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Hand Hygiene Program Implementation Guide

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Public Health Ontario

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Table of Contents

Introduction

Hand hygiene is essential for preventing the spread of infections and multi-drug-resistant organisms. The main objective of hand hygiene is to reduce preventable health care-associated infections (HAIs) by improving hand hygiene practice among health care workers.

This guide offers practical strategies to improve hand hygiene practice among health care workers. It provides step-by-step instructions for implementing a hand hygiene program, while also supporting the development of new programs and the evaluation or improvement of existing ones. By following these recommendations, health care settings can strengthen infection prevention and enhance patient safety.

Primary Audience

This guide is intended to be used by those working in acute care, long-term care, and retirement care settings. This can include:

- The hand hygiene program implementation lead.
- Other staff supporting the implementation of this program such as team leads and unit managers/champions.
- Support can also come from technical experts such as infection prevention and control professionals, patient safety managers, risk management staff, occupational health and safety teams, communications specialists, and senior leadership.

In addition, other settings (such as primary care and congregate settings) may benefit from the materials and approaches used in this guide, but the approaches may require modifications to suit the particular setting. Support for adaptations is available from your IPAC Hub, local Public Health Unit, or Public Health Ontario (PHO).

How to Use This Guide

This guide is designed to walk your implementation team through hand hygiene program implementation steps. Start at Step 1 and work through the steps in order. Each section provides practical actions, resources, and tools to help you plan, implement, and sustain hand hygiene improvements.

Use the steps below as your roadmap:

Before You Begin

- Each member of the implementation team should read the entire guide.
- The guide explains program components, recommended hand hygiene strategies, available resources, and the five steps for implementation.

Step 1: Get Started (Section 1)

- Form your implementation team.
- Assess readiness using Considerations for Readiness and Sustainability (Appendix B).
- Collect staff input to identify priority areas (Appendix C).
- Plan communication early to share program details across your organization.

Step 2: Review and Plan Strategies (Sections 2, Section 3, Section 4)

- Review recommended strategies and related resources.
- Tailor strategies to your setting (Section 3).
- Plan for sustainability (Section 4).
- Use the summary of tasks to sequence actions and assign responsibilities.

Step 3: Plan for Implementation (Section 3)

- Understand how changes impact outcomes.
- Use guidance on green-light, yellow-light, and red-light changes.
- Access resources for planning evaluations aligned with program goals.

Step 4: Implement Improvement Strategies (Section 4)

- Put strategies into practice.
- Use practical questions to maintain delivery and impact.
- Monitor and address factors that affect sustainability.

Step 5: Evaluate, Improve, and Sustain (Section 5)

- Plan process and outcome evaluations.
- Use evaluation data to guide improvements and long-term sustainability.
- Refer to examples and resources to support evaluation efforts.

Background

Great strides have been made in health care across Ontario to improve hand hygiene compliance. Those who contribute to advancing the practice of hand hygiene know that there is a need to keep this practice as an individual, team, organizational and provincial priority for patient/resident/client and provider safety.

While many acute care organizations report hand hygiene compliance rates, these rates are often based on direct observations. This does not always confidently reflect daily practice. Depending on how direct observations are conducted, compliance rates can be lower than rates based on covert observations or electronic monitoring methods.[1-4]

Strategies to improve hand hygiene have also evolved. As a provincial agency that provides leadership, scientific and technical expertise in infection prevention and control across health care settings, PHO's goal is to continue to find ways to synthesize research from multidisciplinary perspectives and help translate that knowledge into practical resources for action.

The original Just Clean Your Hands (JCYH) program has been updated to:

- Bring forward best available evidence and practical guidance on how to implement hand hygiene improvement strategies.
- Promote hand hygiene improvement strategies that can address persistent challenges to reaching individual hand hygiene goals. This includes a renewed focus on staff motivation, supporting the use of team-based strategies that will help demonstrate an organizational commitment and support for this practice, and providing resources that help make this practice more habitual and integrated into daily work.
- Provide guidance on sustainability.
- Meet the needs of a broader audience including acute care, long-term care, and retirement homes but may be adapted for other sectors.
- The name of the program has changed from JCYH to Hand Hygiene Program.

Ontario's JCYH program was launched in 2008 and helped shape hand hygiene improvement efforts across the province. That program emphasized Your Four Moments for Hand Hygiene, the importance of proper technique and the placement of alcohol-based hand rub at point-of-care. A multifaceted approach was promoted.

The updated program continues to build on these best practices and a multifaceted approach, with a strong focus on the implementation of hand hygiene improvement strategies.

Hand Hygiene Program

This program is evidence-based and theory-informed. It builds on proven practices with a strong focus on implementing effective hand hygiene strategies. This includes how to optimize strategies promoted in the original JCYH program like education, reminders and environmental changes and supports. The revised program also promotes innovative strategies that address persistent challenges individuals face reaching their hand hygiene goals. This program also acknowledges that one size does not fit all. It encourages thoughtful modifications as needed to align with the needs and preferences of your sector.

Program Components

Five Hand Hygiene Practices

Five hand hygiene practices include four moments for hand hygiene and proper technique:

- **Moment 1:** Clean your hands BEFORE touching a patient/resident/client or touching any object or furniture in the patient/resident/client environment.
- **Moment 2:** Clean your hand immediately BEFORE any aseptic procedure (and before putting on gloves).
- **Moment 3:** Clean your hands immediately AFTER an exposure risk to body fluids (and after glove removal).
- **Moment 4:** Clean your hands AFTER touching a patient/resident/client or touching anything in the patient's/resident's/client's environment.
- **Technique:** Use proper hand hygiene technique. Clean your hands with alcohol-based hand rub (ABHR) unless visibly soiled. If soiled, use soap and water. Cover all surfaces of hands and rub until dry. Hands should feel wet for at least 15 seconds while rubbing with ABHR before drying or lathered with soap for 15 seconds. If hands feel dry before the 15 second mark or all surfaces of the hand were not covered, then apply additional product.

Hand Hygiene Improvement Strategies

- **Environmental supports:** Ensuring environments and supports are in place to adequately promote these practices.
- **Education:** Continuing education for health care workers including why, when and how they should perform hand hygiene.
- **Team-based problem-solving:** Identifying team priority, involving local leaders and role models, providing peer support, addressing barriers and foster engaging discussions.
- **Habit formation:** Applying habit formation techniques to make the practice more habitual and integrated into daily work.

Figure 1 illustrates a visual overview of the Hand Hygiene Program Components which includes hand hygiene improvement strategies and hand hygiene practices. Section 2 will provide a more detailed overview of the hand hygiene improvement strategies including links to relevant resources.

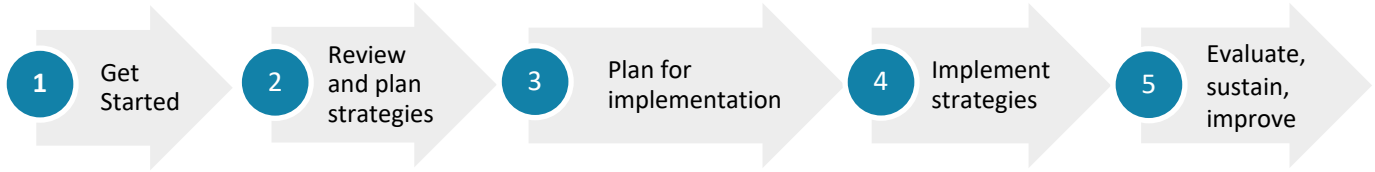
Figure 1: Hand Hygiene Program Components

Implementation Steps

A good implementation process will help take what is on paper and put it into action. Unfortunately, not all implementation efforts take advantage of what the evidence tells us is needed for successful, long-lasting change. The implementation steps in this guide were inspired by Getting to Outcomes® (GTO), an internationally recognized implementation model that helps teams deliver effective programs with a results-oriented approach.[5-7] Figure 2 outlines five steps implementation teams can take to implement the hand hygiene improvement strategies. While the overview of the process looks linear, approaches described in each step do support a more cyclical approach aligned with quality improvement methodology. You will notice that the process encourages an early focus on planning for implementation. This provides an opportunity to embed processes to gather feedback from staff before delivering hand hygiene improvement strategies.

This program guide will give you a full summary of the components of the program, an overview of best practices for implementation, available resources and a rationale for recommended approaches.

Figure 2: Hand Hygiene Program Implementation Steps



Step 1: Get Started

Form an Implementation Team

Your organization might already have key individuals engaged in supporting a hand hygiene program, providing education or coaching support. An implementation lead is recommended to coordinate updates or introduce the new program. If hand hygiene is part of your setting's quality improvement plan you may already have a Lead Clinician, Clinical Director or Program Director who is already the lead for improvements in this area. Leads can be supported by an implementation team to plan, execute and monitor implementation of hand hygiene improvement strategies.

The purpose of the implementation team is to guide the organization through the following activities to ensure a successful launch and long-term success of the Hand Hygiene Program:

- Discuss whether your organization is ready to implement this program and identify priorities and goals
- Plan for the roll out of hand hygiene improvement strategies
- Monitor how well the program is implemented
- Solve problems and plan for sustainability
- Complete the five steps of the implementation process

The implementation team's roles and titles will vary by setting. Some may choose to have a centralized implementation team or a unit level implementation team. If your setting has hand hygiene on the quality improvement plan, it would be ideal to include the Lead Clinician, Clinical Director or Program Director who is leading that initiative.

A centralized implementation team might include:

- Infectious Disease Physician
- Quality Improvement Lead
- Educator
- Infection Control Professional

A unit level implementation team might include:

- Educator
- Infection Control Professional (ICP)
- Unit Manager
- Hand Hygiene Auditor
- Charge Nurse

You should have one person who is able to support coordination including scheduling meetings, planning the agenda, taking notes and holding the team accountable for action items. Use Appendix A to help organize and articulate a terms of reference for your implementation team. You will want a minimum of three to five people and ensure there is adequate time to meet regularly during the planning stage (every two weeks) and to continue to meet monthly to monitor implementation of the program. There will be several other individuals the implementation team can reach out to for periodic input or be involved in occasional meetings for decision-making.

For example:

- When making environmental changes and supports to improve access to hand hygiene products, the implementation team would involve many internal partners; however, not all those individuals will be part of the implementation team.
- You may include a team member like a role model who has an interest in supporting hand hygiene or professional practice.

Having a small team as opposed to just an implementation lead can help ensure some of the responsibilities are shared and brings in more diverse skill sets and perspectives. This helps with workload but can also be helpful if there is turnover.

Implementation of a new program is an active process that requires a dedicated team that is willing and able to complete tasks. This will help to ensure the program is implemented as planned.

> **!** Having an implementation team that delivers tools, training and supports for program implementation has been found to be effective in increasing adoption and implementation of programs.[8]

Assess Readiness

After the implementation team has been formed and before planning for how to deliver strategies, team members should review the Considerations for Readiness and Sustainability (Appendix B). This resource is designed to facilitate a discussion about readiness for implementation. It is based off existing resources designed to consider fit, feasibility and readiness[9,10] including the Long-term Success Tool.[11]

Lack of readiness, capacity for implementation and/or an issue of fit between the program and the practice setting can place a burden on those implementing a program, and impact other initiatives and implementation outcomes. Taking these steps has been shown to predict whether or not implementation will be successful. These early steps can help avoid challenges down the line:

Target and Prioritize

At this stage, the implementation team can consider whether to focus implementation of hand hygiene improvement efforts in specific areas of the health care setting. Assessing Hand Hygiene Perceptions (Appendix C): This resource provides instructions on how to collect information to inform decisions about where to focus improvement efforts and it can help:

- Assess knowledge
- Confidence
- Obstacles to accessing hand hygiene resources
- Leadership support and culture
- Use of improvement strategies
- Intentions to make hand hygiene a priority for improvement

Baseline results can be used to set targets for improvement. Section 5 on evaluation promotes the use of a survey to guide a before and after assessment to examine the outcomes of improvement efforts.

Prepare Key Messages

Another helpful step is to list groups of partners including leaders at various levels of your sector. It is important to identify and authentically engage with the diverse groups of partners who can help make change happen. The implementation team can identify important key messages they will want to share with different groups. The communication plan can serve five functions:

- Build the collective commitment across the organization
- Facilitate information gathering and input to support quality improvement
- Celebrate successes
- Prevent misunderstanding to reduce barriers.

Ensure Hand Hygiene Compliance Accuracy

While many acute care facilities in Ontario report hand hygiene compliance rates above 85%[12], these rates are often based on direct observations. While these results have been found in some health care settings, results may not accurately reflect daily hand hygiene practices.

The implementation team may want to consider how to communicate the discrepancy between direct observations and daily hand hygiene practices or more generally how to frame the need for ongoing improvement. The team may also consider ways of measuring hand hygiene success that do not only rely on audit data.

Implementation Team Tasks

Discuss readiness for implementation by reviewing the Considerations for Readiness and Sustainability (Appendix B). Consider collecting information from staff to inform areas of focus and to support future evaluations. Outline key messages for groups of stakeholders.

Step 2: Review and Plan Strategies

As implementation teams review each strategy, they can start thinking about the logistics of how to support the activities (i.e., who, what, when, where, how). This should be documented. The process of building these plans can improve teamwork and communication with partners. The ongoing review of the plan can help identify the need for changes.

Hand hygiene improvement strategies in this program should be implemented in a stepped approach. Some are foundational to support other improvement activities. Section 4 includes guidance on how implementation teams can carefully tailor the guidance in this section to fit the needs of their health care environment and Section 5 also provides more guidance on planning for sustainability.

Hand Hygiene Improvement Strategies

Environmental Supports

It is recommended that implementation teams implement this strategy first. The other hand hygiene improvement strategies in this guide will only work if the environment is set up to support hand hygiene. Some strategies are foundational to support other improvement activities. This strategy is making sure that hand hygiene products are located where they are needed, visible, within reach, fully stocked and functional[13].

Taking Action

Conduct an assessment to optimize product placement, product selection and maintenance processes. Engage front-line staff in the process. Implementation teams are tracking progress, communicating changes, and gathering feedback to address barriers and ensure changes work as intended.

Making Change Stick

Maintain environments to support hand hygiene and address issues promptly. After improvements, confirm with teams that barriers are resolved and changes are effective. Prioritize regular assessments in areas where hand hygiene is critical or hands-on care is frequent.

Resources

Product Placement

Hand Hygiene Product Placement provides resources to guide product placement in patient/resident/client rooms and hallways, gather feedback from staff, select products, and ensure processes are in place to adequately maintain supplies and product.

The following checklists should be used by an IPAC lead or designated leader.

- Checklist 1: Hand Hygiene Product Placement Checklist: Patient, Resident or Client and Hallway Area
  Considerations for your sector to assess the placement of hand hygiene products in order to make them accessible and convenient for health care workers in patient/resident/client care and hallway areas. This checklist can be used on a minimum annual basis or as decided by your organization.
- Checklist 2: Maintenance of Hand Hygiene Products and Equipment Checklist
  Considerations to ensure hand hygiene products are available, functioning and safe for use. This checklist can be used on a regular basis, such as monthly, or as decided by the organization.

Prompts and Cues

Even with the best intentions, health care workers may forget or be distracted from performing hand hygiene. Prompts and cues remind health care workers to perform hand hygiene at the right time. There is not a one-size fits all approach to selecting prompts and cues as this will vary by health care environment and available resources. Whenever possible involve staff in selecting and placing point-of-care prompts and educational reminders in the health care environment. Here are some examples of prompts and cues that may be considered by the implementation team:

- Place an ABHR point-of-care prompt near the ABHR dispenser as a visual cue.
- Colour coding hand hygiene product (ABHR, soap, and moisturizing lotion) dispensers using a different colour for each. This will help health care workers quickly and easily distinguish between the different products. This also helps to avoid errors when it comes time to replace product in empty dispensers (i.e., restocking empty lookalike containers).
- Strategically place educational reminders for health care workers in the environment. This will help health care workers on how to perform hand hygiene correctly, the four moments for hand hygiene, using gloves or clean supplies, the importance of hand care, etc. Examples of locations for educational reminders include:
  - On the unit walls
  - Computer monitors
  - Workstation on Wheels (WOWs) monitors
- Explore other reminder options where additional resources may be available (e.g., waiting area televisions, screen savers etc.)
- Health care workers choose a code word to use among themselves to signal to a peer that they missed an opportunity and need to perform hand hygiene.

Implementation Team Tasks

Consider as a team if there are areas in the environment that have a greater need for environmental changes and supports.
Assign individuals to key assessment activities.

Education

Before moving forward with efforts to improve hand hygiene, health care workers need foundational education on hand hygiene including best practices and rationale. In addition to this education, staff may have questions about how to apply these practices, or they may need to have specific concepts reviewed.

Those who provide education to staff about hand hygiene (e.g., ICPs, nurse educator) may need additional supports to deliver this information well and answer questions.

This section will provide resources to meet all these needs.

Taking Action

This strategy involves delivering regular education on hand hygiene and distributing educational resources to fit needs. Delivering educational reminders and activities can be executed through the team-based problem-solving strategy.

Making Change Stick

Sustain knowledge, skills, and confidence in hand hygiene best practices through annual and orientation education. Reconnect yearly with front-line staff and support teams to identify and address ongoing needs.

Resources

Annual/orientation education: these resources help teach what good hand hygiene looks like and the rationale for these practices.

Video Series:

- How to Hand Rub
- How to Hand Wash
- Putting on Gloves
- Taking off Gloves

Presentations:

- Principles of Hand Hygiene
- Hand Hygiene Overview and New Program Strategies

To help individuals and teams with the application of the four moments of hand hygiene we recommend the following activities:

- Take a Moment
- Practice Your Technique

Educational reminders: materials to help remind or reinforce or build on foundational education.

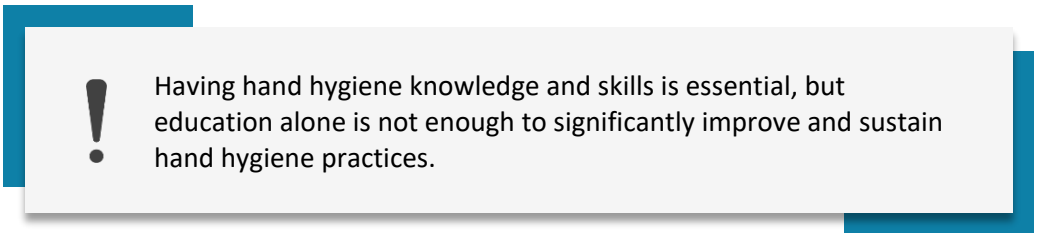
- 4 Moments of Hand Hygiene Lanyard
- Glove Use and Hand Hygiene Frequently Asked Questions

Posters:

- 4 Moments of Hand Hygiene
- Caring for Your Hands
- How to perform hand hygiene using water and soap
- How to perform hand hygiene using ABHR

Resource for Educators: materials for those who deliver education on hand hygiene or those who may be asked questions about hand hygiene or hand care.

- Four Moments of Hand Hygiene Frequently Asked Questions
- Hand Hygiene Hand Care Program
- How to Protect Your Skin: A Self-Assessment Checklist



Implementation Team Tasks

Gather feedback to improve educational materials (e.g., adding examples for specific groups like allied health or housekeeping to apply the four moments). Review options for activities and resources and assign someone to update and distribute materials.

Team-Based Problem Solving Strategy

This strategy consists of a bundle of activities implemented at the team level through interactive sessions. To ensure success, it is important to identify the key roles and become familiar with the interactive sessions and supporting resources.

Taking Action

To deliver this strategy, groups of health care workers meet with local leaders and role models for three interactive meetings to identify priority hand hygiene practices to improve. During these interactive sessions, teams will identify a priority area, create action plans and implement strategies that help one another sustain the practice and build new habits.

Making Change Stick

Deliver this strategy on an annual basis to stay on top of issues and obstacles that impact hand hygiene practices.

This approach aims to make hand hygiene improvement more engaging and tailored to the specific needs and priorities of each team.

Adapted from the *Helping Hands*[14] trial by Huis and colleagues, it involves:

- Assessing team performance on five hand hygiene practices (four moments plus technique)
- Identifying one priority area for improvement
- Developing a focused action plan to address that priority

The interactive sessions encourages dialogue about gaps between reported and actual practice and empowers teams to choose their focus.

> ! This strategy will demonstrate commitment to hand hygiene, help fuel culture change, and help you identify opportunities to support health care workers with this practice.

Here is an overview of the steps to take for the team-based problem-solving strategy:

1. Select leader and role model(s). It is ideal to have more than one role model to support the strategy.
2. The leader and role model(s) should review this document, role expectations, and supporting resources, and use the provided materials for the interactive sessions to guide meetings. Each session includes agenda, objectives, and activities to facilitate discussion, set goals, and develop an action plan.
3. In preparation for the interactive sessions, leaders or role models should gather recent hand hygiene compliance reports, including any previously identified challenges, to share with the team. This information is especially valuable during the first interactive session, when the group is identifying barriers, setting goals, and developing action plans.
4. The leader will set up at least 3 interactive session with the team and role model. Ideally interactive sessions are scheduled monthly or every two months, however, additional interactive sessions may be needed to accommodate staff and unit schedule. The frequency and timing between sessions may be adjusted to meet operational needs. This process may extend to a year depending on identified goals and operational priorities.
5. During interactive session 1, the leader will introduce the strategy, identify the role model, and set goals and an action plan. Between meetings, the leader checks in regularly with staff and role models to provide support and coaching and uses motivational communication tools when discussing hand hygiene.
6. During interactive session 2 or additional interactive session(s), the leader or role model reviews the goals and action plan created in session 1 to evaluate progress and identify areas for improvement. The process outlined for interactive session 2 can be repeated as needed until the goal(s) and action plans are achieved. Communicate the meeting minutes to any staff members who were unable to attend and provide information on the goal(s) and strategies the group decided on.
7. Conduct interactive session 3 once the action plan from earlier sessions have been completed. Recognize and celebrate achievements as action plans are completed. When a goal is reached, the team may proceed with a new cycle of interactive sessions to establish further hand hygiene improvement goals and action plans.

Resources

Use these resources at interactive sessions to assist and enhance the implementation of the strategy:

- Steps to Hand Hygiene Team-Based Problem Solving Strategy: Guide leaders and role models in applying a team-based problem solving approach, including how to facilitate interactive sessions with supporting resources such as worksheet and checklist.
- Team-Based Problem Solving Strategy Interactive Sessions: This presentation supplements the Steps to Hand Hygiene Team-Based Problem Solving by guiding implementation teams, leaders, and role models in applying a team-based problem solving strategy, outlining key concepts and steps to support consistent implementation through interactive sessions.
- Tips for Hand Hygiene Role Model: Provides specific guidance on this role and selection. It also includes actions that role models can take to support their colleagues.
- Techniques for Supportive Discussion about Hand Hygiene: Motivational techniques and new ways to communicate the importance of hand hygiene that can be used to support front-line staff.
- Providing Peer Feedback on Hand Hygiene: Tips on how to provide constructive inputs and comments to improve hand hygiene practice of colleagues.
- Scaling Activity: An activity to visualize progress in a numerical way. This can support the team in exploring how individuals perceive the performance of their team with regards to hand hygiene practices.

Implementation Team Tasks

Identify a unit or team to initiate the strategy. Engage local leaders and role models to facilitate interactive sessions with staff and set a goal that addresses gaps in hand hygiene practice.

Habit Formation Strategy

The goal of this strategy is to support individuals to make the practice of hand hygiene more habitual and integrated into daily work. This strategy is about providing guidance to health care workers to use behaviour change techniques to strengthen habits in support of personalized goals.

As hand hygiene is a repetitive and automatic behaviour, we may not even realize that we have missed an opportunity or skipped a step as part of proper technique. This means that even when we have knowledge about best practices, a supportive environment, and motivation we can still miss hand hygiene moments. This is called the “intention-action” gap. Applying habit formation techniques can help close this gap.

Taking Action

Promote the resource to help staff learn how to apply behaviour change techniques to improve their hand hygiene and overcome obstacles. Implement this strategy at the individual level as part of professional development.

Making Change Stick

The implementation team can explore ways to continue promoting this strategy. Individuals can use the strategy to support any type of change they want to make at work or outside of work.

How to optimally deliver the strategy:

- This should be promoted as an optional and additional strategy, not a mandated activity, for it to be effective at changing practice.
- This strategy is only suitable for health care workers who are motivated to improve some aspect of hand hygiene and is meant to be used in conjunction with the other hand hygiene strategies.

Resources

Distribute the resources to health care workers who are interested in learning about habit formation and applying specific techniques to support a personalized goal to improve their hand hygiene practice.

- Steps to Forming Habit: Describes the steps to take to develop new habits applying specific techniques to support a personalized goal to improve their hand hygiene practice.
- Habit Formation Worksheet: This tool is intended to help health care workers in recording and documenting a new goal towards improving hand hygiene practice.

Implementation Team Tasks

The implementation team develops a plan to promote the strategy and distribute supporting resources. Feature it during team-based problem-solving meetings or embed it in annual education.

Step 3: Plan for Implementation

Thoughtful changes to programs that are carefully designed to align with the needs of the target audience can improve engagement and acceptability and ultimately lead to improved outcomes.[15] Some changes can be detrimental and reduce the impact of a program.

It is important to review this section before completing an implementation plan. As the implementation team reviews each strategy, they might start to see the need for changes to accommodate the unique structure, resources, preferences and processes of their environment.

There are three types of program changes described in this section.[6]

● Green-Light Changes

These changes are easy to make and could enhance the outcomes of the program.

Type of change	Potential impacts
Use different language and examples that are relevant for your environment. Update or customize statistics and other information unique to your environment.	These changes can improve the fit and relevance of the program activities and materials.
Use different methods or activities to engage staff in improvements to the environment and supports for hand hygiene. Add activities to reinforce learning. Make activities more interactive and appealing to different styles of learning.	These changes can enhance participation and outcomes of activities.
Use existing evaluation and quality improvement approaches and tools to implement the program.	This provides an opportunity to leverage existing knowledge, skills and tools that support more effective implementation and better outcomes.

● Yellow-Light Changes

These changes should be made carefully. The impact of these types of changes are more complex and may require consultation with Public Health Ontario to understand their impact.

Type of change	Potential impacts
Add activities to address additional topics. Replace or supplement materials.	There are specific principles and communication approaches embedded throughout the program materials.
Use other models or tools that teach the same skill. Replace activities.	The team-based problem-solving strategy and habit formation resources are based on evidence. Omitting specific techniques (e.g., goal setting) could impact the effectiveness of these strategies.

● Red-Light Changes

These changes might make the program less effective and are generally not recommended.

Type of change	Potential impacts
Changes to the description of best practices for hand hygiene including the four moments and proper technique.	The practices in this program are supported by the best available evidence to effectively reduce the spread of infectious agents on the hands of health care workers.
Eliminating hand hygiene improvement strategies.	Each strategy is designed to address unique barriers to performing hand hygiene. Omitting a strategy may reduce the effectiveness of the program.
Changing the order of strategies.	Some of the strategies will not work optimally without first setting up foundational supports. For example, staff have to have adequate access to hand hygiene products before starting other strategies.
Eliminating activities from the team-based problem- solving strategy. Reducing the interactive open-ended question component for this strategy.	This strategy targets a number of unique barriers and facilitators that influence hand hygiene practices that are not addressed in other strategies. This includes building social support and a more positive climate where hand hygiene is expected and supported in the organization.
Reducing the role of local- leaders in supporting the team-based problem- solving strategy.	This strategy is founded on improving perceptions that local leaders expect and support hand hygiene practices. It is critical for them to be involved in some way in the delivery of the strategy.
Eliminating opportunities for staff to be consulted on improvements to environmental changes and supports.	Staff provide valuable insights on ongoing issues with hand hygiene products. This also provides a way to keep staff informed about improvements.
Not providing rationale for hand hygiene practices.	When practices are repetitive, time-consuming and influenced by many obstacles, it is critical to provide a meaningful rationale.
Eliminating the focus on selecting and supporting role models.	This role is a core component assisting with social prompts and on-site coaching and support.
Making the habit formation strategy mandatory for staff to complete.	This strategy is only intended for individuals who are motivated to improve their hand hygiene practice.
Eliminating the recommended implementation planning activities.	These are core activities supported by implementation research that when used improve implementation quality, the implementation experience and outcomes.

Step 4: Implement Improvement Strategies

Questions for Sustaining Improvement Strategies

The following questions can guide the implementation team to consider how to sustain the delivery of the hand hygiene improvement strategies and continue the work of the implementation team.[5]

1. Where will meeting notes, completed assessments, implementation plans, evaluation data and results be kept?
2. Who will be in charge of making the program happen?
3. Who else is in support of and needs to be involved in keeping the program going?
4. Who will have direct oversight of the program going forward?
5. Are there ways to integrate aspects of this program into existing improvement efforts?
6. Can hand hygiene education be integrated into orientation or annual refreshers?
7. How often should the need for educational reminders be reviewed and updated? Who is responsible for this?
8. Are there processes in place to routinely assess the environment and supports using available assessment tools? Who is responsible for this?
9. How can we keep staff trained to support the team-based problem- solving strategy?
10. Can the team-based problem- solving strategy be delivered on an annual basis? Can it be used to support improvements in other areas?
11. How can we continue to promote the habit formation resources?

Monitoring Factors that Affect Sustainability

Section 2 introduced the Considerations for Readiness and Sustainability (Appendix B). These statements can be used more than once by the implementation team to identify and discuss emerging changes that might impact sustainability.

Evaluation and Sustainability

After the initial delivery of the hand hygiene improvement strategies, the implementation team can consider the results of the process and outcome evaluation (see Section 5) to inform what is working and how to sustain those activities. Planning for sustainability could mean removing or changing some strategies if they do not meet a current need. The following questions are recommended for the implementation team to consider:

- Were we able to deliver the selected hand hygiene improvement strategies well?
    - If yes, are our results good enough to continue using the hand hygiene improvement strategies?
    - If no, are there other strategies or changes we could make to improve how well strategies are delivered?
- Do the results that are important to our organization justify the continuation of the program as it has been implemented?
    - If no, have the needs shifted overtime? Is a new approach to improvement needed?
    - If yes, how will those strategies be sustained?

Implementation Team Tasks

Complete the questions for sustaining hand hygiene improvement strategies. Decide how often to complete the Readiness and Sustainability Questionnaire to monitor factors that might affect outcome. As part of the ongoing monitoring and evaluation activities, implementation teams can review the results of any evaluations of the program after an initial period of implementation (12–18 months) and recommend next steps.

Step 5: Evaluate, Improve and Sustain

At Public Health Ontario we encourage health care settings across the province to evaluate their efforts to implement this program and share their lessons learned and successes.

The evaluation process is an essential step to ensuring programs are delivered with quality to support sustainable practice change. The evaluation can help your implementation team find opportunities for improvements and help you plan for sustainability. An early focus on planning for evaluation provides an opportunity to embed processes to gather feedback from staff before delivering hand hygiene improvement strategies.

Process Evaluation: How Well Did We Implement?

A process evaluation can gather information to support ongoing improvements. This type of information can also help explain outcomes. For example, if targets are not reached, this might be due to how well the strategy was delivered and received. Implementation teams can consider monitoring how well the hand hygiene program is being delivered. This includes things like:

- Tracking attendance (e.g., participation in education, number of staff reached by the team-based problem-solving strategy, types of professional roles that participated)
- Satisfaction of staff
- Perceptions from those involved in delivering strategies about:
    - How well strategies were delivered
    - Feedback about applicability of the strategies for their setting

Outcome Evaluation: Did We Reach Our Goals?

It is important to demonstrate the value of the program over pre-existing efforts to improve hand hygiene. This can be done in a variety of formal or informal ways.

The program is designed for ongoing improvement. An outcome evaluation can be planned after the initial delivery of a single hand hygiene improvement strategy or after a planned cycle.

Goal Based Approach

What are your implementation team's goals for hand hygiene? For example, broad goals might focus on making hand hygiene a more important priority, improving hand hygiene practices, or ensuring environments and supports are in place to adequately support hand hygiene. Implementation teams can prioritize what goals they want to focus on.

Outcomes do not have to be limited to monitoring hand hygiene compliance rates. Implementation teams can consider measuring changes in attitudes and intentions.

Assessing Hand Hygiene Perceptions (Appendix C): This resource was designed for this program and it can be used to help you assess knowledge, confidence, obstacles to accessing hand hygiene resources, leadership support and culture, use of improvement strategies, and intentions to make hand hygiene a priority for improvement. It can be used as a before and after assessment to examine the impact of this program. It can also be used to gather information to guide the work of the implementation team.

> **!** Behaviour change takes time. Implementation teams may want to consider other forms of feedback about the value of the hand hygiene improvement strategies for individuals and teams.

Measuring Hand Hygiene Compliance

Implementation teams may want to look at changes in hand hygiene compliance rates in areas that have implemented hand hygiene improvement strategies. It is important to consider that the team-based problem-solving strategy promotes the selection of one area of improvement. For example, teams may decide to improve hand hygiene practice before patient/resident/client contact. The implementation team should consider these areas of focus when looking at changes in hand hygiene compliance rates.

Health care settings are already measuring hand hygiene compliance often using direct observations. There are different methods available to measure hand hygiene compliance rates. When selecting an approach, implementation teams can consider purpose, goals and resources.

PIDAC's Best Practices for Hand Hygiene in All Health Care Settings, 4th edition, provides an overview of different methods including their advantages and limitations. They include:

- **Direct observation:** Trained auditors' record observations using paper and pencil or electronic device.[1] Observations may be conducted openly or discreetly however, for evaluating the impact of improvement efforts, observations should be conducted as discreetly as possible. When overt observations are used, hand hygiene compliance rates can be biased.
- For additional practice and information, refer to the Hand Hygiene Observational Tool and the Hand Hygiene Observation and Analysis.
- **Product consumption:** Tracking weight or volume of hand hygiene products used, or the amount of products purchased.[2] The feasibility of this will depend on your system for tracking product usage.
- **Electronic dispenser counters:** Electronic counting device is placed in dispensers to record each time ABHR or soap dispenser has been accessed.[1]
- **Door minder or activity monitoring:** Motion sensors above doors detect entry or exit of patient/resident/client rooms and dispenser sensors that record the use of ABHR or soap dispensers.[1,2,16]

- **Electronic badge systems:** Also uses motion sensors but includes other advanced technology. Healthcare workers wear individual electronic badges that can attribute the individual use of a hand hygiene products to a hand hygiene opportunity.[1,2,16]
- **Camera-based systems:** Trained on-site or off-site auditors review recorded footage of entry or exit of health care workers in a patient/resident/client room.[1-3]

Continuous Quality Improvement

Many health care settings have quality improvement processes that are used to identify successes and areas for improvement. Rapid improvement cycles might be used to assess how well things are going over shorter time periods based on process measures. It is important to find opportunities to debrief on how things are going and to share lessons learned before moving to other areas of the health care setting.

Consider these steps to guide the use of your evaluation data to identify improvements:

- Set objectives for each strategy, select indicators, and describe current performance and targets. This can be based on existing hand hygiene compliance data and/or baseline results from the Hand Hygiene Assessing Perceptions (Appendix C).
- Summarize results from process measures.
- Consider making a list of considerations for program improvements. These questions can help inform those changes:
    - Is there a need to adjust targets or desired outcomes?
    - Is there a need to modify hand hygiene improvement strategies?
    - Are there sufficient resources and capacity to deliver the program / specific strategies well?
    - How well did the implementation team plan? Are there suggestions for improvement?
    - How well was the program implemented?
    - How effectively did the program help us reach the desired outcomes?

Implementation Team Tasks

Decide who will carry out evaluation activities and how often and to whom the results will be reported.

Example

Outcome Results

The implementation team reviews results that show a 5% increase in hand hygiene compliance rates over a 12-month period and a 15% increase in scores on an implementation climate measure (staff's perception of whether hand hygiene is expected, supported and rewarded). The results are promising but progress missed the targets set by the implementation team.

Process Results

A review of some of the feedback from those delivering the team-based problem- solving strategy suggest that the unit managers selected to facilitate the sessions didn't feel they did the best job delivering the activities and facilitating the discussion. They would have wanted a bit more clarity and support. An issue with the selected evaluation measures was also identified. Staff decided to prioritize improvement on hand hygiene technique. However, the implementation team did not have a measure to assess improvements to technique.

Action

The implementation team decides to make some changes and implement this strategy again in nine months and to start with another care area. They decide to have an infection control professional on the implementation team attend all three sessions where possible and meet with the manager twice beforehand. Another goal is to improve communication on the importance of some of the resources available to support the delivery of this strategy. The team decides to focus on a different outcome measure: self-reported intention to improve one aspect of one's hand hygiene practice.

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Appendix A: Terms of Reference

This resource supplements the hand hygiene program's implementation guide. It can be used to organize and articulate a term of reference for your implementation team. The items for this template were adapted from The Active Implementation Hub.[17]

Mission

Use this section to describe an overall mission for the implementation team.

For example: Through collaboration, effective planning and ongoing monitoring, this team is committed to successfully implementing hand hygiene improvement strategies across the health care setting.

Goals and Objectives

Use this section to detail the functions of this team.

For example:

- To discuss readiness for implementation and identify priorities and goals.
- To plan for the launch of hand hygiene improvement strategies.
- To champion and demonstrate ongoing commitment to the implementation of this program.
- To distribute materials, draft communications and reach out to individuals who can help implement this program.
- To discuss challenges, gaps and concerns that are affecting implementation. To identify and action solutions.
- To collect information on how well each improvement strategy was implemented and measure outcomes.
- To assess factors that might affect sustainability and identify opportunities to plan for sustainability.

Scope and Boundaries

Use this section to list expectations of the team and if any boundaries exist related to roles or functions.

For example:

- Members of the implementation team need to review materials circulated in advance and keep updated on meetings they have missed.
- Members of the implementation team should review the program and available resources.
- The implementation team will be responsible for communicating priorities for any improvements to hand hygiene products and other supports; however, they will not be responsible for the implementation of these changes.

Roles and Responsibilities

Use this section to outline who participates and in what ways.

For example:

- The implementation lead will facilitate the meetings.
- Someone will be responsible for supporting coordination including scheduling meetings, planning the agenda, taking notes and holding the team accountable for action items.
- Members of the implementation team may be asked to create/modify materials or draft communications.
- Members of the implementation team will bring forward challenges, gaps and concerns that are affecting the implementation of the program.
- Someone will be responsible for selecting measures, coordinating the collection of data and summarizing that data for the implementation team.

Communication Protocols

Use this section to outline how the team will communicate with each other and others that are not on the implementation team.

For example:

- The implementation lead will meet with the Director of Infection Prevention and Control every month to provide a verbal update.
- The implementation team will prepare a communication every 6 months to share progress and success stories with all staff.

Consider: What meetings could be attended to provide updates to other departments that will be involved or impacted by this program?

Resources Available for the Project

Consider: What resources are available what resources are available to support the work. Consider the roles and time commitment needed to support the implementation team.

Authority

Use this section to outline what decisions or processes the team has authority over.

Consider: What are the limits of the team's authority?

Deliverables

Use this section to list expected deliverables of the team and members.

For example:

- Communication plan and communication materials
- Implementation plan

Appendix B: Considerations for Readiness and Sustainability

Members of the implementation team supporting the roll out of the hand hygiene program should consider the statements below at regular intervals during planning and implementation. These considerations can be used to discuss readiness and help think about sustainability. The team should record comments and actions as they consider the statements. These statements were adapted from the Long-Term Success Tool.[11]

Team

- The implementation team understands what this program is trying to achieve and believe this work will lead to improved processes and outcomes.
- Members of the team have the opportunity to provide input, and we feel a sense of ownership towards the work. We are able to express our ideas freely which are openly considered by the team.
- There is wide breadth of involvement across the organization from all involved who are regularly consulted on the improvement efforts.
- The implementation team has the necessary skills to deliver the program. Training and development opportunities are available.
- The implementation team is working well together. There are clear responsibilities for individuals, and the work is shared across the team and does not rely on particular individuals.
- There are clear channels of communication between all involved in this program.

The Program

- The implementation team has opportunities to make changes to the improvement strategies to reflect local needs, setting and emerging evidence. Changes are documented and the successes and failures of changes are discussed.
- There is a monitoring system in place that allows the team to collect, manage and regularly review data (e.g., participation rates, staff feedback, hand hygiene compliance rates). Feedback from the program is shared with the implementation team and others on a regular basis.
- There is indication of benefits emerging from the program and this evidence is regularly communicated and visible to staff and patients/residents/clients.

Organizational Support

- The organization has supportive and respected leaders and/or champions who advocate for the program, communicate the vision, and effectively manage the process.
- There is funding that will allow us to achieve long term success. We have the necessary staff, materials, and equipment. We are given sufficient time to dedicate to the program.
- The organization has values and beliefs that emphasize the need to improve. Health care workers (HCW) and management are supportive of initiatives and continuous improvement is a priority for the organization's HCWs and patients/residents/clients.
- Program outcomes are aligned with the strategic priorities of the organization. This work is supported by organizational policies and procedures.
- Other initiatives will not interfere with the implementation of hand hygiene improvement strategies and desired outcomes.

Appendix C: Assessing Hand Hygiene Perceptions

Implementations teams should seek to understand how health care workers perceive current hand hygiene practices, as it can help them assess knowledge, confidence and obstacles. This document is designed to guide implementation teams on how to develop a hand hygiene perceptions survey and assess the results. It includes sample questions the implementation team may choose to ask health care workers to inform future hand hygiene improvement efforts in their sector. Questions can be tailored to your setting and your goals. Results can be used to plan for implementation and describe specific goals or objectives, current performance and targets.

Developing Survey Questions

You may choose to include questions around site, date, unit, department, and position of person completing the survey.

Sample Questions

On a scale of 1 (strongly disagree) to 5 (strongly agree):

- I understand how to apply the four moments for hand hygiene in all situations.
- I am confident I could improve my hand hygiene practice with the right technique.
- Alcohol-based hand rub dispensers are never or rarely empty.
- There is alcohol-based hand rub available at point-of-care (i.e., where provider, patient and care is taking place).
- My organization has made it easy to access moisturizer that is compatible with approved ABHR.
- Hand hygiene sinks for healthcare workers always have liquid soap and paper towel readily available.
- Staff are expected to continuously find ways to improve their hand hygiene.
- Staff get support to make improvements to their hand hygiene practice.
- Staff receive recognition and appreciation when they make efforts to improve their hand hygiene practice.
- Supervisors help address obstacles to performing hand hygiene by openly and effectively addressing the problem(s).
- Finding ways to improve my hand hygiene practice is a high priority for me.
- I intend to improve my hand hygiene practice in the next month.

Yes or No:

- In the past three months, I have participated in a discussion about hand hygiene with my team.
- In the past three months, I have supported my colleagues improve their hand hygiene practice.
- In the past three months, I have tried something new to reach a personal goal to improve my hand hygiene practice.

Distributing the Survey

Distribute the survey to your staff at two time points. Once at “baseline” (before the program is implemented) and a follow-up time point (12–18 months, depending on the timing of program implementation). The first survey can be used to set priorities for where the improvement strategies are implemented. It can also be used to set targets for improvement. The second survey can be used to assess changes. Notify the staff the survey will take approximately 10 minutes to complete.

Collecting Results

For questions on a scale, calculate the proportion of staff that responded agree or strongly agree with each statement. For yes or no questions, calculate the proportion of staff who responded yes and who responded “No”. Set targets for each survey question. For example, you may want to see the proportion of staff who agree or strongly agree to a question increase from 50% to 75%.

Implementing the Program

Following the distribution of the final survey, review the data and identify where there are changes in the responses to each question, and if you have reached the desired outcome. You can check whether expectations for desired outcomes were exceeded, met or not met.

This can be a helpful exercise for the implementation team to do together. Decide what action items could be taken as next steps, and where there are successful outcomes to celebrate.

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