The Deep Dive Into Bathing

The materials and resources presented are intended to be an educational resource and presented for general information purposes only. They are not intended to constitute medical or business advice or in any way replace the independent medical judgment of a trained and licensed physician with respect to any patient needs or circumstances. The information presented or discussed may not be representative of all patient outcomes. Each person's situation is unique and risks, outcomes, experience, and results may vary. Refer to product labeling for complete instructions including product uses, ingredients, purpose, warnings, precautions and other information.

Dr. Deborah Ellis

PhD, MS, MPH, CIC, LTC-CIP, CPHQ

Dr. Deborah Ellis, PhD, is a healthcare executive with more than 30 years of clinical laboratory, infection prevention, employee health, and public health experience.

She currently works as System Director for Infection Control and Prevention at Alameda Health Systems, where she was awarded Healthcare Hero of the Year in 2020. A member of APIC since 1989, she has lectured on a wide range of infection prevention topics.

Dr. Ellis is a paid speaker for Coloplast

Objectives

01. Discuss the importance of acute care bathing

02. Review the function of the epidermis and influencing factors

03. Discuss the complexities of acute care bathing and review CHG use

04. Explore current acute care bathing options

05. Explore EasiCleanse® Bath as a standardized bathing experience

Nurses sometimes view bathing as a time-consuming and low priority task[1]

1. Powers, J., & Fortney, S. (2014). Bed baths: Much more than a basic nursing task. Wolters Kluwer Health, Inc., 44(10), 67-68. https://doi.org/10.1097/01.NURSE.0000453714.58446.98

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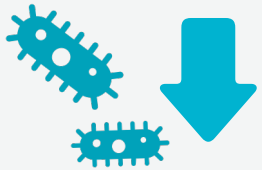
Bathing: Why it should be a **priority**

The clinical significance:



Reduce infection rates

Offloading and repositioning

Skin assessment

Increase comfort and satisfaction

1. Powers, J., & Fortney, S. (2014). Bed baths: Much more than a basic nursing task. Wolters Kluwer Health, Inc., 44(10), 67-68. https://doi.org/10.1097/01.NURSE.0000453714.58446.98

Proper bathing practices can reduce infection rates[1]

- Heavy skin bacterial colonization aids in the development of hospital acquired infections [2]
- Basic hygienic interventions such as bathing can help reduce the rate of infections and other complications[1]
- HAI's are a significant economic burden to health care systems, estimating up to ***$31,000 per each infection***[3]

Surgical Site Infection (SSI)

Catheter-Associated Urinary Tract Infection (CAUTI)

Central Line-Associated Bloodstream Infection (CLABSI)

Ventilator-Associated Pneumonia (VAP)

1. Powers, J., & Fortney, S. (2014). Bed baths: Much more than a basic nursing task. Wolters Kluwer Health, Inc., 44(10), 67-68. https://doi.org/10.1097/01.NURSE.0000453714.58446.98
2. Monegro AF, Muppidi V, Regunath H. Hospital Acquired Infections. [Updated 2022 Aug 22]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK441857
3. (2017, November 1). Estimating the Additional Hospital Inpatient Cost and Mortality Associated With Selected Hospital-Acquired Conditions. Agency for Healthcare Research and Quality. Retrieved February 17, 2023, from https://www.ahrq.gov/hai/pfp/haccost2017-results.htm

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The patient perspective on bathing matters

- Patient complaints on post discharge surveys could negatively impact reimbursement and hospital payment[1]

> *Many patients report **not receiving a bath** during their hospital stay*

- Bathing strategies need to be supported by staff and accepted by patients

1. Rodriquez, P., RN (2018). Reducing Infections and Increasing Patient Satisfaction: One Hospital's Journey. Infection Control Today, 42. http://sdapic.org/wp-content/uploads/2021/02/reducinginfectionsandincreasingpatientsatisfactiononehospitalsjourney1604428689049.pdf

Skin:
The moisture barrier function and influencing factors

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Stratum corneum:
Protection against pathogens

Microbiome: Skin flora

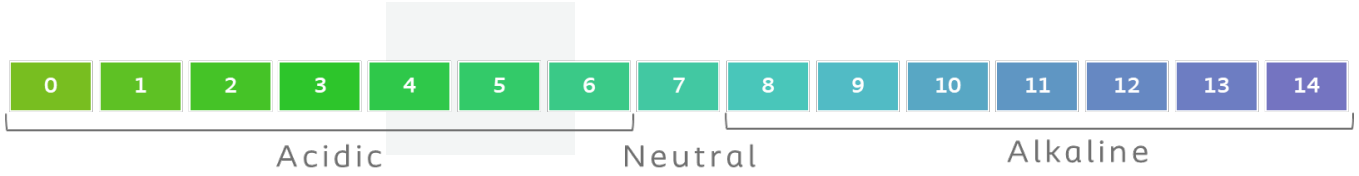
Resident vs. Transient bacteria

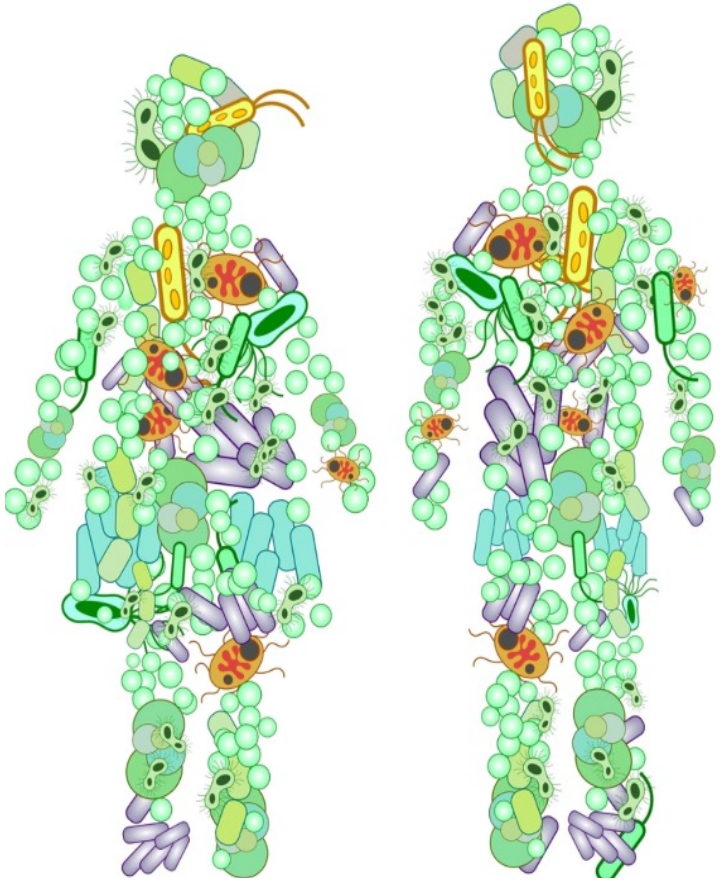
- ***Resident:*** Impedes colonization
- ***Transient:*** shed by bathing, handwashing

Acid mantle

Combination of sebum and sweat create an acidic skin surface

- pH of 4.5 to 6.22[1]





1. Bryant, R. A., & Nix, D. P. (2016). Acute and Chronic Wounds Current Management Concepts (5th ed., pp. 40-51). Elsevier.

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Factors that ***influence the moisture barrier***

Prematurity

Advanced age

Obesity

Humidity

Moisture

Microbiome

Challenges to skin integrity:
Moisture - caustic and non-caustic

Skin can be exposed to a variety of different sources.

- Urine
- Stool
- Sweat
- Saliva
- Gastric contents
- Wound exudate
- Effluent

*Moisture associated skin damage (MASD) is defined as **inflammation** and **erosion of the skin** caused by **prolonged exposure to various sources of moisture***

Gray, Mikel; Bliss, Donna Z.; McNichol, Laurie. Moisture-Associated Skin Damage: Expanding and Updating Practice Based on the Newest ICD-10-CM Codes. Journal of Wound, Ostomy and Continence Nursing 49(2):p 143-151, March/April 2022. | DOI: 10.1097/WON.0000000000000865

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How to ***support and maintain*** skin health?

A structured skin care regimen:

Cleanse

Moisturize

Protect

Skin cleansing

Removal of unwanted substances such as sweat, desquamating corneocytes, organic material, and remnants of products[1]

Kottner J, Surber C. Skin care in nursing: A critical discussion of nursing practice and research. Int J Nurs Stud. 2016 Sep;61:20-8. doi: 10.1016/j.ijnurstu.2016.05.002. Epub 2016 May 10. PMID: 27267180

The goals of acute care bathing:

- Improve & maintain skin hygiene
- Reduce body odor
- Removal of microbes
- Stimulate circulation
- Skin integrity assessment
- Promote relaxation and comfort

The challenges with acute care bathing:
It's a complex process

- Age considerations
- Patient status
- Time/frequency
- Goals of cleansing
- Product variability
- Cleansing vs. decontamination

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Time and frequency

- Number of patients to bathe
- Inefficiencies due to time or staffing constraints
- Extra staff assistance
- Scheduled vs. unscheduled bathing
  - *Daily full body bath*
  - *Catheter care*
  - *Incontinence care*

Patient status

- Ambulatory vs. non-ambulatory
- Medical equipment in use
  (*Lines, drains, monitors, etc.)*
- Medications
  (*Narcotics, vasopressors, etc.)*
- Available turning surface
- Level of consciousness

Product variability

Specific products for specific cleansing needs

- Product knowledge for multiple products (*When, where and how to use the product)*
- Extra supplies creates confusion
- Cost, storage, and inventory
- Waste

Antimicrobial bathing

- Decolonization with CHG
- Full body decontamination vs. targeted cleansing on/near medical devices
- CHG formulations
  - *Premoistened CHG cloths*
  - *Rinse off solutions*

CHG used in acute care to prevent HAIs[1]

Many hospitals have adopted daily

CHG bathing for all inpatients including non-ICU individuals

with central lines and other indwelling devices[2]

1. Powers, J., & Fortney, S. (2014). Bed baths: Much more than a basic nursing task. Wolters Kluwer Health, Inc., 44(10), 67-68. https://doi.org/10.1097/01.NURSE.0000453714.58446.98
2. Huang, S. S., Septimus, E., Kleinman, K., Moody, J., Hickok, J., Heim, L., Gombosev, A., Avery, T. R., Haffenreffer, K., Shimelman, L., Hayden, M. K., Weinstein, R. A., Spencer-Smith, C., Kaganov, R. E., Murphy, M. V., Forehand, T., Lankiewicz, J., Coady, M. H., Portillo, L., Sarup-Patel, J., ... ABATE Infection trial team (2019). Chlorhexidine versus routine bathing to prevent multidrug-resistant organisms and all-cause bloodstream infections in general medical and surgical units (ABATE Infection trial): a cluster-randomised trial. Lancet (London, England), 393(10177), 1205–1215. https://doi.org/10.1016/S0140-6736(18)32593-5

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CHG formulations

Wipes vs. liquids

- Liquid solutions offer advantage of a soap and water experience
- Cloths can be an easy, quick application
  - *Could result in skin feeling sticky and uncomfortable*[1]
  - *Warmed CHG cloths become inactive after a certain time frame*[2]

2% vs. 4% concentrations

- 2% and 4% produce a clinically effective reduction in microbial contamination *(3-log reduction)*[3]

1. Rodriquez, P., RN (2018). Reducing Infections and Increasing Patient Satisfaction: One Hospital's Journey. Infection Control Today, 42. http://sdapic.org/wp-content/uploads/2021/02/reducinginfectionsandincreasingpatientsatisfactiononehospitalsjourney1604428689049.pdf
2. AHRQ (2022, March 1). Bed Bathing with 2% No-Rinse Chlorhexidine Cloths and Showering with 4% Rinse-Off CHG Liquid Soap. Agency for Healthcare REsearch and Quality. Retrieved February 17, 2023, from https://www.ahrq.gov/sites/default/files/wysiwyg/hai/abate/training/cbt-bed-bathing.pd
3. Log Reduction Fact Sheet. (n.d.), from http://www.healthyfacilitiesinstitute.com/documents/hfi-log-reduction-chart.pdf. Las viewed 1/14/2022

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Traditional acute care bedside bathing options:

Pre-moistened wipes

Basin bathing

An end to the basins...
A known contamination risk

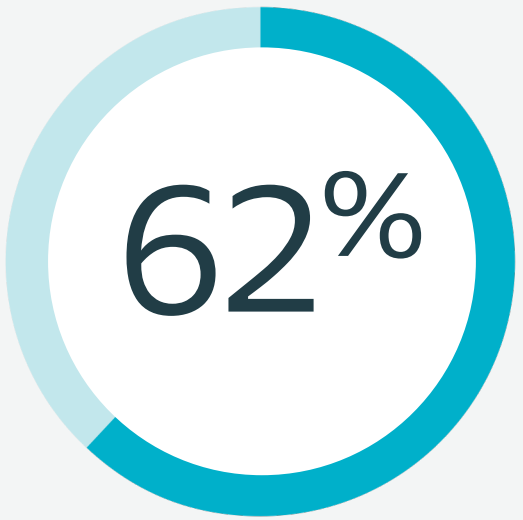
Patients' Bath Basins as Potential Sources of Infection: A Multicenter Sampling Study[1]
Sample: 92 bath basins swabbed, including basins from 3 ICU's were evaluated

Results:

of the samples grew ***some form of bacteria***

Hospital Bath Basins are Frequently Contaminated with Multidrug-Resistant Human Pathogens[2]
Sample: 1,103 basins from 88 different hospitals sampled

Results:



of the basins were contaminated with commonly encountered ***hospital-acquired pathogens***

1. Johnson D, Lineweaver L, Maze LM. Patients' bath basins as potential sources of infection: a multicenter sampling study. Am J Crit Care. 2009 Jan;18(1):31-8, 41; discussion 39-40. doi: 10.4037/ajcc2009968. PMID: 19116402.
2. Marchaim D, Taylor AR, Hayakawa K, Bheemreddy S, Sunkara B, Moshos J, Chopra T, Abreu-Lanfranco O, Martin ET, Pogue JM, Lephart PR, Panda S, Dhar S, Kaye KS. Hospital bath basins are frequently contaminated with multidrug-resistant human pathogens. Am J Infect Control. 2012 Aug;40(6):562-4. doi: 10.1016/j.ajic.2011.07.014. Epub 2011 Dec 16. PMID: 22177667.

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Pe-moistened wipes/cloths
A basin-less bathing option

Pros

- Basin-less bathing option
- Easy to use *(grab and go)*
- Able to be warmed

Cons

- Extra supplies
- Patient experience: wipe down may leave sticky residue on the skin
- Management of supplies and space required for warmers
- It's a wipe: No Wipe Facilities exist due to "wipes in the pipes"

EasiCleanse®Bath

All-in-one, no-rinse, self-sudsing disposable washcloth offering a real bathing experience that is

truly standardized.

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***EasiCleanse®** Bath*
is truly standardized

- Full body bathing
- Neonate to geriatric bathing
- CHG compatible
- Shampooing
- Perineal and incontinence clean up
- Indwelling catheter* and meatal cleansing

*Ensure all internal protocols are followed

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Benefits of a soft, self-sudsing bathing cloth

A study of **36 patients and 25 caregivers**, comparing EasiCleanse® Bath with basin bathing, showed the following:

agreed that suds help facilitate a ***comfortable bathing experience***

agreed they had a ***satisfactory bathing experience*** with EasiCleanse Bath

agreed that they ***preferred EasiCleanse® Bath*** over basin bathing with soap and water

Raizman, R. et al, Bath in the bag: Perspective of patients and caregivers versus financial implications, CAWC 2015, Toronto.

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Versatile

One product that meets many cleansing needs may lead to:

- Consistency in care
- Reduced inventory/SKUs
- Simplified training
- Potential cost savings

Infection control

Designed to reduce the risk of microbial contamination:

- Packaged dry reducing the risk of microbial contamination and proliferation
- Single-use and disposable reducing the risk of cross contamination

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EasiCleanse® *Bath* has a water activity of .151, which ***does not*** support the growth of any microorganisms during the product's shelf life

No preservatives are possible due to the low water activity of the product

Technical Bulletin

Water Activity of EasiCleanse® Bath

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The purpose of this technical bulletin is to provide information on the low level of water activity in EasiCleanse® Bath and its ability to prevent microbial growth in the product.

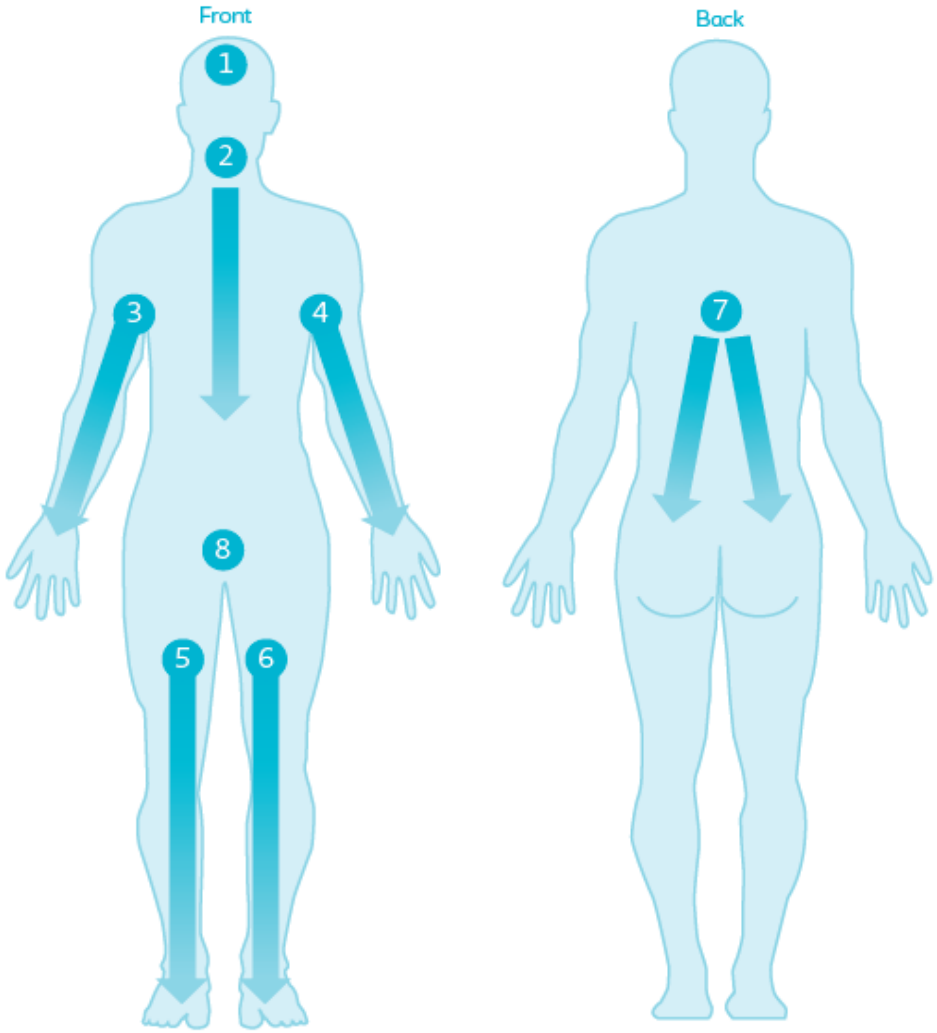
There are many factors that can lead to contamination of products which may result in microbial growth that can be harmful to the user of the product. Reduced water activity (aw) can greatly assist in the prevention of microbial growth in a product. Water activity is a measurement of the amount of "available" water versus "bound" water in a product. If there is little available water (low water activity) then microorganisms cannot proliferate. The following table shows the water activity required to support the growth of representative microorganisms.

EasiCleanse Bath is a dry foam product that does not contain any preservatives due to the low water activity of the product. The water activity of EasiCleanse Bath is on average 0.151, which does not support the growth of any microorganisms during the product's shelf life.

Table 1.
Water Activities (aw) Required to Support the Growth of Representative Microorganisms

Bacteria	Water Actrivity (aw)	Molds and yeast	Water Activity (aw)
Pseudomonas aeruginosa	0.97	Rhyzopus nigricans	0.93
Bacillus cereus	0.95	Mucor plumbeus	0.92
Clostridium botulinum, Type A	0.95	Rhodotorula mucilaginosa	0.92
Escherichia coli	0.95	Saccharomyces cerevisiae	0.9
Colstridium perfringens	0.95	Paecilomyces variotti	0.84
Lactobacillus viridescens	0.95	Pennicillium chrysogenum	0.83
Salmonella spp.	0.95	Aspergillus fumigatus	0.82
Enterobacter aerogenes	0.94	Penicillium glabrum	0.81
Bacillus subtilis	0.9	Aspergillus flavus	0.78
Micrococcus lysodekticus	0.93	Aspergillus niger	0.77
Staphylococcus aureus	0.86	Zygosaccharomyces rouxii (osmophilic yeast)	0.62
Halabacterium halobium (halophilic bacterium)	0.75	Xeromyces bisporus (xerophilic fungi)	0.61

USP40; General Information/ <1112> Application of Water Activity Determination to Nonsterile Pharmaceutical Products, p. 1417



Where to use *EasiCleanse®* Bath:

1. Hair
2. Face, neck, chest, abdomen
3. Arm and underarm
4. Arm and underarm
5. Leg and foot
6. Leg and foot
7. Back and buttocks
8. Perineum

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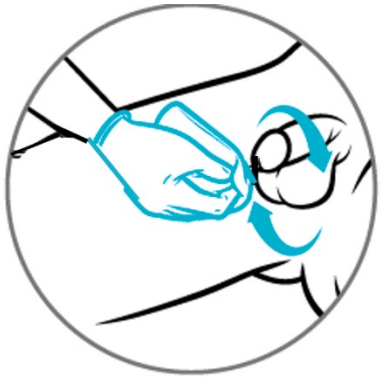
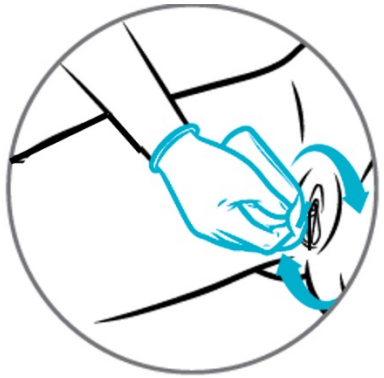


Cleansing the meatal area for males



Cleansing the meatal area for females

EasiCleanse® Bath

Meatal and indwelling catheter* cleansing *(2-4 washcloths)*

1. Perform hand hygiene and put on gloves
2. Open package and add water up to the fill line
3. Use cloths to clean and remove debris from meatal area of catheterized patient per hospital protocol
4. Cleanse indwelling catheter per your facility's protocol.

* Ensure all internal protocols are followed

Place EasiCleanse bag under running water

Use cloth to cleanse perineal area

EasiCleanse® Bath

Perineal and incontinence care *(2-4 washcloths)*

1. Remove stool using underpad and/or dry *EasiCleanse® Bath* cloth
2. Once the bulk is removed add water to the bag and squeeze or roll bag to distribute water in washcloths and cleanse the skin

Squeeze suds off washcloth onto head

Massage suds into hair

EasiCleanse® Bath

Shampooing *(1-2 washcloths*)*

1. Squeeze the suds out of the cloth and work through hair
2. Comb hair and remove tangles
3. For longer hair, start sudsy cloth at base of hair close to scalp and pull to the end of hair, run comb through and let dry

**For thicker or coarser hair, additional washcloths may be needed*

EasiCleanse® *Bath* is offered in a variety of package sizes

Size	Units	Product
5 washcloths per pack	100 packs/case	7056
8 washcloths per pack	80 packs/case	7058
30 washcloths per pack	30 packs/case	7055

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Case Studies

Case Study #1:

Bathing in a Lage Non-pofit

Here's how Coloplast helped one health system to:

Streamline bathing protocols

Reduce product SKUs by 20

Large Non-profit

5,000+ bed IDN

19 hospitals in 4 states

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Situation

- Infection Prevention and Nursing leadership at one hospital wanted to improve Foley care protocol.
- The hospital primarily used soap and water from a basin, but also discovered some units using wipes.

Actions

- EasiCleanse® Bath was trialed and implemented in the ICUs of the Children's Hospital.
- Infection Prevention gained support from leadership to complete a financial assessment.
- Based on trial results, Infection Prevention collaborated with IDN leadership to adopt EasiCleanse Bath across the entire system for:
  - General bathing
  - Catheter care
  - CHG delivery
  - Incontinence cleanup

Results

Coloplast has continued in-servicing ***to ensure adherence to protocols***

Supply Chain leadership estimates that replacing 20+ product SKUs ***reduced spend by approximately 25%***

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Case Study #2:

Bathing in Mid-Atlantic Region

Here's how Coloplast helped one health system to:

Reduce product SKUs from 12 down to 1

Increase adherence to protocols and patient satisfaction

First-year ***spend reduction*** estimated at $1 million

Mid-Atlantic Region:

2,700+ bed self-distributed integrated delivery network (IDN)

15 hospitals across 2 states in the Mid-Atlantic region

Including a **900-bed flagship hospital**

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Situation

- The system had received a Joint Commission citation for expired pre-packaged bathing wipes in warmers
- IDN leadership decided to assess EasiCleanse® Bath as a replacement to current products and protocols

Summary

- After a thorough assessment of EasiCleanse Bath and other competitive products, IDN leadership selected EasiCleanse Bath and designed a protocol and implemented throughout the entire system
- The IDN converted to EasiCleanse Bath 5-pack for general bathing, catheter care and CHG delivery

Results

First-year spend was ***reduced by an estimated $1 million***

12 bathing SKUs
were eliminated

Patient satisfaction increased;
they like the feel of the bath and appreciate that it is not sticky or tacky

Clinical leadership saw ***increased adherence to protocols***

Supply chain ***footprint was reduced***

Ease of storage
was improved

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Case Study #3:

Bathing in South Central

Here's how Coloplast helped one health system to:

Reduce product SKUs from 11 down to 1

Develop a new bathing algorithm to improve efficiency

Realize cost savings through bulk pricing

South Central Health System:

3,200+ bed Integrated Delivery Network (IDN)

22 hospitals in the South Central region

Non-profit academic health system

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Situation

- IDN was using multiple bathing products from multiple suppliers
- Leadership was concerned about lack of standardization
- With high spend for this category, IDN was looking for options to:
  - Save money
  - Improve efficiency
  - Eliminate basin bathing
  - Reduce SKUs and waste
  - Standardize to a single supplier

Summary

Based on product redundancy, Coloplast proposed a SKU reduction using EasiCleanse® Bath across the system for:

- Acute Care
- Rehab
- Wound Care Clinics

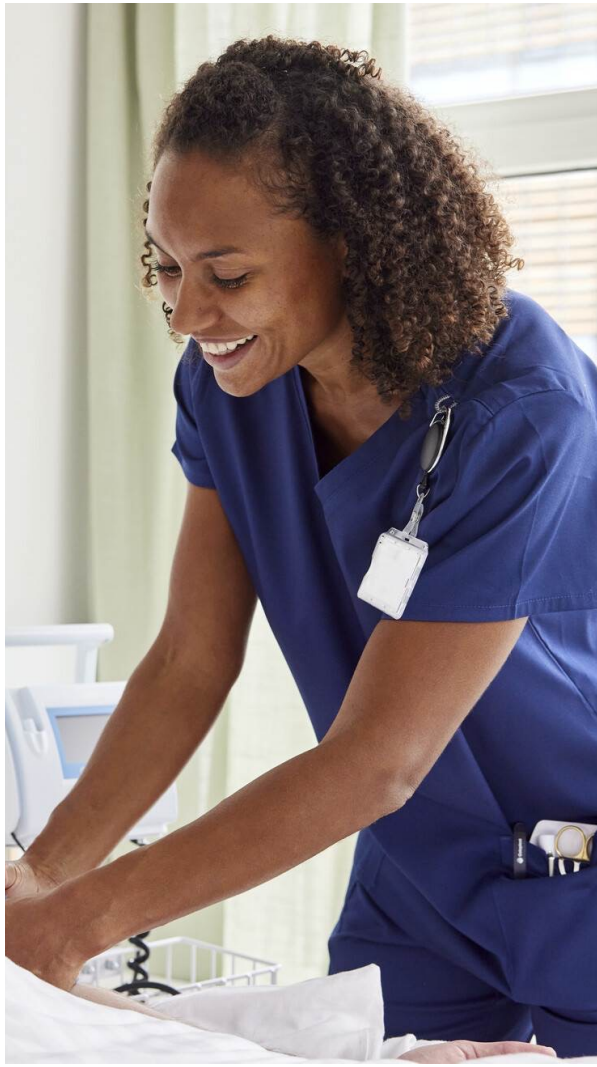
Results

Bathing product SKUs were ***reduced from 11 to 1***

Waste was ***reduced*** and various liquid cleansers ***eliminated.*** Basin bathing was ***eliminated***

By moving to a single supplier, the health system was able to ***realize cost savings through bulk pricing***

Development of new bathing algorithm ***improved efficiency and reduced unneeded variation***



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EasiCleanse® Bath

Standardized. Simplified. Bathing.

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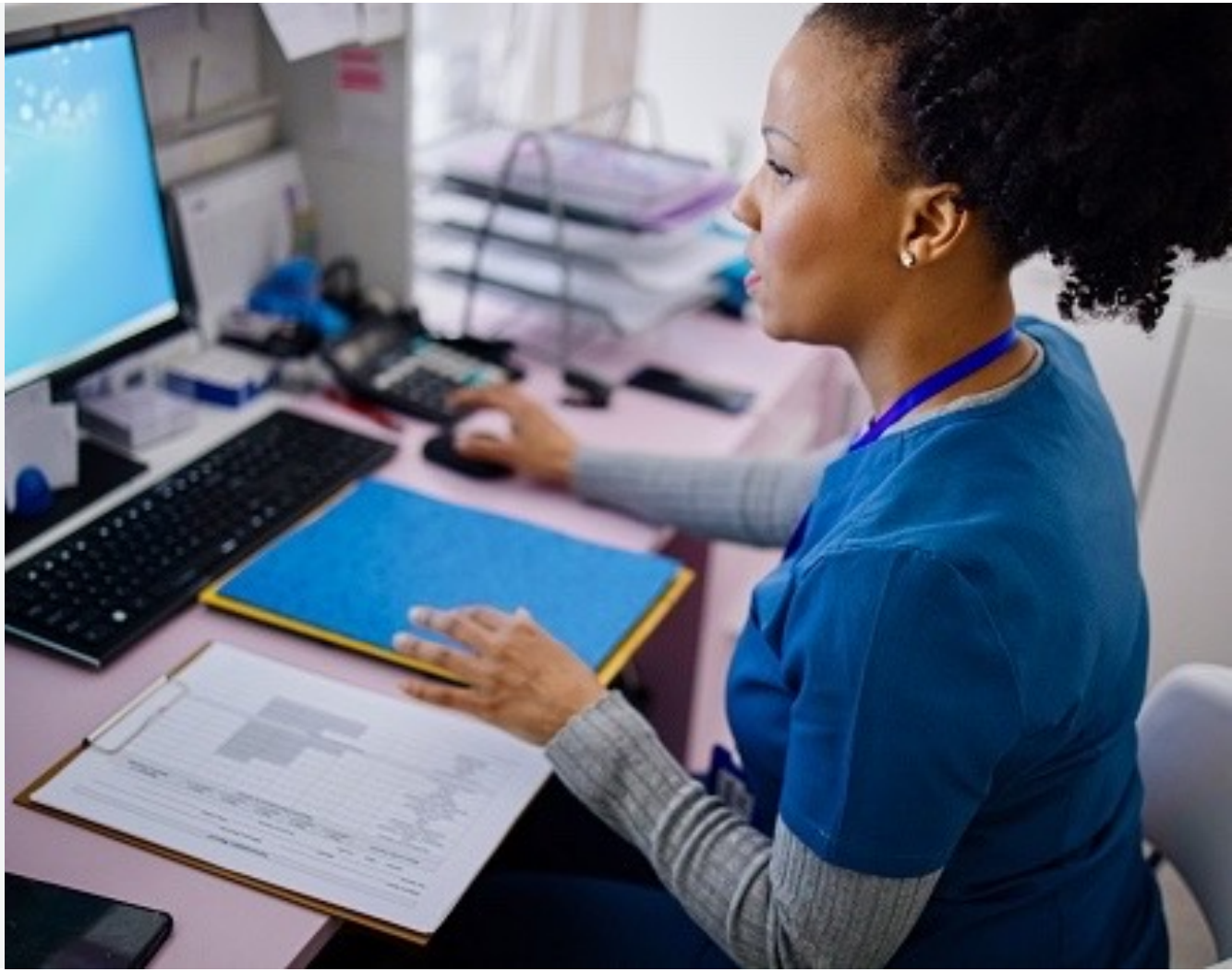
Reducing Variation and Optimizing Utilization

The next frontier for creating value in the hospital supply chain.

Coloplast is committed ***to making life easier through strategic collaboration***



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