen transmission in health care by 50%

13-50% Reduction
Strong IPC plans, implemented across the USA between 2008 and 2014, reduced central line-associated bloodstream infections by 50%, surgical site infections (SSIs) by 17% and MRSA bacteraemia by 13%

56% Reduction
MRSA declined by 56% over a four-year period in England in line with a national target

44% Reduction
A safety culture and prevention programme reduced SSI risk in African hospitals by 44%

80% Compliance
Between 2010 and 2015 Australia achieved and sustained 80% hand hygiene compliance in hospitals nationwide

http://www.who.int/infection-prevention/en/
WHO Guidelines on Core Components of IPC Programmes at the National and Acute Health Care Facility Level

Focus on preventing HAIs and combating AMR

Guidelines on Core Components of Infection Prevention and Control Programmes at the National and Acute Health Care Facility Level

World Health Organization


Zingg W et al. TLID 2015
Storr J et al. ARIC 2017
Presley L et al. TLID 2017
WHO core components for effective IPC programmes

- **8 Core components**
  - 8 Facility level
  - 6 National level

- **11 evidence*-based recommendations**

- **3 good practice statements**

* Evidence from LMICs:
  - 7 high-quality studies
  - 22 lower quality

R= recommendation; GPS: good practice statement
Implementation of the IPC Core Components

• The WHO CC are a **road map** to indicate how IPC can effectively prevent harm due to HAI and AMR

• **Implementation, including effective leadership**, is key to translate guidelines into practices
  
  – *not always easy and takes time*
  – **multimodal**/multidisciplinary strategies
  – monitoring approaches
  – patient-centred
  – **integrated** within clinical procedures
  – innovative and **locally adapted**
  – **tailored** to specific cultures and resource level
Main challenges to implement IPC in low- and middle-income countries

- HAIs and IPC not on the top of the national health agenda
- Gap between policy and actual implementation
- Lack of reliable data on HAIs (poor laboratory support and surveillance systems)
- Limited access to qualified and trained IPC professionals
- Limited human resources (understaffing)
- Inadequate budgets
- WASH and infrastructure gaps
- Supplies procurement challenges
- Need for adaptation or tailoring to the cultural setting and local context, and according to available resources

- Allegranzi B et al. The Lancet 2011;377:228-41
- National and facility manuals supporting the implementation resources of the WHO IPC Core Components Guidelines (http://www.who.int/infection-prevention/tools/core-components/en/)
- M. Licker et al. J Hosp Infect 2017; 85e88
IPC implementation: implications for low- and middle-income countries

**However:**

- Resources invested are worth the net gain, irrespective of the context and despite the costs incurred.
- Not all solutions require additional resources.
- Some solutions can likely be low cost and local production (e.g. alcohol-based hand rubs) should be encouraged.
- Partnerships or partners’ collaborations could assist in the achievement of the core components delivery and funding.
Damani highlights three approaches to improve IPC in settings with limited resources:

- focus on improving **no-cost** practices
- focus on improving **low-cost** practices
- stop wasteful and unnecessary practices.

These three approaches have the potential to save money, time and improve the quality and safety of health care.

[http://www.who.int/infection-prevention/tools/core-components/cc-implementation-guideline.pdf?ua=1](http://www.who.int/infection-prevention/tools/core-components/cc-implementation-guideline.pdf?ua=1)
Reflections on IPC core components - Region of the Americas

Major **challenges** in providing IPC support and making progress

<table>
<thead>
<tr>
<th>Core Component</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – IPC programmes</td>
<td>• Political commitment for IPC in MoH &lt;br&gt;• Organized and functional IPC program at the hospital level &lt;br&gt;• Weak National IPC program</td>
</tr>
<tr>
<td>2 – IPG guidelines</td>
<td>• Implementation science and knowledge transfer needed</td>
</tr>
<tr>
<td>3 – IPC education and training</td>
<td></td>
</tr>
<tr>
<td>4 – Surveillance</td>
<td>• Surveillance data – lack of standards and trendlines &lt;br&gt;• Laboratory support &lt;br&gt;• No readiness &lt;br&gt;• Improper sample collection &amp; data misinterpretation</td>
</tr>
<tr>
<td>5 – Multimodal strategies</td>
<td>• Not understood</td>
</tr>
<tr>
<td>6 – Monitoring/ audit of IPC practices and feedback</td>
<td>• M&amp;E of IPC Program &lt;br&gt;• M&amp;E culture / environment</td>
</tr>
<tr>
<td>7 – Workload, staffing and bed occupancy</td>
<td>• Trained Human Resources – National and Hospital – &lt;br&gt;• High turnover of HCW</td>
</tr>
<tr>
<td>8 – Built environment, materials and equipment for IPC at the facility level</td>
<td>• Funds not allocated</td>
</tr>
</tbody>
</table>
Translating guidelines to action
Implementation resources for the WHO
IPC Core Components Guidelines

http://www.who.int/infection-prevention/tools/core-components/en/
The implementation approach

WHO Guidelines → Implementation packages → National → Health facility → 5-Step implementation cycle → IPCAT2 → IPCAF
Implementation manual and assessment tool for the national level

http://www.who.int/infection-prevention/tools/core-components/en/
Implementation manual and assessment framework for the health facility level

- Based on **qualitative analysis** of examples of IPC implementation in low-resource settings
- **29 interviews** with IPC professionals from low-resource settings analysed using a **qualitative inductive thematic approach**
- Identification of **common IPC implementation themes** (appearing ≥4 times) for IPC professionals to consider (according to the 8 WHO IPC core components) and **lessons learned**

http://www.who.int/infection-prevention/tools/core-components/en/
New IPC facility-level assessment tool

Structured, closed-formatted questionnaire with an associated scoring system based on the HHSASF approach; 81 indicators

Self- or joint-assessments

Template for data interpretation, discussion and action planning

Tested for usability, reliability and construct validity in a sample of 181 acute health care facilities in 46 countries across the world

http://www.who.int/infection-prevention/tools/core-components/en/
Highlights from part III
Stepwise approach

Step 1: Preparing for action
Step 2: Baseline assessment
Step 3: Developing and executing the plan
Step 4: Evaluating impact
Step 5: Sustaining the programme over the long-term

Multimodal improvement strategy embedded within each step in the cycle of continuous improvement
The 5-Step approach to IPC improvement

**Step 1. Preparing for action:** This step ensures that all of the prerequisites that need to be in place for success are addressed, including the necessary resources (human and financial), infrastructures, planning and coordination of activities and the identification of roles and responsibilities (including key opinion leaders and champions). The facility senior managers/leaders play a critical role in this step.

**Step 2. Baseline assessment:** Conducting an exploratory baseline assessment of the current situation, including the identification of existing strengths and weaknesses, is critical for developing a tailor-made action plan that addresses the reality of a health care facility. A ready-to-use assessment tool based on the WHO IPC core components is available for step 2 (WHO IPC Assessment Framework [IPCAF]). Ideally, additional IPC assessment tools (for example, the Hand Hygiene Self-assessment Framework [HHSAF] and/or observation-based tools to evaluate IPC practices) could be used.

**Step 3. Developing and executing an action plan:** The results of the baseline assessment support the development and execution of an action plan based around a multimodal improvement strategy.

**Step 4. Assessing impact:** Conducting a follow-up assessment using the same tools as in step 2 is crucial to determine the effectiveness of the plan. The focus is on impact, acceptability and cost-effectiveness.

**Step 5. Sustaining the programme over the long term:** An important step in the cycle of improvement is to develop an ongoing action plan and review schedule to support the long-term impact and benefits of the IPC programme, thus contributing to its overall impact and sustainability.
The step-wise approach

**Step 1** Preparing for action

**Step 2** Baseline assessment

**Step 3** Developing and executing the plan

**Step 4** Evaluating impact

**Step 5** Sustaining the programme over the long-term

Multimodal improvement strategy embedded within each step in the cycle of continuous improvement
Step 1: Preparing for action

Step 2: Baseline assessment

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Multimodal improvement strategy embedded within each step in the cycle of continuous improvement

STEP 2
BASELINE ASSESSMENT
Multimodal thinking

Box 4. Multimodal thinking

1. What resources, infrastructures or supplies are required to facilitate practices? This includes consideration of procurement and accessibility of supplies, water availability and quality and ergonomic factors including workflow. For example, the placement of a central venous catheter set and tray (system change/"build it").

2. Who needs to be trained and/or educated to address the identified gap – how will this happen and who will undertake the training/education? This involves written information and/or oral instruction and/or e-learning and practical and interactive training sessions, including simulation and/or bedside training. For example, the training of doctors and nurses in charge of the placement and maintenance of central venous catheters on the prevention of bloodstream infection (BSI), including summarizing critical best practices in bundles (education and training/"teach it").

3. How have you become aware that practices need to be improved – how will you know that an improvement has taken place? This usually involves monitoring compliance with process and practice indicators, as well as monitoring outcome indicators. For example, audits of catheter insertion and maintenance and the provision of timely and direct feedback of results to doctors and nurses (monitoring and feedback/"check it").

4. How will you publicize action on specific measures and promote improvement and best practice in this area? This may involve the use of reminders, posters or other advocacy/awareness-raising tools and cues-to-action to promote an intervention and methods/initiatives to improve team communication across units and disciplines. For example, discussion of the strategy for the prevention of BSI during clinical meetings and the use of promotional leaflets and posters to reinforce bundles of best practices (communications and reminders/"sell it").

5. How will you make and maintain this as a health care facility priority and engage senior leaders/managers/champions and opinion leaders over time? This is concerned with ensuring that senior managers/leaders show tangible support and act as champions and role models, including making relevant decisions and promoting an adaptive approach and strengthening a culture that supports IPC, patient safety and quality. In addition, teams and individuals are empowered so that they perceive ownership of the intervention. For example, discussion of BSI rates at the executive level facility meetings (safety climate and culture of safety/"live it").
Evidence (44 studies at facility, 14 at national level) shows that implementing IPC activities at facility level using multimodal strategies is effective to improve IPC practices and reduce HAI (particularly hand hygiene compliance, central line-associated bloodstream infections, ventilator-associated pneumonia, infections caused by MRSA and C. difficile).

A multimodal strategy comprises several elements or components (3 or more; usually 5) implemented in an integrated way with the aim of improving an outcome and changing behaviour. It includes tools, such as bundles and checklists, developed by multidisciplinary teams that take into account local conditions.
The key approach for IPC implementation

1a. System change – alcohol-based handrub at point of care

1b. System change – access to safe, continuous water supply, soap and towels

2. Training and education

3. Evaluation and feedback

4. Reminders in the workplace

5. Institutional safety climate

In other words, the WHO multimodal improvement strategy addresses these five areas:

1. Build it (system change)
   - What infrastructures, equipment, supplies and other resources (including human) are required to implement the intervention?
   - Does the physical environment influence health worker behaviors? How can ergonomic and human factors approaches facilitate adoption of the intervention?
   - Are certain types of health workers needed to implement the intervention?

2. Teach it (training & education)
   - Who needs to be trained? What type of training should be used to ensure that the intervention will be implemented in line with evidence-based policies and how frequently?
   - Does the facility have trainers, training aids, and the necessary equipment?
   - Practical example: when implementing injection safety interventions, timely training of those responsible for administering safe injections, including nurses and community workers, is important considerations, as well as adequate disposal methods.

3. Check it (monitoring & feedback)
   - How can you identify the gaps in IPC practices or other indicators in your setting to allow you to prioritize your intervention?
   - How can you be sure that the intervention is being implemented correctly and safely, including at the bedside? For example, are there methods in place to observe or track practices?
   - How and when will feedback be given to the target audience and managers? How can patient also be informed?

4. Sell it (reminders & communications)
   - How are you promoting an intervention to ensure that there are cues to action at the point of care and messages are reinforced to health workers and patients?
   - Do you have capacity/funding to develop promotional messages and materials?
   - Practical example: when implementing interventions to reduce catheter-associated bloodstream infection, the use of visual cues to action, promotion/reminder messages, and planning for periodic campaigns are important considerations.

5. Live it (culture change)
   - Is there demonstrable support for the intervention at every level of the health system? For example, do senior managers provide funding for equipment and other resources? Are they willing to be champions and role models for IPC improvement?
   - Are teams involved in developing or adopting the intervention? Are they empowered and do they feel ownership and the need for accountability?

Practical example: when implementing hand hygiene interventions, the way that a health facility approaches this as part of safety and quality improvement and the value placed on hand hygiene improvement as part of the clinical workflow are important considerations.
Step 4: Assessing impact

Step 3: Developing and executing the plan

Step 2: Baseline assessment

Step 1: Preparing for action

Multimodal improvement strategy embedded within each step in the cycle of continuous improvement

Step 5: Sustaining the programme over the long-term
Step 5: Sustaining the programme over the long-term

- Multimodal improvement strategy embedded within each step in the cycle of continuous improvement

- Step 4: Evaluating impact

- Step 3: Developing and executing the plan

- Step 2: Baseline assessment

- Step 1: Preparing for action

STEP 5
SUSTAINING THE PROGRAMME OVER THE LONG TERM
What help you can find

PRACTICAL TIPS, KEY CONSIDERATIONS AND ACTIONS

IMPLEMENTATION BARRIERS AND SOLUTIONS

TOOLS AND RESOURCES

CASE STUDY EXAMPLES

http://www.who.int/infection-prevention/tools/core-components/en/
Liberia: core components prioritization

Core components prioritization

1. National IPC programme (2016)
2. Guidelines (2017-18)
3. Training (2015-)
4. HAI (SSI) surveillance (2018)
5. Monitoring (2015-)
6. Built environment (2016-)
Liberia – all health care workers’ IPC training (2015-16)

- **Keep Safe Keep Serving (KSKS) training:**
  40 master trainers, 2258 HCWs

- **Safe & Quality Services (SQS) training:**
  13000 HCWs
WHO IPC Advanced Training (2017-18)

- Leadership and IPC program management
- Prevention of urinary tract infections
- Prevention of catheter-associated bloodstream infections
- Prevention of respiratory tract infections
- Prevention of infections in surgery
- Reprocessing of medical devices
- Outbreak management in healthcare settings
- IPC to control antibiotic resistance
- HAI surveillance
- Injection safety

Liberia: 37 facility, county & national IPC focal persons

Test Results

- Pre-test: 41%
- Post-test: 65%

World Health Organization
National quality policy and IPC guidelines (2018)
Liberia national IPC guidelines TOT
Implementation example

The surgical unit-based safety programme (SUSP)

Patient safety culture improvement (CUSP):
- science of safety education
- staff safety assessment
- leadership
- learning from defects
- team work and communication

Infection prevention best practices:
- evidence-based and identified according to local staff assessment

Improvement of the patient safety climate

Reduction of:
- SSIs
- surgical complications
Stepwise approach

Step 1: Preparing for action
Step 2: Baseline assessment
Step 3: Developing and executing the plan
Step 4: Evaluating impact
Step 5: Sustaining the programme over the long-term

Multimodal improvement strategy embedded within each step in the cycle of continuous improvement
Understand your current situation
What tools do you use?

Discuss the following questions from the SUSP Perioperative Staff Safety Assessment Tool:

1. Please briefly describe the most frequent ways (list maximum 3) in which patients may get a surgical site infection in your surgical services/facilities

2. Please describe what you think can be done to prevent this surgical site infection

Organizational culture change →

Antibiotic prophylaxis

OR discipline

Surgical site skin preparation

Surgical hand preparation

Modified WHO checklist

No Hair removal

Pre-op Bath
Multidisciplinary local teams
Tools to address the culture

Core CUSP toolkit
Created for clinicians by clinicians, the CUSP toolkit is modular and modifiable to meet individual unit needs. Each module includes teaching tools and resources to support change at the unit level, presented through facilitator notes that take you step-by-step through the module, presentation slides, tools, videos.

CUSP for Safe Surgery
Perioperative Staff Safety Assessment

Purpose of this form: The purpose of this form is to tap into your experiences at the frontlines of patient care to find out what risks jeopardize patient safety in your clinical area.

Who should complete this form: All staff members.

How to complete this form: Provide as much detail as possible when answering the 4 questions. Drop off your completed safety assessment form in the location designated by the SUSP team.

When to complete this form: Any staff member can complete this form at any time.

CUSP for Safe Surgery (SUSP)
Safety Issues Worksheet for Senior Executive Partnership

<table>
<thead>
<tr>
<th>Date of Safety Rounds:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit:</td>
</tr>
<tr>
<td>Attendees:</td>
</tr>
<tr>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
</tr>
<tr>
<td>3.</td>
</tr>
<tr>
<td>4.</td>
</tr>
<tr>
<td>5.</td>
</tr>
<tr>
<td>6.</td>
</tr>
<tr>
<td>7.</td>
</tr>
</tbody>
</table>

(Please use back of form for additional attendees.)

Take 3 steps to make your surgical patient safe by preventing wound infections!

1. Pre-operative
   - Patient briefing: Make sure the patient takes a shower or bath and washes with soap on the day of the operation or the evening before. This helps remove bacteria from the skin and reduces the risk of wound infection.
   - Avoid hair removal: Avoid hair removal or use disposable drapes or clubfoot tights after each patient. Shave the skin, which can lead to infection.

2. Peri-operative
   - Surgical hand preparation: Follow all the steps of a good hand preparation technique before the operation.
   - Cleanse the patient with soap and water for 3-5 min, then rinse with alcohol-based solution for 30 sec.
   - Appropriate antibiotics prophylaxis needed to be given for the operation.
   - Hair removal: Hair removal should be done with a single dose of 500 mg.
   - Appropriate disinfection: Avoid after surgery.

3. Intra-operative
   - Appropriate skin preparation: Clean and prepare the skin with soap and water and then use an antiseptic preparation solution.
   - Sterilization in the OR:
     1. Make sure the equipment used is sterile.
     2. Only essential staff should be in the OR.
     3. Keep doors and windows disinfected.

*Surgical Room*

http://www.who.int/infection-prevention/countries/surgical/en/
System change - modified WHO formulations for surgical hand preparation

**Formulation I**

Final concentrations: ethanol 80% wt/wt, glycerol 0.725% vol/vol, hydrogen peroxide 0.125% vol/vol.

**Ingredients:**
1. ethanol (absolute), 800 g
2. H$_2$O$_2$ (3%), 4.17 ml
3. glycerol (98%), 7.25 ml (or 7.25 x 1.26 = 9.135 g)
4. top up to 1000 g with distilled or boiled water

**Formulation II**

Final concentrations: isopropanol 75% wt/wt, glycerol 0.725% vol/vol, hydrogen peroxide 0.125% vol/vol.

**Ingredients:**
1. isopropanol (absolute), 750 g
2. H$_2$O$_2$ (30%), 4.17 ml
3. glycerol (98%), 7.25 ml (or 7.25 x 1.26 = 9.135 g)
4. top up to 1000 g with distilled water

**Sources:**

System change - surgical skin preparation

Local preparation of 2% chlorhexidine isopropanol solution

1. Isopropanol: 62.7 % g/g

2. chlorhexidine 12.1% g/g taken from a 18.8% g/g chlorhexidine digluconate water solution

3. Top up with distilled water up to 100%


94% of patients had ≥2 follow-up interactions (inpatient reviews, outpatient clinic, telephone interviews); 80% had ≥3 interactions during their 30-day surveillance period.
### Impact on preventive measures

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Baseline (n=1604)</th>
<th>Follow-up (n=1827)</th>
<th>p value</th>
<th>Sustainability period (n=891)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preoperative patient bathing</td>
<td>1238 (77.2)</td>
<td>1544 (84.5)</td>
<td>&lt;0.0001</td>
<td>799 (89.7)</td>
</tr>
<tr>
<td>Appropriate hair removal</td>
<td>1169 (73.1)</td>
<td>1702 (93.5)</td>
<td>&lt;0.0001</td>
<td>880 (98.8)</td>
</tr>
<tr>
<td>Appropriate skin preparation</td>
<td>330 (20.7)</td>
<td>1644 (90.2)</td>
<td>&lt;0.0001</td>
<td>845 (94.8)</td>
</tr>
<tr>
<td>Quality of surgical hand preparation</td>
<td>1213 (78.7)</td>
<td>1694 (94.4)</td>
<td>&lt;0.0001</td>
<td>865 (97.4)</td>
</tr>
<tr>
<td>Appropriate use of antibiotic prophylaxis</td>
<td>205 (12.8)</td>
<td>714 (39.1)</td>
<td>&lt;0.0001</td>
<td>635 (71.3)</td>
</tr>
</tbody>
</table>

**Theatre discipline**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Baseline (n=4031)</th>
<th>Follow-up (n=4310)</th>
<th>p value</th>
<th>Sustainability period (n=4313)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theatre door openings per hour of operation time</td>
<td>14.8 (17.8)</td>
<td>14.2 (16.1)</td>
<td>0.3771</td>
<td>19.0 (21.6)</td>
</tr>
<tr>
<td>Number of individuals present at the start of the operation</td>
<td>8.3 (3.4)</td>
<td>7.7 (2.5)</td>
<td>&lt;0.0001</td>
<td>7.4 (2.5)</td>
</tr>
<tr>
<td>Number of entries during the operation</td>
<td>5.0 (4.1)</td>
<td>4.8 (4.9)</td>
<td>0.1758</td>
<td>4.2 (2.7)</td>
</tr>
</tbody>
</table>

Data are mean (SD). Data per variable and percentage missing data are also given. SSI—surgical site infection.

**Table 2:** Process indicators for SSI prevention intervention measures across study periods in four (baseline and follow-up) and three (sustainability period) hospitals
Impact on SSI

Figure 2: Unadjusted SSI cumulative incidence overall and by site at baseline and follow-up in four sites. Error bars show 95% CIs. SSI—surgical site infection.
Summary of success factors

- Use of multimodal strategies (this does not mean checklists and bundles)
- Having a step-wise action plan
- Mapping recommendations according to the surgical patient journey
- Empowering teams and involving front-line staff
- Engaging leadership
- Letting teams take the lead on adaptation
- Catalysing collective and individual ownership
- Using data to create awareness
- Awarding teams and work demonstrating a safety culture spirit
New WHO SSI Prevention Implementation Package

WHO SSI Prevention Hospital Implementation Guide

WHO Adaptive Tools to Support SSI Prevention Implementation

NEW IMPLEMENTATION PLATFORM
Launching Soon!

Fact sheets on SSI recommendations

http://www.who.int/infection-prevention/tools/surgical/en/
Be part of the WHO global survey starting Jan 2019!
(the report will be launched end of 2019)

Prepare:
Read the tools and documents¹

Take part in WHO webinars, hear more about using the tools and how to take part in the global survey²

Feb - complete the IPCAF³, act on your results and submit your results to WHO online

Mar - complete the HHSAF⁴, act on your results and submit your results to WHO online

Use the two tools*, calculate your score, show your progress!

¹IPC Assessment Framework (at facility level) - IPCAF, Hand Hygiene Self Assessment Framework HHSAF
²http://www.who.int/gpsc/country_work/hhsa_framework_October_2010.pdf?ua=1
⁴http://www.who.int/gpsc/country_work/hhsa_framework_October_2010.pdf?ua=1
²Find more here soon http://www.who.int/infection-prevention/news-events/current-news/en/
³http://www.who.int/infection-prevention/tools/core-components/IPCAF-facility.PDF?ua=1
⁴http://www.who.int/gpsc/country_work/hhsa_framework_October_2010.pdf?ua=1
SAVE LIVES: Clean Your Hands - 5 May 2019
Monitoring IPC & Hand Hygiene – WHO Global Survey 2019

- **Tools:** IPC Assessment Framework (IPCAF)* & Hand Hygiene Self-assessment Framework (HHSAF)**

- **Timeline:**
  - Preparations: September-December 2018
  - Survey conduct: January-April 2019
  - Survey analysis: May-August 2019

- **Sample:**
  - Open voluntary participation by health care facilities around the world
  - Randomised stratified sub-sample

- **Planning:**
  - Month 1: preparations for IPCAF
  - Month 2: IPCAF completion
  - Month 3: preparations for HHSAF
  - Month 4: HHSAF completion

  I. Tools completion on paper at HCF level  ➔  II. Submission online or by email

- **Report:** to be issued by WHO by 2019

* http://www.who.int/infection-prevention/tools/core-components/IPCAF-facility.PDF?ua=1
** http://www.who.int/gpsc/country_work/hhsa_framework_October_2010.pdf?ua=1
THANK YOU!!!

WHO Infection Prevention and Control
Global Unit

Learn more at:
http://www.who.int/infection-prevention/en/