



# Employee Hand Hygiene

What does handwashing have to do with behavior?



# Objectives

- Define Behavior and Reinforcement.
- Outline the relationships between Antecedents, Behaviors and Consequences (ABC).
- Illustrate how training, feedback, and reinforcement improve hand hygiene.
- Complete feedback activity

# Hand Hygiene

“Although individuals report knowledge of the importance of handwashing, they often fail to do so after restroom use (e.g., Johnson, Sholcosky, Gabello, Ragni, & Ogonosky, 2003). Thus, it is beneficial to identify effective behavioral interventions to promote handwashing in restrooms.” (Choi et al., 2018)

# Behavior

- Behavior – Is what we do.
- How we move. What we say. What we think. What we feel (Cooper et al., 2020, p. 26).
  - Pet your dog = Behavior
  - Hug your mom = Behavior
  - Remember your wedding day = Behavior
  - Bite pizza = Behavior
  - Bite staff = Behavior
  - Wash hands = Behavior
  - Wash hands incorrectly = Behavior
  - Wash hands correctly = Behavior

# ASR (Active Student Responding) 1

Which of the following are examples of behaviors?

- a) Washing hands
- b) Kicking a ball
- c) Television
- d) Bite a taco
- e) Bite a friend

# ASR 1

Which of the following are examples of behaviors?

- a) Washing hands
- b) Kicking a ball
- c) ~~Television~~
- d) Bite a taco
- e) Bite a friend

Anything a person can do is a behavior.

# Reinforcement

- Reinforcement
  - “When a type of behavior is followed by reinforcement there will be an increased future frequency of that type of behavior” (Michael, 2004, p.30).
- Translation of Reinforcement
  - “A behavior goes up in some way when you reinforce it.” (Me, 2024).

# ABC

Antecedent	Behavior	Consequence
What happens before a behavior.	The behavior. (Example, Washing Hands)	What happens after the behavior.

- This happens for every behavior we do, have done or will do.
- To change behavior, we can make changes to the antecedent or the consequence or both.
- If the consequence is reinforcement the behavior will go up or stay the same.
- If the consequence is not reinforcement the behavior will go down or stop.
- Data – if the behavior is going up, we have been successful at using reinforcement. If it goes down or stops, we... well... No one is perfect! Try again.

Cooper, J.O., Heron, T.E., & Heward, W.L. (2020). Applied behavior analysis: third edition. (p.4, pp.40-41, pp.55-58, pp. 641-643) Pearson Education, Inc.



## ASR 2

Which of the following terms means what happens before a behavior?

- a) Behavior
- b) Antecedent
- c) Consequence

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Which of the following terms means what happens before a behavior?

- a) ~~Behavior~~
- b) Antecedent
- c) ~~Consequence~~

Antecedents happen before a behavior. Antecedents may signal that reinforcement is going to happen after a behavior.

## ASR 3

Which of the following statements describes a consequence?

- a) Something that happens after a behavior that can reinforce or not reinforce the preceding behavior.
- b) Something that happens before a behavior.
- c) Something bad that happens.

## ASR 3

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- a) Something that happens after a behavior that can reinforce or not reinforce the preceding behavior.
- ~~b) Something that happens before a behavior.~~
- ~~c) Something bad that happens.~~

The word consequence may sound like a bad thing but in behavior science it is what follows a behavior. It depends on the situation, but consequences are not always bad, and they are not always good. When a consequence is reinforcing, we can expect an increase in behavior.

# Hand Hygiene

“Despite its importance, health care workers often fail to practice good hand hygiene practices and adherence to best practice guidelines remain poor (e.g., Universal Precautions [UP] from Occupational Safety and Health Administration [OSHA], 1999; Centers for Disease Control and Prevention, 2016; The Joint Commission [TJC], 2009). A review of 96 empirical articles found the median adherence rate of health care workers to be 40%, with lower adherence rates associated with high activity and those observations with which a physician was involved (Erasmus et al., 2010). Given the importance of good hand hygiene practices, and the consensus across studies that adherence is poor, it is not surprising that hand hygiene continues to be a focus of extensive research.” (Bowman et al., 2019)

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# Human Behavior

- “All organizational results are the product of human behavior” (Daniels & Bailey, 2014)
- Applied Behavior Analysis
  - “...focuses on solving problems of social importance using the principles and procedures of behavior analysis” (Fisher et al., 2014).
- Problem of social importance – UTI
- Solution – Hand Hygiene (among others)
- Principles/ Procedures – Improve hand hygiene by training, providing feedback and using reinforcement.
  - Training – how and when to wash hands.
  - Feedback – what has been trained is happening correctly
  - Reinforcement – what has been trained continues to happen correctly

# Employee Training

- Improve skills/ tasks by teaching/training (Austin, 2023)
  - Identify the skill/task
  - Can the employee do the task? Every time? As often as required?
- Help employees with job aids\*.
  - For example: “All Employees Must Wash Hands Before Returning to Work”
  - ABC – This is the A for Antecedent. (Daniels & Bailey, 2014)
- Does everyone in your organization know how to wash their hands? If No – Teach/Train
- Does everyone know when to wash their hands? If No – Teach/Train

\*HCBS and Human Rights must be followed.



# Hand Hygiene

Hospital-based studies have indicated that noncompliance with hand hygiene has resulted in health care-associated infections, the spread of multidrug-resistant organisms, and has significantly contributed to illness outbreaks (CDC,2013). In fact, these health care-associated infections affect nearly 1.7 million patients annually with one in17 of these patients dying from the infection (Haque, Sartelli, McKimm, & Abu Bakar, 2018). Despite these serious concerns, the CDC reports that health care providers clean their hands less than half of the times they should. (Hays & Romani, 2020)

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# Motivation

- Does everyone wash their hands correctly every time?
  - If no, then why not?
  - What are some of the reasons people do not wash their hands correctly?
- Does everyone wash their hands at the correct times? Every time?
  - If no, then why not?
  - What are some of the reasons people do not wash their hands at the right time?
- What can you do in your organization to address these reasons?
- When you are hungry you eat, when you are thirsty you drink. Why do we wash hands?


# Teaching Handwashing

- Steps – Break the behavior down into steps.
  - Individualize these steps based on the behavior and the person’s ability.
  - What may seem like one step for someone may need to be multiple steps for someone else.
  - Modify steps when necessary (assistive tech etc.)
- CDC Handwashing Steps
  1. **Wet** your hands with clean, running water (warm or cold), turn off the tap, and apply soap.
  2. **Lather** your hands by rubbing them together with the soap. Lather the backs of your hands, between your fingers, and under your nails.
  3. **Scrub** your hands **for at least 20 seconds**. Need a timer? Hum the “Happy Birthday” song from beginning to end twice.
  4. **Rinse** your hands well under clean, running water.
  5. **Dry** your hands using a clean towel or an air dryer.

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## ASR 4

What can you do if one of the handwashing steps is too difficult for a person?

- a) Get frustrated.
  - b) Assume the person is not able to wash their hands.
  - c) Individualize the step and/or break it down further.
  - d) Maintain the current expectation without individualization or modifications.
- 

## ASR 4

What can you do if one of the handwashing steps is too difficult for a person?

- ~~a) Get frustrated.~~
- ~~b) Assume the person is not able to wash their hands.~~
- c) Individualize the step and/or break it down further.
- ~~d) Maintain the current expectation without individualization or modifications.~~

Individualize... Individualize... Individualize!!!

More steps means more opportunity for reinforcement!

# Teaching Handwashing

- Which steps can the person do on their own and which need help?
- How can you help them?
  - Prompts
  - Physical assistance
  - Assistive technology
- Scenarios
  - #1: The person cannot or will not do any of the steps.
  - #2: The person can do all the steps, but some steps could be improved.
  - #3: The person can do some of the steps, but not consistently
  - #4: The person can do all the steps, but refuses.

# Scenario #1

Handwashing		
#1: The person cannot or will not do any of the steps.		
<b>Wet</b>	Cannot/ Will not/ Needs physical help	Give time to see if they will do on their own.  Is something wrong?  Medical? Dry hands, sensory?  Trauma?
<b>Lather</b>	Cannot/ Will not/ Needs physical help	
<b>Scrub</b>	Cannot/ Will not/ Needs physical help	
<b>Rinse</b>	Once hands are covered in soap they will rinse on their own.	Do they need a prompt?
<b>Dry</b>	They tend to like their hands dry, so they do this on their own.	Do they really? Try no prompt.  Reinforcement!

# Scenario #2

Handwashing		
#2: The person can do all the steps, but some steps could be improved.		
Wet	No Problem	Awesome! Reinforce (great job, pat on back, etc.)
Lather Scrub	Not as good as today's training	Identify the issue or barrier. Not lathering the whole area? <ul style="list-style-type: none"> <li>Colorful soap that shows coverage,                             <ul style="list-style-type: none"> <li>Soap that lathers easily,</li> </ul> </li> <li>Practice with glow lotion and UV light,</li> <li>Repeat step* when not completed correctly.</li> </ul>
Rinse	No Problem	Great no problem!
Dry	Must be told	Are you sure? What happens if you do not tell them?
<b>*Repeat Step – Be careful, this can be frustrating. Adjust expectations, it is better to help them improve a little each day than to make this a bad experience.</b>		

# Scenario #3

Handwashing		
#3: The person can do some of the steps, but not consistently		
A Antecedent	B Behavior	C Consequence
	Step they can do but do not do consistently	
Do they know when to do this?		Consequence = Good (Good)
What tells them they will get the C (consequence)?		Consequence = Bad (Bad)
Nothing		Consequence = None (Bad)
C is not something they like		Reinforcement based on the person's preferences.
C is good, but they do not understand.		Consistent reinforcement.





# Scenario #4

Handwashing #4: The person can do all the steps, but refuses.		
Wet	Can Do but Refuses	Reinforcement/ABC
Lather		
Scrub		
Rinse		
Dry		



# Feedback

- Feedback is the information we give a person after they complete a behavior (Cooper et al., p.257)
- Examples:
  - Come on Jim! You put the spoons where the forks go, and the forks are still in the dishwasher!
  - Kathy, you did amazing helping Jim calm down after he got upset by my feedback.
- What are some examples of feedback specific to your workplace?
  - Is all feedback aversive?
  - Do you give more great job feedback or more bad job feedback?

# Using Feedback

- Who will receive the feedback?
  - Employees and coworkers.
- Who should deliver the feedback?
- How often will you deliver updated feedback?
- How should you share the feedback?
- On what should you give feedback?
  - Handwashing performance and frequency
- What medium should you use?

(Austin, 2023)



# Practice/ Your Feedback Worksheet

- Hand Out (Austin, 2023)



## More Information

- Results: The Science-Based Approach to Better Productivity, Profitability, and Safety (John Austin) <https://reachingresults.com/>
- The Performance Diagnostic Checklist – Human Services (PDC-HS)
  - This is an assessment tool to identify the function of performance deficits within human services organizations (Hays & Romani, 2020).
- Behavior Skills Training
  - Teach/Train
  - Model
  - Practice
  - Feedback

# References

Bowman, B., Hardesty, S., Sigurdsson, S., McIvor, M., Orchowicz, P., Wagner, L., & Hagopian, L. (2019). Utilizing Group-Based Contingencies to Increase Hand Washing in a Large Human Service Setting. *Behavior Analysis in Practice*, 12, 600-611. <https://doi.org/10.1007/s40617-018-00328-z>

Cooper, J.O., Heron, T.E., & Heward, W.L. (2020). *Applied behavior analysis: third edition*. Pearson Education, Inc.

Centers for Disease Control and Prevention. (2022, November 15). When and how to wash your hands. Centers for Disease Control and Prevention. <https://www.cdc.gov/handwashing/when-how-handwashing.html>

Choi, B., Lee, K., Moon, K., & Oah, S. (2018). A comparison of prompts and feedback for promoting handwashing in university restrooms. *Journal of applied behavior analysis*, 51(3), 667–674. <https://doi.org/10.1002/jaba.467>

Daniels, A., & Bailey, J. (2014). *Performance Management: Changing Behavior that Drives Organizational Effectiveness*. Aubrey Daniels International, Inc.

Fisher, W. W. (2014). *Handbook of Applied Behavior Analysis*. Guilford Press.

Hays, T., & Romani, P. W. (2020). Use of the Performance Diagnostic Checklist-Human Services to Assess Hand Hygiene Compliance in a Hospital. *Behavior analysis in practice*, 14(1), 51–57. <https://doi.org/10.1007/s40617-020-00461-8>

Michael, J. (2004). *Concepts and principles of behavior analysis (rev. ed.)*. Kalamazoo, MI: Society for the Advancement of Behavior Analysis.