System change (Build it)

Education (Teach it)

Monitoring and feedback (Check it)

Reminders in the workplace/communications (Sell it)

Safety climate/culture change (Lve it)

$$$$$

RESOURCE CONSIDERATIONS FOR INVESTING IN HAND HYGIENE IMPROVEMENT IN HEALTH CARE FACILITIES

World Health Organization

Contents

Acknowledgements

1   Introduction

1.1 Focus and purpose

Investment in all the drivers and facilitators of hand hygiene action in health care to ensure that it occurs at the point of care and other critical moments requires a multidisciplinary, multifaceted approach. WHO describes such an approach as a **"multimodal improvement strategy"** (MMIS) which is at the core of its implementation models for hand hygiene and infection prevention and control (IPC) programmes.

The focus of this document is on the **resource considerations** for investing in hand hygiene improvement in health care (primary, secondary and tertiary) using the MMIS approach. It presents the inputs (such as equipment, supplies and activities) required to:

- estimate the investments needed to implement and sustain a comprehensive hand hygiene programme based on the MMIS; and
- support health workers to perform hand hygiene at the point of care and at other important times for safe, high-quality care.

Where available, costing and other relevant tools that can aid in the estimation of required resources are listed.

The document **strengthens the narrative** around the overall resources required to develop and implement hand hygiene improvements in health care using an MMIS. Strengthening this narrative will also support related work of the WHO and United Nations Children's Fund (UNICEF) Hand Hygiene for All Global Initiative, launched in 2020 (1).

1.2 Intended audience

The intended audience of this publication includes policy-makers, senior facility managers, infection prevention and control (IPC) leads, planners and others involved in developing and implementing hand hygiene improvement programmes at the primary and secondary/tertiary care level.

1.3 Background

Improving hand hygiene in health care is one of the key areas of focus of the global **WHO/UNICEF Hand Hygiene for All Initiative**; in 2020 this was reinforced with new recommendations calling to action Member States to achieve **universal access to hand hygiene** in the context of COVID-19 (1, 2). This builds on over a decade of work by WHO on providing guidance and tools for improvement of hand hygiene in health care[a].

Hand hygiene in health care is a modifiable behavioural intervention, and the MMIS is a well established WHO approach (1). It is presented as part of the WHO's minimum requirements for IPC (3)

---

[a] https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene

and within the guidelines on core components of IPC programmes (4) as an evidence-based strategy to improve hand hygiene (5), among other IPC interventions, at all levels. It was initially conceived in the context of WHO's hand hygiene guidelines (6) and related implementation tools (7).

1.4 Brief overview of the MMIS

The MMIS comprises **five synergistic elements**, each of which is essential and complementary. They must all be in place, to some degree, as part of interventions to achieve outcome improvements and optimal hand hygiene behavioural change.

The MMIS is grounded in **behavioural science** and incorporates different constructs of multiple behavioural models, including the Health Belief Model and the Theory of Planned Behaviour (6). These models reinforce the need for the five elements that comprise the strategy:

- system change
- training and education
- monitoring and feedback
- reminders in the workplace/communications
- safety climate/culture change.

To aid understanding, these MMIS elements can be simplified to just five words: **build, teach, check, sell and live.**

> **The MMIS has proved to be highly effective, leading to a significant improvement in hand hygiene compliance and other key hand hygiene indicators and a reduction in health care-associated infections and antimicrobial resistance (4–6,8), as well as having played an important role in contributing to stop outbreaks. Multimodal hand hygiene improvement programmes are also highly cost saving (9).**

Implementation of the MMIS requires resources at the initial planning and implementation phase (including capital/infrastructure and ongoing costs), as well as for assessing its impact and ongoing costs over a multiyear period. This is needed to sustain hand hygiene interventions and behaviours that will help prevent health care-associated infections and antimicrobial resistance, as part of an IPC programme.

1.5 How health facilities can understand their situation and address all five elements of the MMIS

The WHO Hand Hygiene Self-Assessment Framework (10) is **a diagnostic tool** that provides a situation analysis of the state of the hand hygiene programme/activities within an individual health care facility, **according to the five elements of the MMIS.** It can provide key information, if used on a regular basis, to support decision-making on the actions and associated resources required for hand hygiene improvement, no matter what the context. The Framework provides information on the extent to which each of the five elements of the MMIS are being met. It therefore supports incremental improvement

* See Annex.

and, inherently, behaviour change. The Framework has been used to inform three global surveys on hand hygiene improvement based on the MMIS (11).

The MMIS is relevant to all countries, but the approach and the required inputs will be different in each individual case, guided by the results derived from the Hand Hygiene Self-Assessment Framework. The percentage of resources to be allocated to each of the five elements of the MMIS depends on the local situation. Taking the **example of system change**, weaknesses/deficits – such as lack of access to hand hygiene products – can be identified using the Framework, irrespective of the income level of a country.

- **In least-developed countries** where half of health-care facilities lack basic water services, "system change" to provide hand hygiene facilities will be the first element of the MMIS to be prioritized and weaknesses will be likely to relate to the water infrastructure, and costs will be centred around this. Costs in this situation should also immediately address alcohol-based handrub (ABHR), which can support hand hygiene improvement while water services are being addressed, as well as facilitating hand hygiene at the point of care on an ongoing basis. Local production of ABHR formulations in national, subnational or hospital pharmacies or by private companies is strongly encouraged (as recommended by WHO guidance), especially if commercial options are limited or too costly (2).
- **In many low- and middle-income countries**, system change weaknesses have been found to include lack of continuous availability of clean water, soap and ABHR, as well as maintenance issues, such as broken taps, missing handles and leaking pipes (12).
- **In high-income countries**, a continuous supply of clean running water is likely to be the norm, yet weaknesses may still be present, such as a lack of ABHR dispensers at each point of care or systems to replenish stocks of ABHR regularly.

All these weaknesses/deficits negatively affect the ability of health workers to clean their hands at the point of care, but at a different order of magnitude. In addition, all elements of the MMIS are equally important and thus, each one of them should be assessed and improved in different aspects depending on the local situation, including resources available and cultural factors. The Hand Hygiene Self-Assessment Framework again enables plans to be developed to bridge these gaps and achieve incremental improvements.

In situations such as the least-developed countries example above, the majority of costs will initially be on system change. Even at the outset, however, resource considerations should be given to the other elements of the MMIS: each element must be addressed to support the requisite **long-term behaviour change** in the target audience of the hand hygiene programme.
The precise composition of IPC teams on the ground will also vary by country. The IPC team composition will be important to take into account when considering resource requirements.

1.6 Using this document

In order for the intended audience to both consider and estimate all the resources required, Tables 1–5 provide prompts for those working at the national, subnational and facility levels by supporting them to estimate the associated costs. The tables highlight what should be in place for each of the five elements of the MMIS and the associated resource considerations – both set-up and ongoing – for primary and secondary/tertiary care settings. They also list tools to support estimation of required

resources, including costing tools[c] where they are available. WHO's CHOosing Interventions that are Cost-Effective (WHO-CHOICE) Costing Interventions templates (CostIt)[d] (13) is not included, but the intended audience might find this a useful tool to consult at the start of the process of development and implementation of hand hygiene improvement programmes. Each table concludes with a number of other supporting actions. This is summarized in Fig. 1.

Fig. 1. Summary of the MMIS tables

Table 1.
**System change
(Build it)**

Table 2.
**Training
and Education
(Teach it)**

Table 3.
**Monitoring
and feedback
(Check it)**

Table 4.
**Reminders and
communications
(Sell it)**

Table 5.
**Safety climate/
culture change
(Live it)**
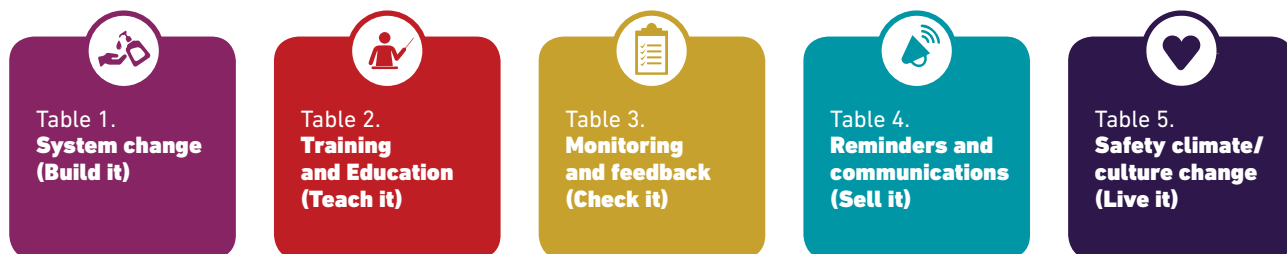
What the tables contain
For each element of the MMIS the tables present:
- what should be in place
- resource considerations (set-up and ongoing)
- tools to support estimation of required resources
- other supporting actions

Level of the health system
The tables address:
- primary care
- secondary/tertiary care

---

[b] Note, the tools included across Tables 1–5 are those that support cost estimates to be made in relation to hand hygiene improvement. Academic studies on the costing or cost–effectiveness of hand hygiene interventions are not included as "tools".
[c] CostIt software helps the user calculate the economic costs of interventions, but it can also be used to estimate financial costs. It provides a set of separate templates for reporting and analysis of costs at the programme, hospital and primary health facility.

Table 1. **System change (Build it)**

GOAL

Health workers, patients and visitors are able to access hand hygiene infrastructure and products[e]

WHAT SHOULD BE IN PLACE	RESOURCE CONSIDERATIONS (SET UP AND ONGOING)
PRIMARY CARE **Human resources** • A trained IPC officer at the next administrative level (e.g. district) to support primary care facilities to ensure that all the infrastructures listed below are reliably/ sustainably in place **Water supply** • Supply available from a source on the premises, e.g. a deep borehole or a treated, safely managed piped water supply **Soap and towels or other hand drying methods** • At the point of care • Where personal protective equipment (PPE) is put on or taken off • Where health care waste is handled • Within 5 metres of toilets, entrances and exits of health-care facilities, waiting and dining rooms, and other public areas **ABHR** • At the point of care • Within 5 metres of toilets • Where PPE is put on/taken off • Where health care waste is handled • At entrances and exits of health-care facilities, waiting and dining rooms, and other public areas	**At the primary care level** • Numbers and types of personnel required to ensure hand hygiene products are available, operational and maintained where required **At the next administrative level (e.g. district)** • Quantities and types of materials and equipment for installation, operation and maintenance (O&M) of a high-quality water supply • Numbers and types of personnel for installation and O&M of water supply • Quantity and unit costs of soap, towels and dispensers • Quantity and unit costs of ABHR • Costs associated with production and distribution – local, central or commercial – of ABHR • Costs associated with waste management/ recycling of ABHR containers • Handling costs – e.g. tariffs/customs associated with ABHR and other hardware • Ability to produce and make available policies and procedures
SECONDARY AND TERTIARY CARE **Human resources** • At least one full-time equivalent (FTE) trained IPC focal point (nurse or doctor) per 250 beds in charge of ensuring that all the infrastructures listed below are in place, as part of his/her role	• Quantities and types of materials and equipment for installation and O&M of water supply • Numbers and types of personnel for installation and O&M of water supply • Numbers and type of personnel required to ensure that hand hygiene products are

[d] According to the WHO/UNICEF coverage indicators (14), to achieve basic services, water should be available from an improved source on the premises, nd hygiene should be functional and available at points of care and within 5 metres of toilets (with water and soap and/or ABHR).

WHAT SHOULD BE IN PLACE	RESOURCE CONSIDERATIONS (SET UP AND ONGOING)
Water supply • A safe and sufficient quantity of water available and piped inside the facility at all times – at a minimum to high-risk wards (for example, maternity ward, operating rooms and intensive care unit) **Soap/towels or other hand drying methods** • At the point of care • Where PPE is put on or taken off • Where health care waste is handled • Within 5 metres of toilets, entrances and exits of health-care facilities, waiting and dining rooms, and other public areas **ABHR** • At the point of care • At toilets and service areas (for example, the decontamination unit) • Within 5 metres of toilets • Where PPE is put on/taken off • Where health care waste is handled • At entrances and exits of health-care facilities, waiting and dining rooms, and other public areas	available and maintained where required • Quantity and unit costs of soap, towels and dispensers • Quantity and unit costs of appropriate hand wash basins • Quantity and unit costs of ABHR • Costs associated with production and distribution (local, central or commercial) of ABHR (raw materials, equipment, dispensing and personnel salary costs for local production) • Costs associated with waste management/ recycling of ABHR containers • Handling costs – e.g. tariffs/customs associated with ABHR and other hardware • Ability to produce and make available policies and procedures

SECONDARY AND TERTIARY CARE

Tools to support estimation of required resources
- Hand Hygiene Self-Assessment Framework 2010. Geneva: World Health Organization; 2010 (https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/monitoring-tools).
- Guide to implementation: a guide to the implementation of the WHO multimodal hand hygiene improvement strategy. Geneva: World Health Organization; 2009 (https://www.who.int/publications/i/item/a-guide-to-the-implementation-of-the-who-multimodal-hand-hygiene-improvement-strategy). This includes template action plans (also available at: https://www.who.int/campaigns/world-hand-hygiene-day/clean-hands-2012). See section II.1 for a full list of resources.
- Global progress report on water, sanitation and hygiene in health care facilities: fundamentals first. Chapter 6: An investment opportunity. Geneva: World Health Organization; 2020 (https://www.who.int/publications/i/item/9789240017542).
- Alcohol-based Handrub planning and costing tool. Geneva: World Health Organization; 2010 (https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/monitoring-tools).
- Ward infrastructure survey. Geneva: World Health Organization; 2009 (https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/monitoring-tools).
- Soap/handrub consumption survey. Geneva: World Health Organization; 2009 (https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/monitoring-tools).
- Water and Sanitation for Health Facility Improvement Tool (WASH FIT): a practical guide for improving quality of care through water, sanitation and hygiene in health care facilities. Geneva: World Health Organization; 2017 (https://apps.who.int/iris/handle/10665/254910).
- Guide to local production: WHO-recommended handrub formulations. Geneva: World Health Organization; 2010 (https://www.who.int/publications/i/item/WHO-IER-PSP-2010.5).
- Technical guide for handwashing facilities in public places and buildings. In: WaterAid [website]. London: WaterAid; 2021 (https://washmatters.wateraid.org/publications/technical-guide-for-handwashing-facilities-in-public-places-and-buildings).

Other supporting actions
- Use of the Hand Hygiene Self-Assessment Framework to understand the current situation and identify local gaps regarding system change
- Collection of information on:
    - numbers of beds/points of care to be equipped with hand hygiene facilities (and other critical areas: preparing medication, donning/doffing of PPE and so on)
    - numbers of health workers and associated salaries
    - numbers of anticipated hand hygiene opportunities per time period (based on, for example, workflow analysis)
    - people responsible for ensuring ongoing O&M of systems
    - local producers of ABHR and regional, national and international companies and distributors
- Development of a hand hygiene improvement action plan using WHO's Guide to implementation and template action plans

Table 2. **Training and Education (teach it)**

GOAL
Health workers, patients and visitors are trained on why and when hand hygiene is needed and how to perform it appropriately

WHAT SHOULD BE IN PLACE	RESOURCE CONSIDERATIONS (SET UP AND ONGOING)
PRIMARY CARE **Human resources** • A trained IPC link person with dedicated (part-time) availability to deliver training **Programmes** • A funded programme for all health workers (at all levels) to be trained on why, when and how to ensure hand hygiene, at least annually • Training materials, as necessary	• Numbers and types of personnel required to undertake needs assessments and training, including who, how many and where they will be sourced – this role may be included within an IPC programme budget and may not be listed as a separate cost, depending on the setting • Personnel required to update training materials • Personnel to determine whether training will be delivered locally or centrally (e.g. through online mechanisms) • Personnel required to translate/adapt training materials • Quantity and type of training materials, including a schedule to be made widely available (paper or electronic) and printing • Training venue • Per diem – e.g. for travel required to deliver/receive training
SECONDARY AND TERTIARY CARE **Human resources** • Trained IPC team member(s) or at least one FTE trained IPC focal point (nurse or doctor) per 250 beds in charge of delivering training, as part of his/her role **Programmes** • A funded programme • All health workers trained on why, when and how to ensure hand hygiene, at least annually (a minimum 2-hour training session)	• Numbers and types of personnel required to undertake regular training sessions, including who, how many and where they will be sourced – this role may be included within an IPC programme budget and may not be listed as a separate cost, depending on the setting • Personnel required to update training materials • Personnel to determine whether training will be developed and delivered locally or centrally (e.g. through online mechanisms) • Personnel required to translate/adapt training materials • Quantity and type of training materials, including a schedule to be made widely available (paper or electronic) and printing – including a hand hygiene technical reference manual • Information technology (IT) and internet access – e.g. to enable training videos to be shown to participants and remote training to take place • Training venue • Per diem – e.g. for travel required to deliver/receive training

Tools to support estimation of required resources

- Hand Hygiene Self-Assessment Framework 2010. Geneva: World Health Organization; 2010 (https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/monitoring-tools).
- Guide to implementation: a guide to the implementation of the WHO multimodal hand hygiene improvement strategy. Geneva: World Health Organization; 2009 (https://www.who.int/publications/i/item/a-guide-to-the-implementation-of-the-who-multimodal-hand-hygiene-improvement-strategy). This includes template action plans (also available at: https://www.who.int/campaigns/world-hand-hygiene-day/clean-hands-2012). See sections II.2 and III.1 for a full list of resources.
- Water and Sanitation for Health Facility Improvement Tool (WASH FIT): a practical guide for improving quality of care through water, sanitation and hygiene in health care facilities. Geneva: World Health Organization; 2017 (https://apps.who.int/iris/handle/10665/254910).
- OpenWHO training courses (including those on standard precautions and hand hygiene): Infection Prevention & Control. In: OpenWHO [website]. Geneva: World Health Organization; 2021 (https://openwho.org/channels/ipc).
- Education session for trainers, observers and health workers. Geneva: World Health Organization; 2018 (https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/training-tools).
- Hand hygiene training films and slides accompanying the training films. Geneva: World Health Organization; 2009 (https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/training-tools).

Other supporting actions

- Use of the Hand Hygiene Self-Assessment Framework to understand the current situation and identify gaps regarding training and education
- Collection of information on:
  - numbers and type of health workers to be trained, and associated salaries
  - people responsible for ensuring both up-to-date materials and delivery of training
  - Internet access
  - IT requirements and/or other practical props
  - printing requirements
  - overheads
  - training room/venue costs
- Development of a training action plan using WHO's Guide to implementation and template action plans

Table 3. **Monitoring and feedback (check it)**

GOAL
Health care workers are monitored and given feedback on their compliance with best practices care and highlights of good performance and areas for improvement

WHAT SHOULD BE IN PLACE	RESOURCE CONSIDERATIONS (SET UP AND ONGOING)

PRIMARY CARE
 	
Human resources
• A trained IPC officer at the next administrative level (e.g. district) to support primary care facilities to monitor hand hygiene structural and process indicators
	At the next administrative level (e.g. district)
	• Numbers and types of personnel (who, how many and where they will be sourced) required to undertake:
	  – periodic or continuous observational monitoring and feedback (at least annually) – this role may be included within an IPC programme budget and may not be listed as a separate cost, depending on the setting
	  – periodic use of the WHO Hand Hygiene Self-Assessment Framework
	  – data entry, report writing and feedback to stakeholders and managers
	• Quantity and types of tools and supportive materials for monitoring IPC structural and process indicators and presenting results – e.g. printing if paper forms/reports used; IT requirements if electronic data used, including internet access
	• Per diem – e.g. for travel required to deliver/receive training – this role may be included within an IPC programme budget and may not be listed as a separate cost, depending on the setting

SECONDARY AND TERTIARY CARE
 	
Human resources
• Trained IPC team member(s) or at least one FTE trained IPC focal point (nurse or doctor) per 250 beds in charge of periodic or continuous monitoring (at least annual) of hand hygiene process and structure, and timely and regular feedback, as part of their role
	• Numbers and types of personnel (who, how many and where they will be sourced) and associated salaries required to undertake:
	  – periodic or continuous observational monitoring and feedback (at least annually): between 150 and 200 opportunities for hand hygiene should be observed in each surveyed unit (department, service or ward) – this role may be included within an IPC programme budget and may not be listed as a separate cost, depending on the setting
	  – periodic use of the WHO Hand Hygiene Self-Assessment Framework
	  – data entry, report writing and feedback to stakeholders and managers
	• Numbers and types of personnel to be trained on observational methodology
	• Quantity and types of tools and supportive materials for monitoring IPC structural and process indicators and presenting results – e.g. printing if paper forms/reports used; IT requirements if electronic data used, including internet access
	• Costs associated with automated monitoring systems, if used
	• Per diem – e.g. for travel required to deliver/receive training – this role may be included within an IPC programme budget and may not be listed as a separate cost, depending on the setting

Tools to support estimation of required resources

- Hand Hygiene Self-Assessment Framework 2010. Geneva: World Health Organization; 2010 (https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/monitoring-tools).
- Guide to implementation: a guide to the implementation of the WHO multimodal hand hygiene improvement strategy. Geneva: World Health Organization; 2009 (https://www.who.int/publications/i/item/a-guide-to-the-implementation-of-the-who-multimodal-hand-hygiene-improvement-strategy). This includes template action plans (also available at: https://www.who.int/campaigns/world-hand-hygiene-day/clean-hands-2012). See section II.3 for a full list of resources.
- Water and Sanitation for Health Facility Improvement Tool (WASH FIT): a practical guide for improving quality of care through water, sanitation and hygiene in health care facilities. Geneva: World Health Organization; 2017 (https://apps.who.int/iris/handle/10665/254910).
- Hand hygiene technical reference manual. Geneva: World Health Organization; 2009 (https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/monitoring-tools).
- Observation form. Geneva: World Health Organization; 2009 (https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/monitoring-tools).
- Data entry analysis tools. Geneva: World Health Organization; 2009 (https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/monitoring-tools).
- Protocol for surgical site infection surveillance with a focus on settings with limited resources. Geneva: World Health Organization; 2018 (https://www.who.int/publications/i/item/protocol-for-surgical-site-infection-surveillance-with-a-focus-on-settings-with-limited-resources).

Other supporting actions

- Use of the Hand Hygiene Self-Assessment Framework to understand the current situation and identify gaps regarding monitoring and feedback
- Collection of information on:
    - numbers of wards/units/primary health facilities to be monitored
    - numbers and types of health workers to be trained, and associated salaries
    - IT requirements
    - printing requirements
    - training rooms/venue costs
- Development of a hand hygiene monitoring action plan (outlining units to be surveyed) using WHO's Guide to implementation and template action plans

Table 4. Reminders and communications (sell it)

GOAL
Health workers, patients and visitors are reminded about when and how to perform hand hygiene, and good communications are made to promote hand hygiene

WHAT SHOULD BE IN PLACE	RESOURCE CONSIDERATIONS (SET UP AND ONGOING)

PRIMARY CARE
 	
Human resources
• Trained IPC link person with responsibility for ensuring reminders and communications are in place
	At the next administrative level (e.g. district)
	• Numbers and types of personnel (who, how many and where they will be sourced) required to:
	  – display/refresh posters and other communication methods on why, when and how to ensure hand hygiene
	  – distribute hand hygiene leaflets and other communications – e.g. mailing costs
	  – undertake audits of posters/reminders
	  – support periodic local, national and international hand hygiene campaigns
	• Quantity and types of posters/leaflets and other communications messages and requirements for adaptation and printing (including translation to local languages)
	• Internet access

SECONDARY AND TERTIARY CARE
 	
Human resources
• At least one FTE trained IPC focal point (nurse or doctor) per 250 beds in charge of ensuring reminders and communications are in place, as part of his/her role
	• Numbers and type of personnel (who, how many and where they will be sourced) required to:
	  – display/refresh posters and other communication methods on why, when and how to ensure hand hygiene
	  – distribute hand hygiene leaflets and other communications – e.g. mailing costs
	  – undertake audits of posters/reminders
	  – support periodic local, national and international hand hygiene campaigns
	  – set up and maintain webpages, screen savers, radio messages, podcasts and other media
	  – determine the need for and source (as required) specialist communications input
	• Quantity and types of posters/leaflets and other communications messages
	• Requirements for adaptation and printing (including translation to local languages) and estimated costs
	• Internet access
	• Social media messages

Tools to support estimation of required resources
- Hand Hygiene Self-Assessment Framework 2010. Geneva: World Health Organization; 2010 (https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/monitoring-tools).
- Guide to implementation: a guide to the implementation of the WHO multimodal hand hygiene improvement strategy. Geneva: World Health Organization; 2009 (https://www.who.int/publications/i/item/a-guide-to-the-implementation-of-the-who-multimodal-hand-hygiene-improvement-strategy). This includes template action plans (also available at: https://www.who.int/campaigns/world-hand-hygiene-day/clean-hands-2012). See section II.4 for a full list of resources.
- Water and Sanitation for Health Facility Improvement Tool (WASH FIT): a practical guide for improving quality of care through water, sanitation and hygiene in health care facilities. Geneva: World Health Organization; 2017 (https://apps.who.int/iris/handle/10665/254910).

Other supporting actions

- Use of the Hand Hygiene Self-Assessment Framework to understand the current situation and identify gaps regarding reminders and communications
- Collection of information on:
  - numbers of wards/units/primary care facilities where posters will be displayed
  - IT requirements
  - printing requirements
  - translation requirements
- Development of a hand hygiene reminders and communications action plan (outlining printing requirements and overheads) using WHO's Guide to implementation and template action plans

Table 5. **Safety climate/culture change (live it)**

🎯 GOAL
Health workers and patients are nurtured and supported in a milieu that values hand hygiene, including allocation of a budget for hand hygiene

	WHAT SHOULD BE IN PLACE	RESOURCE CONSIDERATIONS (SET UP AND ONGOING)
PRIMARY CARE	**Human resources** • A trained IPC officer at the next administrative level (e.g. district) to secure leadership commitment and action on hand hygiene improvement within primary care • A trained IPC link person with dedicated (part-time) availability to advocate for hand hygiene	**Proportion of costs listed for the next administrative level (e.g. district) (see secondary and tertiary care row, below)** • Includes costs of hand hygiene coordinators/project managers overseeing improvement at the primary care level, leadership time to be a role model for and champion hand hygiene
SECONDARY AND TERTIARY CARE	**Human resources** • At least one FTE trained IPC focal point (nurse or doctor) per 250 beds in charge of securing leadership commitment and action on hand hygiene improvement, as part of his/her role	• Numbers and types of personnel (e.g. hand hygiene coordinators/project managers) to: – direct/coordinate hand hygiene improvement plans – coordinate a hand hygiene improvement team, including monthly meetings – secure senior leadership commitment – establish hand hygiene leaders/champions and role models across all disciplines – develop newsletters – undertake baseline assessments (including of barriers and levers); develop and implement action plans – develop (innovative) leadership and patient inclusive communications/information – e.g. advocacy videos – develop and implement reward schemes/incentives – e.g. free participation in training or conferences, awards – participate in and lead on local, national and international hand hygiene campaigns • Time of senior leaders/managers and other stakeholders to attend meetings (virtual and in person) if considered necessary in the setting (may be already considered part of the role, depending on the culture) • Meeting rooms for high-level meetings to secure support from leadership • Printing of action plans, leaflets, newsletters and other materials

Tools to support estimation of required resources
- Hand Hygiene Self-Assessment Framework 2010. Geneva: World Health Organization; 2010 (https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/monitoring-tools).
- Guide to implementation: a guide to the implementation of the WHO multimodal hand hygiene improvement strategy. Geneva: World Health Organization; 2009 (https://www.who.int/publications/i/item/a-guide-to-the-implementation-of-the-who-multimodal-hand-hygiene-improvement-strategy). This includes template action plans (also available at: https://www.who.int/campaigns/world-hand-hygiene-day/clean-hands-2012) and template letters to advocate hand hygiene to managers and to communicate hand hygiene initiatives to managers. See section II.5 for a full list of resources.

- Water and Sanitation for Health Facility Improvement Tool (WASH FIT): a practical guide for improving quality of care through water, sanitation and hygiene in health care facilities. Geneva: World Health Organization; 2017 (https://apps.who.int/iris/handle/10665/254910).

Other supporting actions

- Use of the Hand Hygiene Self-Assessment Framework to understand the current situation and identify gaps regarding safety climate/culture change
- Collection of information on:
  - key stakeholders (leaders/champions/role models) to be targeted, and associated salaries
  - IT requirements
  - printing requirements
- Development of a hand hygiene engagement action plan (outlining units to be surveyed) using WHO's Guide to implementation and template action plans

References

1. Hand hygiene for all initiative: improving access and behaviour in health care facilities. Geneva: World Health Organization; 2021 (https://www.who.int/publications/i/item/9789240011618).
2. Recommendations to Member States to improve hand hygiene practices to help prevent the transmission of the COVID-19 virus. Geneva: World Health Organization; 2020 (https://www.who.int/publications/i/item/recommendations-to-member-states-to-improve-hand-hygiene-practices-to-help-prevent-the-transmission-of-the-covid-19-virus).
3. Minimum requirements for infection prevention and control (IPC) programmes. Geneva: World Health Organization; 2019 (https://www.who.int/publications/i/item/9789241516945).
4. Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level. Geneva: World Health Organization; 2016 (https://www.who.int/publications/i/item/9789241549929).
5. Allegranzi B, Gayet-Ageron A, Damani N, Bengaly L, McLaws ML, Moro ML et al. Global implementation of WHO's multimodal strategy for improvement of hand hygiene: a quasi-experimental study. Lancet Infect Dis. 2013;13:843–51.
6. WHO guidelines on hand hygiene in health care. Geneva: World Health Organization; 2009 (https://www.who.int/publications/i/item/9789241597906).
7. Guide to implementation: a guide to the implementation of the WHO multimodal hand hygiene improvement strategy. Geneva: World Health Organization; 2009 (https://www.who.int/publications/i/item/a-guide-to-the-implementation-of-the-who-multimodal-hand-hygiene-improvement-strategy).
8. Luangasanatip N, Hongsuwan M, Limmathurotsakul D, Lubell Y, Lee AS, Harbarth S, et al. Comparative efficacy of interventions to promote hand hygiene in hospital: systematic review and network meta-analysis. BMJ 2015; 28;351:h3728.
9. OECD (2018), Stemming the Superbug Tide: Just A Few Dollars More, OECD Publishing, Paris. https://doi.org/10.1787/9789264307599-en
10. Hand Hygiene Self-Assessment Framework 2010. Geneva: World Health Organization; 2010 (https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/monitoring-tools).
11. Kilpatrick C, Tartari E, Gayet-Ageron A, Storr J, Tomczyk S, Allegranzi B, et al. Global hand hygiene improvement progress: two surveys using the WHO Hand Hygiene Self-Assessment Framework. J Hosp Infect 2018;100:202-206.
12. Global progress report on water, sanitation and hygiene in health care facilities: fundamentals first. Geneva: World Health Organization; 2020 (https://www.who.int/publications/i/item/9789240017542).
13. Cost effectiveness and strategic planning (WHO-CHOICE): CostIt. In: World Health Organization [website]. Geneva: World Health Organization; 2021 (https://www.who.int/choice/toolkit/cost_it/en/).
14. Core questions and indicators for monitoring WASH in health care facilities in the Sustainable Development Goals. Geneva: World Health Organization and United Nations Children's Fund; 2018 (https://www.who.int/water_sanitation_health/publications/core-questions-and-indicators-for-monitoring-wash/en/).

Note: all URLs accessed 12 April 2021.

ANNEX: IMPROVING HAND HYGIENE THROUGH A MULTIMODAL STRATEGY

WHO's multimodal hand hygiene improvement strategy

- Effective hand hygiene improvement programmes can prevent up to 50% avoidable infections acquired during health care delivery and generate economic savings on average 16 times the cost of implementation.
- The multimodal improvement strategy is highly effective, leading to significant improvement of key hand hygiene indicators in health care facilities. It comprises five elements.
- Implementing a multimodal strategy leads to a reduction of health care-associated infections and antimicrobial resistance, and substantially helps to stop outbreaks.

Use the five elements to drive improvement

All elements are **essential** and **complementary.**

The **five critical elements** to be implemented as part of an infection prevention and control programme at the health care facility level, in an integrated manner, can be simplified as: Build it; Teach it; Check it; Sell it and Live it (see visual).

Track progress

- Track progress over time through use of the Hand Hygiene Self-Assessment Framework.
- The Framework is a **diagnostic tool,** identifying strengths and gaps requiring improvement across each of the five elements.

SYSTEM CHANGE (Build it)

- Achievement of continuous availability of the necessary infrastructure, materials and equipment to effectively perform hand hygiene at the point of care.
- This includes the reliable and uninterrupted provision of alcohol-based hand rub at the **point of care,** continuous supplies of safe, clean water, soap, single-use towels, and an adequate number of functioning sinks.

TRAINING AND EDUCATION (Teach it)

- **Tailored education and practical training of clinical staff, patients and visitors** about the importance of hand hygiene to better understand when and how it should be performed.
- Education should also address **all other health workers,** including hospital administrators, cleaning personnel and community health workers.

MONITORING AND FEEDBACK OF HAND HYGIENE INDICATORS (Check it)

- Regular **monitoring and evaluation** (ideally using standardized tools) of hand hygiene infrastructures (location of facilities at the point of care, consumption of soap and alcohol-based hand rubs), including knowledge of and compliance with best practices.
- Providing regular **feedback** to health workers and senior management using local data is a very powerful approach to raise awareness and achieve improvement of practices.

REMINDERS IN THE WORKPLACE/ COMMUNICATIONS (Sell it)

- Posters, stickers, visual and vocal prompts, banners, screensavers. They can **continually prompt and remind** health workers about the importance of hand hygiene and the indications when to perform it.
- They also help to **involve patients and their visitors** and inform them of the level of care they should expect from health workers with regards to hand hygiene.

SAFETY CLIMATE/CULTURE CHANGE (Live it)

- Creating an organizational environment that prioritizes high compliance with hand hygiene to achieve patient and health worker safety.
- At the **institutional level,** this should include the **allocation of resources** for hand hygiene programmes and **clear messages of support** for hand hygiene from **leaders** within the institution, setting benchmarks or targets, and having hand hygiene champions.
- At an **individual level,** the aim is to ensure that health workers identify hand hygiene as a **priority** that reflects their commitment to do no harm to patients. Partnering with patients and patient organizations to promote hand hygiene may also promote a climate of patient safety, but should be undertaken sensitively and in close consultation with key stakeholders, including health workers and patient representatives.

World Health Organization