

Getting Reliable

Generating ideas for improvement

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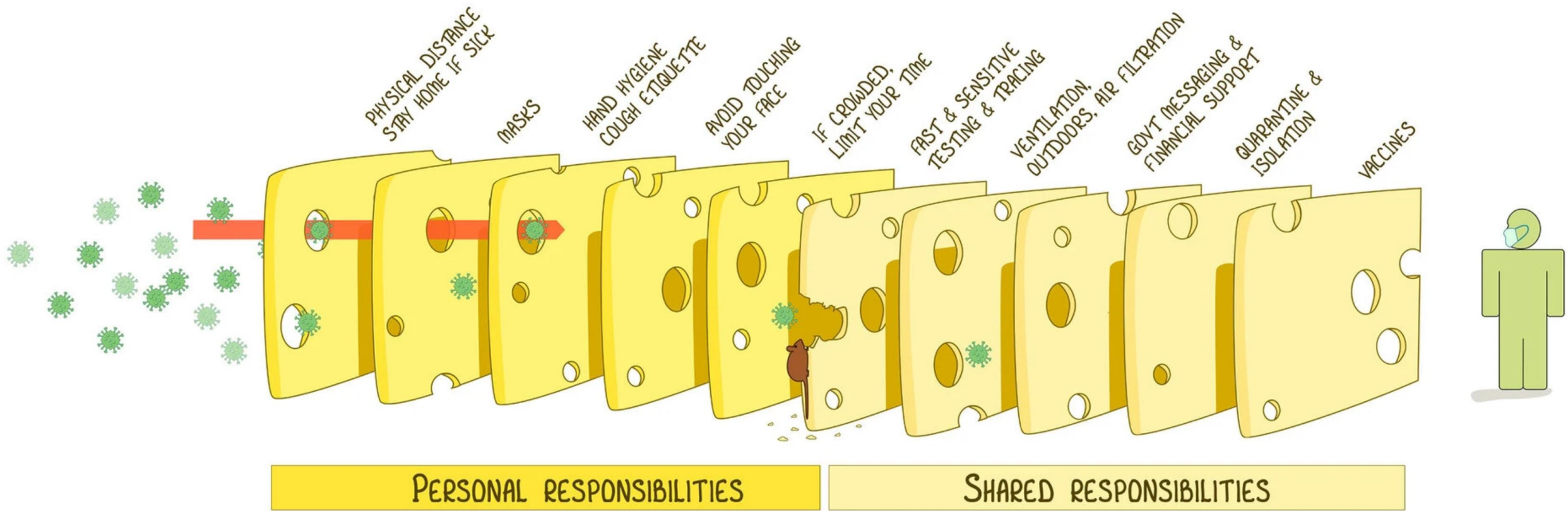
**AHRQ ECHO National Nursing
Home COVID-19 Action Network**



Training Hub Logo

THE SWISS CHEESE RESPIRATORY VIRUS PANDEMIC DEFENCE

RECOGNISING THAT NO SINGLE INTERVENTION IS PERFECT AT PREVENTING SPREAD



EACH INTERVENTION (LAYER) HAS IMPERFECTIONS (HOLES).
MULTIPLE LAYERS IMPROVE SUCCESS.

Adapted from James Reason by Ian Mackay.
New York Times Dec 5, 2020

IAN M MACKAY
VIROLOGYDOWNUNDER.COM
WITH THANKS TO JODY LANARD, KATHERINE ARDEN & THE UNI OF QLD
BASED ON THE SWISS CHEESE MODEL OF ACCIDENT CAUSATION, BY JAMES T REASON, 1990
VERSION 3.0
UPDATE: 24OCT2020

THE SWISS CHEESE RESPIRATORY VIRUS PANDEMIC DEFENCE

RECOGNISING THAT NO SINGLE INTERVENTION IS PERFECT AT PREVENTING SPREAD

Each preventive process improves chances of avoiding infection.

PERSONAL RESPONSIBILITIES

SHARED RESPONSIBILITIES

EACH INTERVENTION (LAYER) HAS IMPERFECTIONS (HOLES).

(MULTIPLE LAYERS IMPROVE SUCCESS.)

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How do we know if a process is reliable?

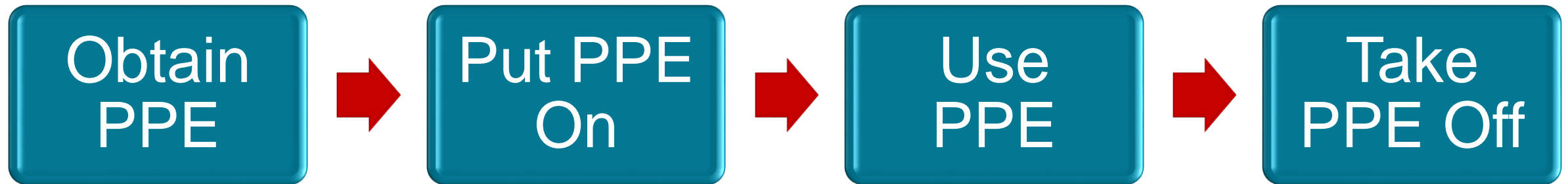
- Ask 5 staff
 - WHO does it
 - WHEN should it be done
 - WHERE is it done
 - HOW is it done
 - WHAT is needed to do it

- If all staff can provide consistent answers high likelihood it is reliable

Getting to Greater Reliability in Your Process

- What are the processes you need to improve?
- Clearly state in 2-5 words what you intend to design.
 - Proper PPE use
 - Prevent staff burnout
 - Manage staff quarantine
 - Proper resident Cohorting
 - Testing for COVID
 - Safe visitation process

Flow Diagram (for Proper PPE use)



Each box is a *process* with attributes:
Who, Where, When, How, & What is needed

Obtaining PPE: Each box is an attribute of a process.

Who is responsible for enough equipment.

Where is the equipment stored.

When is the equipment inventory done.

How is the equipment supply verified.

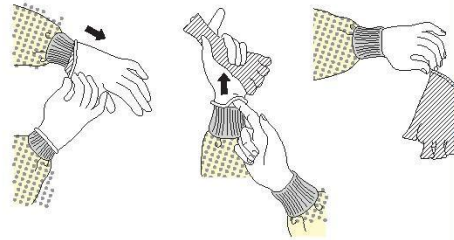
What is done when something is missing.

SEQUENCE FOR REMOVING PERSONAL PROTECTIVE EQUIPMENT (PPE)

Except for respirator, remove PPE at doorway or in anteroom. Remove respirator after leaving patient room and closing door.

1. GLOVES

- Outside of gloves is contaminated!
- Grasp outside of glove with opposite gloved hand; peel off
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist
- Peel glove off over first glovet
- Discard gloves in waste container



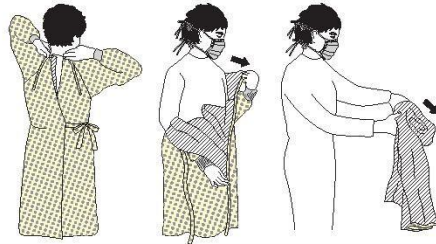
2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield is contaminated!
- To remove, handle by head band or ear pieces
- Place in designated receptacle for reprocessing or in waste container



3. GOWN

- Gown front and sleeves are contaminated!
- Unfasten ties
- Pull away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard



4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- Grasp bottom, then top ties or elastics and remove
- Discard in waste container



Process for removing PPE

Attributes:

1. Who removes PPE?
2. When is PPE removed?
3. Where is PPE removed?
4. How is PPE removed?
5. What is required to remove PPE?

PERFORM HAND HYGIENE BETWEEN STEPS
IF HANDS BECOME CONTAMINATED AND
IMMEDIATELY AFTER REMOVING ALL PPE



Reliability = Clear preventive processes performed correctly >95% of the time

Rounds and huddles with open communication identify unreliable process



WHY IN A COVID CRISIS ARE WE TALKING ABOUT RELIABLE DESIGN?

- We want GOOD OUTCOMES.
- We want standardized processes with a HIGH COMPLIANCE RATE throughout the nursing home for LONG TERM success.
- We want SIMPLE, DOABLE and MINIMAL RESOURCE approaches because we have limited time, energy and resources.
- We want to invest in approaches that can be applied to other situations for continuous quality improvement.
- Reliability occurs by DESIGN and not by accident.

WHAT IS RELIABLE DESIGN?

- To design a non-catastrophic process to 95% or better reliability with the understanding that at this level SUSTAINABILITY of the process is HIGHLY LIKELY.

HIGH LEVEL FLOW CHARTS FOR RELIABLE DESIGN

WANT TO GET GREATER RELIABILITY IN YOUR PROCESS?

- Think about different processes you want to improve.
- Select one process and clearly state the process using 2-5 words: (examples)
 - proper PPE use
 - preventing staff burnout
 - resident cohorting
 - COVID testing
 - visitation booths
- Keep it really simple by breaking the design into obvious steps. Limit it to only FOUR STEPS.
- Use a high level flow chart for reliable design.

HIGH LEVEL FLOW CHARTS



- Each box is a process with attributes.
- Determine which process (box) you are having the most problem with and why.
- That process then becomes a logical improvement focus.

HOW DO YOU DETERMINE WHICH STEP YOU ARE HAVING THE MOST PROBLEM WITH?

- Ask ANCHORING QUESTIONS.
 - "What is the most challenging part of obtaining your PPE?" or
 - "Tell me about the last time you had trouble accessing PPE."
- Ask 5 direct care staff if they can name the 5 attributes for a given process in question.

KEEP IN MIND



- If the flow diagram doesn't seem TOO SIMPLE, complexity has already crept into your design.
- Complexity is the enemy of reliable design because 5 direct care staff will be less likely to be able to articulate the 5 attributes.

Flow diagram helps clarify and communicate standard process

To spot problems, ask front-line staff: Who, Where, When, How, What's needed

Collect ideas to test

Getting Reliable

Some ideas for improvement

- Daily unit huddles to remind about processes, review issues & plan the shift
- Put process reminders in the workspace where the task is done: labels, checklists, photos, posters, slogans
- Inspection: Two people check key steps
- Maintain kits of materials to support common tasks
- Preventive processes are clear and understood by all staff
- Cross-training to cover staff absences

Leave In Action

- Identify a process in your facility where reliability is questionable (staff unsure about the 5 attributes: Who, Where, When, How, What is needed)
- Make a 4-step high level flow diagram to show the processes involved.
- For each process, consider the 5 attributes
- Talk to staff: Ask about reasons for process failure: which attribute(s) are involved?
- Gather ideas for change
- Try out an idea one time, with one staff member, discuss results
- Share on the next call!