

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

Improved Access. Improved Services. Better Health Outcomes.

**Continuous quality improvement of infection
prevention and control practices in health
facilities in Cameroon: Lessons learned**

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Presenter Disclosures

Continuous quality improvement of infection prevention and control practices in health facilities in Cameroon: Lessons learned

- I. **The following personal financial relationships with commercial interests relevant to this presentation existed during the past 24 months:**
 - **No relationships to disclose**

Outline

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- Lessons Learned

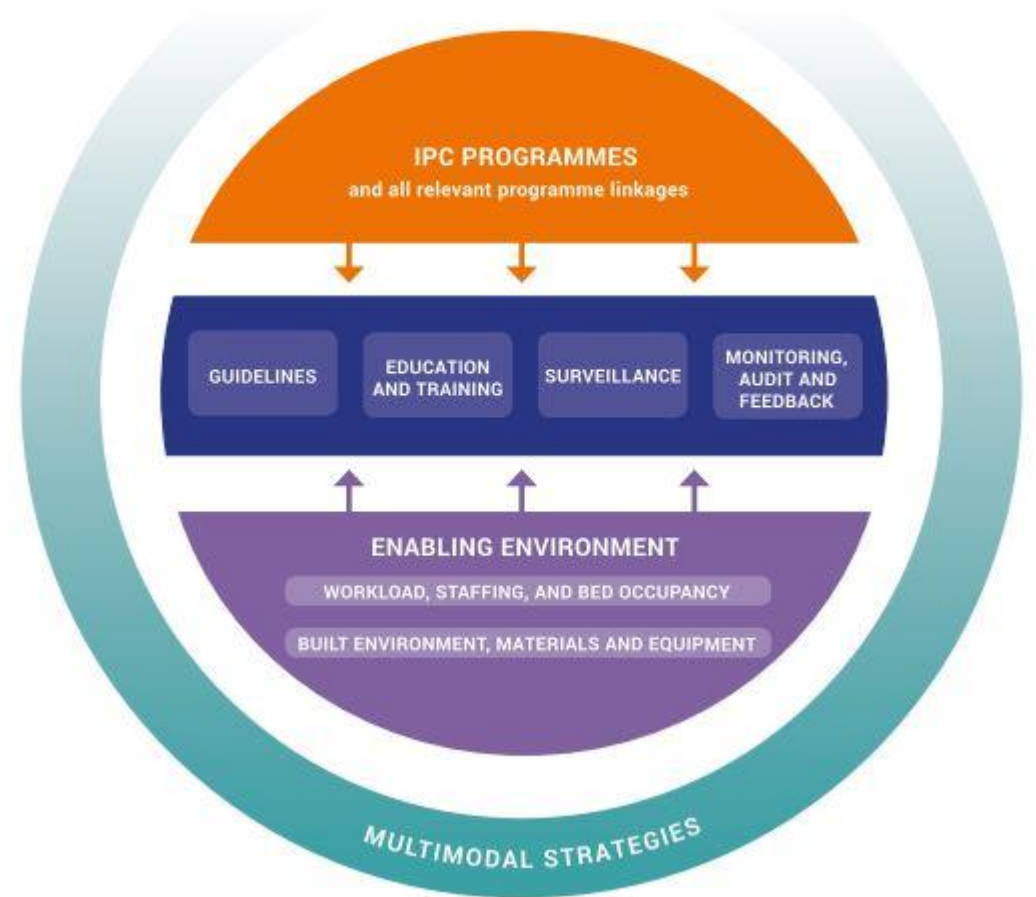


Background (1/2)

- Health care-associated infections (HCAIs) are infections acquired by patients while receiving treatment for medical or surgical conditions
- According to a WHO report, of every 100 patients in acute-care hospitals, seven patients in high-income countries and 15 in low-and middle-income countries will acquire at least one HCAI during their hospital stay
- HCAIs can result in prolonged hospitalization, increase the incidence of antimicrobial resistance, add to the health system's financial burden, and cause excess deaths

Background (2/2)

- Infection prevention and control (IPC) compliance is effective in reducing the incidence of HCAs, but IPC continuous quality improvement (CQI) practices are not well documented in Cameroonian health facilities
- The 2017 WHO Joint External Evaluation (JEE) of the GHS action package rated Cameroon at “no capacity” (score 1) for IPC programs
- We describe efforts to strengthen IPC compliance through CQI based on the Plan-Do-Study-Act (PDSA) cycle using WHO IPC Assessment Framework (IPCAF) to monitor progress



Cameroon

- Lower middle-income country in Central Africa
- Population: 27.2 million (2021)
 - 62.3% under 25 years of age
 - Sex ratio (male/female): 1.01
 - Annual growth rate: 2.75% (2022)
 - Urban population: 58%
- Poverty rate: 25.7% (2018)
- GDP: USD 45.2 billion (2021)
- Health system:
 - Pyramid type with three levels (central, regional, district)
 - Ten administrative regions and 199 health districts



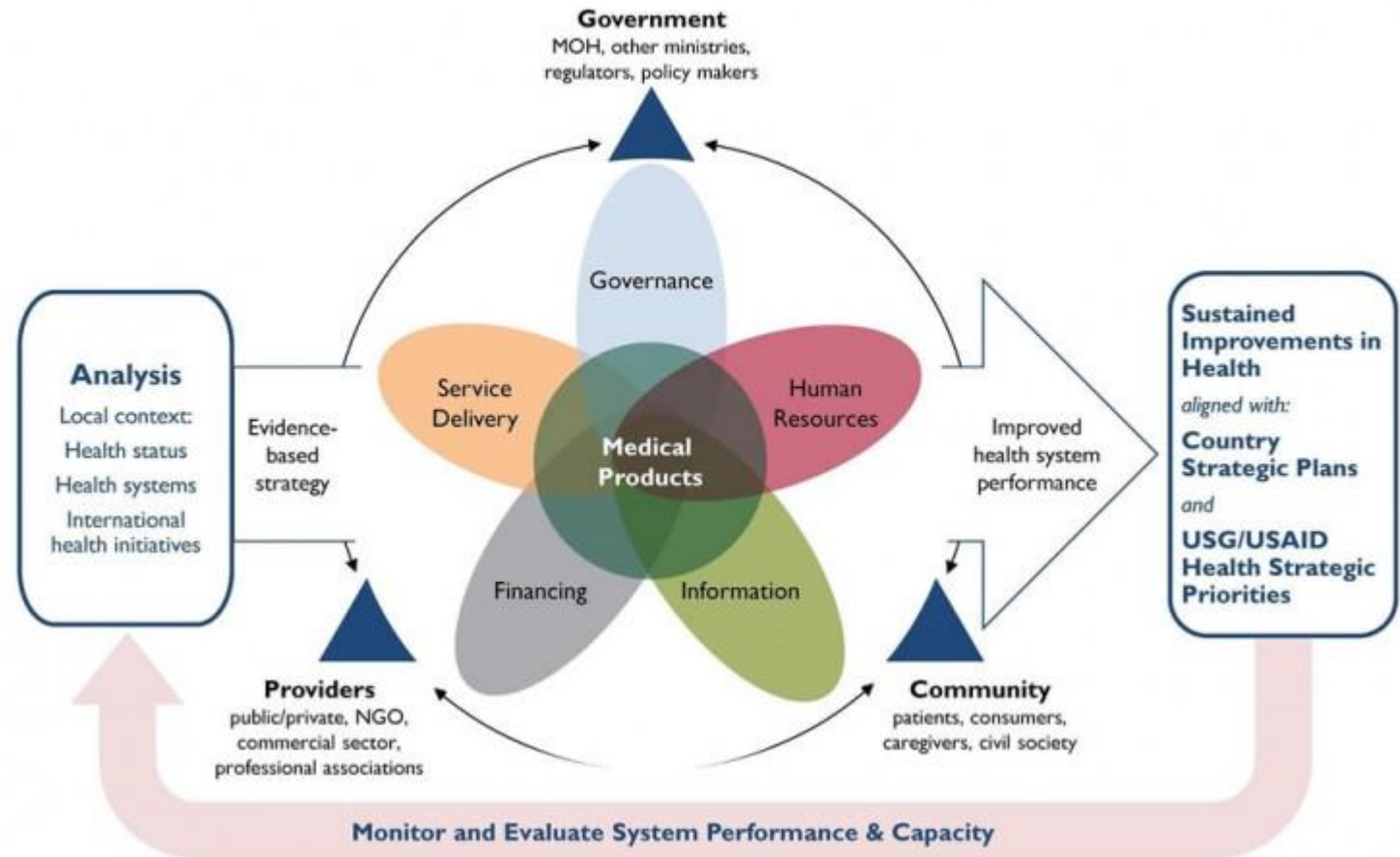
Source: <https://commons.wikimedia.org/wiki/File:Cameroon>

Methodology (1/5) – Our Approach to PSS

The pharmaceutical systems strengthening (PSS) approach considers the interactions among the pharmaceutical subsystem and the health system building blocks when developing interventions and strategies.

Based on the MTaPS objectives and using the WHO benchmark tool, we designed and implemented activities to strengthen IPC governance, strengthen institutional and HR capacity to manage IPC, and advance the availability and use of IPC-related information for decision making.

USAID Pharmaceutical System Strengthening Approach

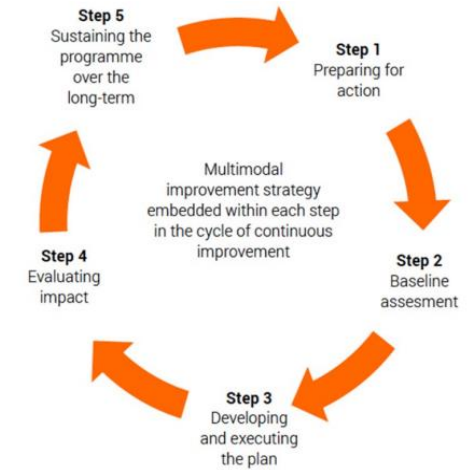


[Strengthening Pharmaceutical Systems | US Agency for International Development \(usaid.gov\)](https://www.usaid.gov/our-work/health/strategies/strategies-for-strengthening-pharmaceutical-systems)

Methodology (2/5)

Applied WHO five-step approach founded on quality improvement theory to implement the IPC program and embedded the multimodal (MM) strategy in each step

- **Step 1**
 - Built capacity of staff at central and regional levels to use WHO IPC assessment and monitoring tools
- **Step 2**
 - Supported Ministry of Health (MOH) to conduct baseline assessment of IPC core components using the WHO IPCAF tool in 12 health facilities to identify gaps, generate evidence, and prioritize support
- **Step 3**
 - Used results of baseline assessment to conduct root cause analysis and develop improvement plan
 - Supported MOH to develop a national training package on IPC to strengthen capacity of health care workers



WHO 5-step approach

Source: <https://www.who.int/westernpacific/publications-detail/WHO-HIS-SDS-2019.2>



Elements of WHO multimodal strategy

Source: https://www.sf2h.net/wp-content/uploads/2017/01/KILPATRICK_Claire_20170607_1400_Auditorium_Athena1.pdf

Methodology (3/5)

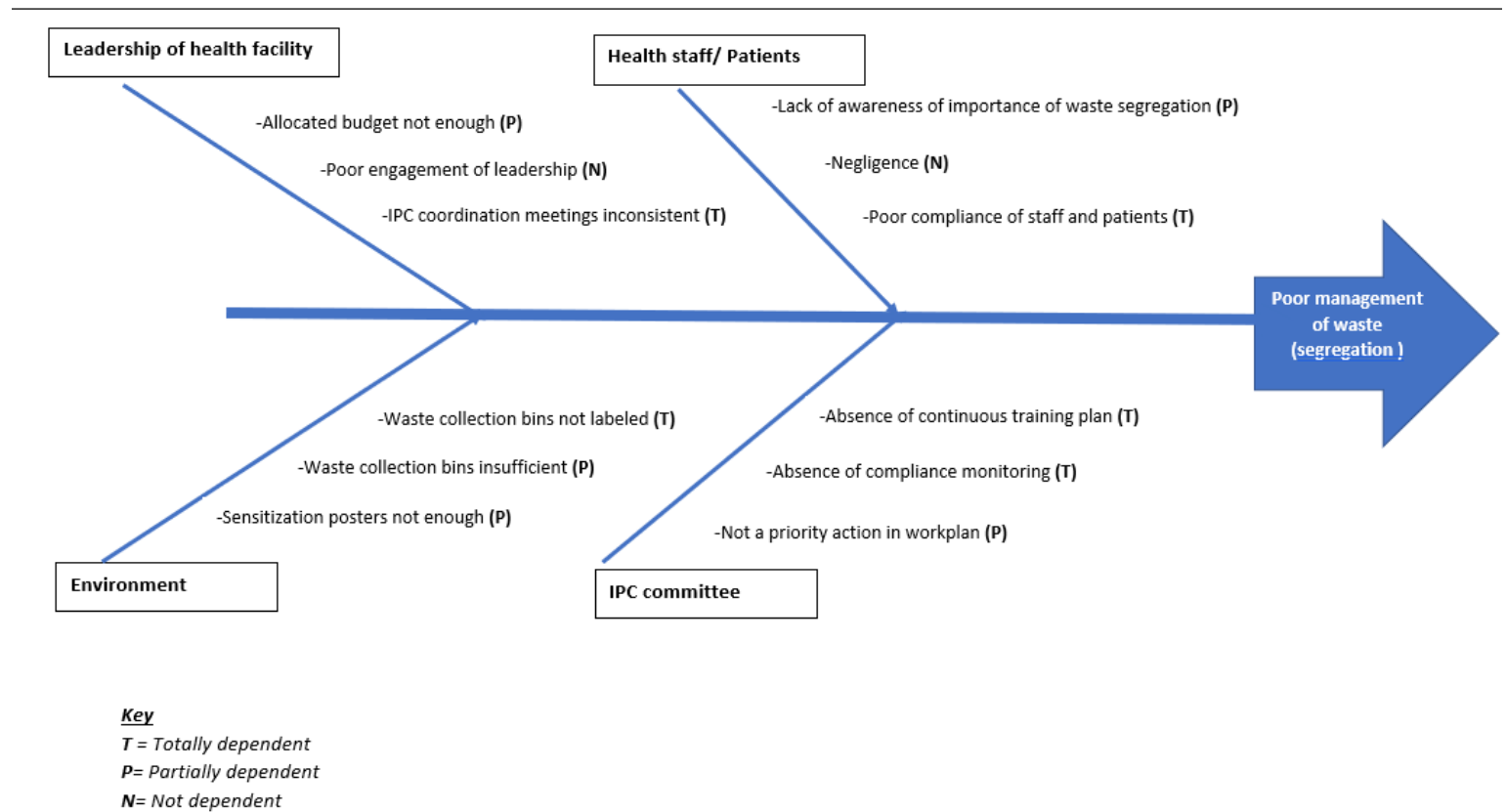
- Trained master trainers in IPC at the national level to cascade IPC trainings in health facilities
- Supported the MOH to develop a national IPC guideline to serve as a reference document in health facilities
- Supported the MOH to establish IPC committees in health facilities to ensure stewardship, monitoring, and evaluation
- Strengthened the technical and managerial capacity of the IPC committees and assisted in developing IPC improvement plans based on assessment results
 - Plans focused on no-cost and low-cost activities such as hand hygiene audits, feedback, and adapting IPC standard protocols
- **Step 4**
 - Used WhatsApp to follow up on implementation of IPC activities in improvement plans and share good practices
 - Supported the MOH to conduct onsite supportive supervision to repeat IPC assessment using IPCAF tool

Methodology (4/5)

- Used the Fishbone method to troubleshoot implementation challenges and brainstorm solutions
- For example, brainstorming solutions to the problem of waste segregation at Nkongsamba Hospital as shown in the figure below

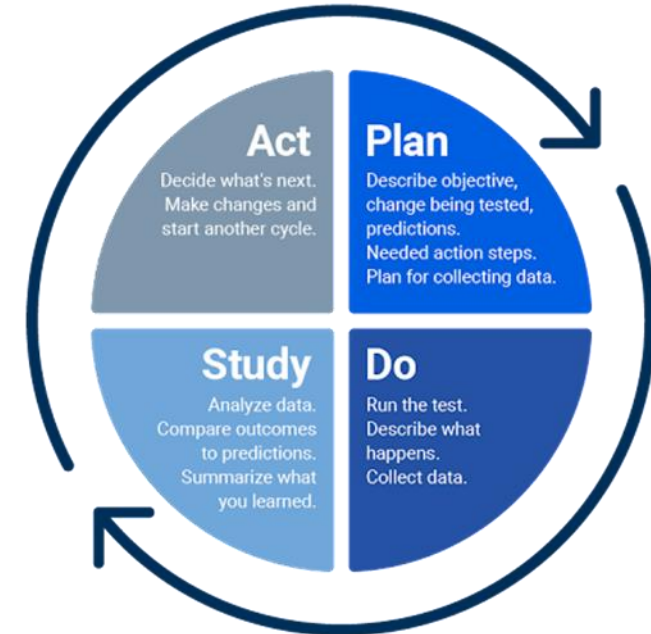


Brainstorming solutions to the problem of waste segregation at the Nkongsamba Hospital (June 2021).
Photo credit:Alphonse Acho



Methodology (5/5)

- Used the PDSA cycle to review progress, define short-term implementation targets, and adapt strategies focusing on the weakest IPC core components
- **Step 5**
 - Linked facility IPC committees with central level passing through regional level for accountability
 - IPC national focal person designated by the MOH to coordinate IPC activities after MTaPS' advocacy



PDSA Cycle
Source: isixsigma.com

Results (1/3)

No	Health facility	Baseline score/800	Baseline IPC status
1	Yaounde Jamot Hospital	140	Inadequate
2	Obala District Hospital	273	Basic
3	Ebolowa Regional Hospital	405	Intermediate
4	Sangmelima Reference Hospital	360	Basic
5	Bafoussam Regional Hospital	343	Basic
6	Mbouda District Hospital	408	Intermediate
7	Foumbot District Hospital	175	Inadequate
8	Bangangte District Hospital	303	Basic
9	Edea Regional Hospital Annex	237	Basic
10	Douala General Hospital	368	Basic
11	Bonassama District Hospital	360	Basic
12	Nkongsamba Regional Hospital	238	Basic

Legend

Inadequate: 0- 200

Basic: 201 - 400

Intermediate: 401 - 600

Advanced: 601 - 800

- Median score was 323/800 (range: 140–408)
- The weakest IPC components were the non-mastery of the MM strategy, absence of monitoring/audit of IPC practices and feedback, and absence of education and training in IPC



Assessment of IPC core components at Regional Hospital – Bafoussam (September 2019). Photo credit: Alphonse Acho

Results (2/3)

No	Health facility	Baseline score/800 (Sept 2019 and March 2020)	Baseline status	Repeat score/800 (June 2021)	Repeat status
1	Yaounde Jamot Hospital	140	Inadequate	427	Intermediate
2	Obala District Hospital	273	Basic	456	Intermediate
3	Ebolowa Regional Hospital	405	Intermediate	437	Intermediate
4	Sangmelima Reference Hospital	360	Basic	512	Intermediate
5	Bafoussam Regional Hospital	343	Basic	506	Intermediate
6	Mbouda District Hospital	408	Intermediate	522	Intermediate
7	Foumbot District Hospital	175	Inadequate	528	Intermediate
8	Bangangte District Hospital	303	Basic	505	Intermediate
9	Edea Regional Hospital Annex	237	Basic	519	Intermediate
10	Douala General Hospital	368	Basic	515	Intermediate
11	Bonassama District Hospital	360	Basic	705	Advanced
12	Nkongsamba Regional Hospital	238	Basic	491	Intermediate

- Median score was 509/800 (range: 427–705)
- Five facilities made great strides to improving their water, sanitation, hygiene, and waste management infrastructure to enhance IPC compliance



Repeat assessment of IPC core components at Douala General Hospital (June 2021). Photo credit: Alphonse Acho

Results (3/3)

BEFORE: Baseline scores IPCAF (Sept 2019 and March 2020)

Facility IPC component	DH Bonassama	DH Foumbot	DH Bagante	DH Mbouda	DH Obala	RH Bafoussam	RH Edea	RH Nkongsamba	RH Ebolowa	RH Sangmelima	Jamot Yaounde	GH Douala
IPC program	23	0	48	63	80	95	15	10	50	35	0	38
Guidelines	54	10	50	70	60	0	40	27	65	42	0	85
Education	35	20	50	60	60	40	35	35	60	36	10	50
HAI surveillance	25	0	50	60	23	0	18	53	40	50	18	40
MM strategy	60	0	0	0	30	55	10	0	10	0	0	10
Monitoring	35	25	15	15	0	0	28	33	30	58	0	10
Workload	40	0	20	60	25	30	50	40	72	60	35	55
Environment	85	0	70	80	30	65	78	40	78	85	78	80
Total score	360	175	303	408	304	343	237	238	405	360	140	368



AFTER: Follow-up scores IPCAF (June 2021)

Facility IPC component	DH Bonassama	DH Foumbot	DH Bagante	DH Mbouda	DH Obala	RH Bafoussam	RH Edea	RH Nkongsamba	RH Ebolowa	RH Sangmelima	Jamot Yaounde	GH Douala
IPC program	93	95	80	65	75	80	90	83	73	78	78	20
Guidelines	98	68	73	80	85	65	85	83	55	73	60	75
Education	85	65	20	45	35	50	25	40	20	35	65	80
HAI surveillance	90	60	73	48	75	70	70	25	60	70	35	58
MM strategy	90	50	60	65	45	65	65	75	60	65	70	75
Monitoring	80	63	58	63	15	55	20	68	20	45	18	40
Workload	80	50	55	75	45	50	100	65	80	75	40	80
Environment	90	78	88	83	85	71	64	54	70	73	63	88
Total score	705	528	505	523	460	506	519	491	438	512	427	515

Challenges

- Step 3 was the most challenging of the five steps for the following reasons:
 - Delay in implementation of some activities, such as developing and validating the national IPC guidelines, due to conflicting schedules of national counterparts
 - Water access, sanitation, and hygiene infrastructure in some health facilities was not optimal to improve IPC practices
 - Although health facilities appreciated MTaPS' technical support, some highlighted the need for financial assistance to ensure constant availability of IPC commodities

Conclusion

- CQI based on the PDSA cycle greatly improved IPC status in all 12 health facilities
- Engaging and training health facility management on leadership and management of an IPC program contributes to its buy-in and success
- Establishing IPC committees and focusing on no-cost and low-cost activities to develop improvement plans were critical enabling factors to improve IPC status
- Putting national counterparts at the center of the activity for stewardship promotes ownership and sustainability of the activity

Lessons Learned

Design CQI program for IPC using **MTaPS' PSS approach** and the **WHO five-step approach** based on the quality improvement theory

Embed the elements of the **WHO multimodal strategy** within each step of the CQI cycle

Use the **Fishbone method** to troubleshoot implementation challenges and brainstorm solutions

Apply the **PDSA cycle** to review progress, adapt strategy, and accelerate improvement, focusing on low hanging fruit

References

- Sahiledengle B, Seyoum F, Abebe D, Geleta EN, Negash G, Kalu A, Woldeyohannes D, Tekalegn Y, Zenbaba D, Quisido BJE. (2020). Incidence and risk factors for hospital-acquired infection among paediatric patients in a teaching hospital: A prospective study in southeast Ethiopia. *BMJ Open*, 10(12), e037997. <https://doi.org/10.1136/bmjopen-2020-037997>
- Storr J, Twyman A, Zingg W, Damani N, Kilpatrick C, Reilly J, Price L, Egger M, Grayson ML, Kelley E, Allegranzi B, WHO Guidelines Development Group. (2017). Core components for effective infection prevention and control programmes: New WHO evidence-based recommendations. *Antimicrobial Resistance & Infection Control*, 6(1), 6. <https://doi.org/10.1186/s13756-016-0149-9>
- <https://www.who.int/news/item/06-05-2022-who-launches-first-ever-global-report-on-infection-prevention-and-control>
- World Health Organization. (2016). Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level. <http://www.ncbi.nlm.nih.gov/books/NBK401773/>
- Fishbone method: <https://www.cms.gov/medicare/provider-enrollment-and-certification/qapi/downloads/fishbonerevised.pdf>



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Thank you
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Questions?



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