

Resources

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<http://infectioncontrol.grampianshealth.org.au>

Cartoons in this booklet by

<http://www.davegibb.com.au/index.htm>



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A LITTLE YELLOW INFECTION CONTROL BOOK

THE BLUE WASHING BOOK

**LAUNDERING RESIDENTS CLOTHING
USING WASHING POWDER WITH
BUILT-IN SANITISER**



**Grampians Region Infection Control Group
2018**

LAUNDRY COMPETENCIES

COMPONENT	EDUCATION DATE	COMPETENCY CHECK DATE
Clean/soiled linen separation		
Laundry cleaning procedures		
Protective handling of soiled linen		
Hand washing		
Use of PPE		
Pre-washing treatment of foul linen		
Physical processes in washing		
Washer settings to be used		
Chemical processes in washing		
Product volumes to be used		
Care of linen in washer/dryer transit		
Situations requiring commercial laundering		

Definitions

Disinfection/ Sanitization	The process of destruction of microbes (but will not kill all types or concentrations)
Thermal Disinfection	Microbial destruction by heat
Chemical Disinfection	Microbial destruction by chemicals (usually chlorine or oxygen bleaches)
Sterile	Completely free from all microbes
Vegetative Microbes	Actively growing microbes (susceptible to heat/chemicals)
Spores	Microbes surrounded by outer "shell", and resistant to all laundry temperatures/chemicals
Washing Detergent	A laundry powder/liquid designed to remove soil by suspending it in water
Cold Water Detergent	Detergent formulated to be active in cold water
Hot Water Detergent	Detergent requiring heat for optimum activity
Bleach	A chlorine or oxygen compound used as a laundry component which is capable of killing a range of microbes. They act as chemical disinfectants / sanitisers

Washing at Home

We are all used to throwing our home washing into our family washing machine on COLD wash, with a bit of the cheapest laundry powder/liquid, and away it goes!

This usually works OK for home!



Laundry in Residential Care Must Meet a Standard

Laundering of residents clothes is **entirely different** — it must meet the Australian Laundry Standard

WHY?

Every ones clothing acquires microbes from the wearer throughout the day, even though it is not visibly soiled.

- Residents clothing may contain higher numbers of microbes due to degrees of incontinence or skin

OCCUPATIONAL HEALTH AND SAFETY

- Wear **disposable gloves** when handling soiled linen, **and a plastic apron if contamination of your clothing is likely**
- Good hand washing practices
- Laundry chemicals are eye irritants—wear goggles when handling chemicals
- Eye flush supplies must be available for first-aid use in the laundry
- Do not mix dry chemicals
- Material Safety Data Sheets (MSDS) must be available in the laundry
- Laundry cleaning keeps the level of microbes down
- Ensure fluff filters on dryers are cleaned on a regular basis to avoid dryer-fire-risks.

PREVENTING RECONTAMINATION OF PROCESSED CLOTHING

- Clean or processed clothing/linen must not come in contact with soiled linen, or uncleaned surfaces on which soiled linen has been in contact.
- **Use disposable gloves and plastic apron when handling moist soiled linen. Wash hands following glove removal.**
- Soiled and clean areas of the laundry should be clearly designated (ideally with a 2 metre separation between them)
- Soiled linen must come to the laundry in a linen bag, and be stored in a soiled linen area, or placed directly into a washer
- Bench surfaces, and tops of machine surfaces must be cleaned regularly throughout the day with detergent/hot water, and dried. Wipe machine out at end of day with a diluted chlorine solution
- Daily cleaning of the laundry including floor area
- Dust build-up behind machines can be sucked into dryers during dryer operation—hence cleaning behind machines is important
- Clean linen can be re-contaminated by staff hands—hand wash prior to handling clean linen
- Transfer of wet linen from washer to dryer is a prime time for recontamination
- Removal of incompletely dry linen from dryer is another prime time for recontamination
- Dryers must not vent humid air into the laundry, but must exhaust to the outside.

Doesn't COLD Wash Eliminate Microbes?

Only a very hot, long wash destroys the majority of microbes.

In domestic washing machines even the hottest cycle available only **reduces** the number of microbes left on clothing.

The principle is:

The hotter the wash/the longer the wash, the greater the reduction of microbes.

Cold Water Wash

Removes a good percentage of the microbes, due to the washing actions:

- Dilution in large volumes of water
- Exposure of soil to detergent during agitation and soaking
- Draining out suspended soil and microbes.

Heat and/or **Chemicals** are required to further reduce microbial loads in clothing during the washing process.



Everyones microbes are shared
around during washing
if heat or chemical disinfection is not provided

“The objective of laundering processes is to provide a laundered product which is hygienically clean, free from infection-causing microbes in numbers sufficient to cause human illness”

This objective is achieved by:

- Removal of blood and other soils from the linen by the laundry process
- Adequate disinfection of linen by heat and chemicals
- Keeping processed linen from becoming re-contaminated during handling and storage.



Inadequate laundering is like wearing someone elses used jocks

This combined thermal / chemical technique is NOT suitable for use at all times.

During the following situations affected linen must be laundered in a laundry which can achieve 71°C held for 5 minutes OR 65° C held for 12 minutes (with or without chemical safeguards), and 170° C drying:

- In any outbreak situation
- Resident with persistent skin rashes
- Severely immuno-compromised resident
- Only residents personal clothing can be laundered using this process. Face washers/ towels/ sheets **MUST** be laundered in a commercial laundry

Because of the limitations of medium-temperature washing / chemicals described in this washing system every residential care agency should have at least one front-loading, programmable washer capable of maintaining 71°C for 5 minutes , which relies **only** on heat for disinfection.

FOUL LINEN

Foul linen is clothing substantially soiled by faeces or urine -

- Always use appropriate PPE when handling soiled/foul linen
- Scrape clothing free of bulk faeces into a toilet at the point of removal from resident
- Transport to laundry in an impervious (leak-proof) plastic bag
- Again using appropriate PPE (including eye wear) gently rinse most visible contamination off under cold running water
- Fill the soak-bucket with detergent and water, and agitate clothing for a few minutes with gloved hand
- Empty bucket water, and refill with soak mixture
- Leave to soak for 1-2 hours, if possible
- Machine launder as a separate load when soak completed.

Laundry Processes Work by:

Removal of Soil/Microbes

Physical Processes:

- Dilution in large volumes of water
- Suspension in wash water by detergent—drained out in water
- Agitation action mixes detergent/water with clothing and shakes microbes free
- Dilution in large volumes of water during wash and rinse cycles.

Chemical Processes:

- Alkalinity of detergent

All the above actions are inadequate to DISINFECT clothing

Disinfection is achieved by:

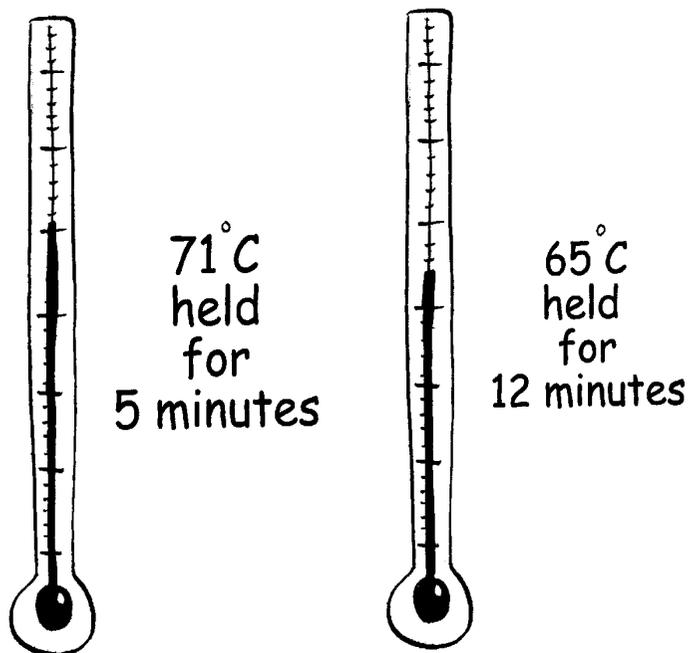
1. The HEAT in hot water
 2. BLEACH - chlorine or oxygen bleach
- OR
3. A combination of both heat and bleach

Both HEAT and BLEACH require **TIME IN CONTACT** with clothing to be effective.

Thermal Disinfection

The ideal agent for disinfection of residents clothing is HEAT.

Acceptable disinfection can be achieved by heat alone.



At these temperatures some chemical **MAY** still be added as an ADDITIONAL safeguard.

LOCAL PRACTICE:

DETAILS OF COMBINED THERMAL AND CHEMICAL DISINFECTION USING WARM WATER

Settings to be used

1. **WARM WASH**
2. **LONG WASH**
3. **MEDIUM WATER LEVEL**
4. **EXTRA RINSES, IF AVAILABLE**
5. **FILL MACHINE WITH WATER—THEN ADD WASHING POWDER WHICH CONTAINS OXYGEN BLEACH PRIOR TO ADDING CLOTHES**

(Staff to write your agency brand of powder and dose per 10 Kg load below)

Our washing powder is:-

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(suitable for both cold wash and warm wash).

AMOUNT PER LOAD OF 10KG OF SOILED LINEN
=SCOOPS

PROGRAM FOR USING WARM WATER AND A CHEMICAL DISINFECTANT IN THE WASHING POWDER WHEN 65°C WATER NOT AVAILABLE



Not good practise!

Settings	Reasons
Warm wash is better than cold wash	Any level of heat to provide some thermal disinfection is better than none
MEDIUM water level regardless of small size load (there must be lots of water in proportion to clothes to allow agitation to work)	Dilution of soil prevents its re-entrapment in clothing Efficient agitation action requires a good volume of water Dilution effect flushes out greater numbers of microbes
Washing powder (detergent) specially formulated for cold OR warm washing	Hot water washing powder is formulated for temperatures 60-80°C
Use of a washing powder which contains oxygen bleach designed for warm or cold water	Oxygen bleaches formulated for hot washes (perborates) do not work effectively under 60—80°C
Extra rinses	Remove more suspended microbes and detergent-residue from clothing



WILL CHEMICALS SHRINK OR FADE CLOTHING?

Washing powder which contains oxygen bleach will have no more bleaching effect than that produced by washing items of clothing a lot during their lifetime.

Delicates:

Obviously nylons and woollens CANNOT be washed in this manner.

A cold/warm "Delicate Wash" is used, with a Wool Wash product.

Adding Chemicals:

Addition of chemicals onto wet laundry can cause faded spots. To avoid this the machine is filled with water first, then washing powder which contains oxygen bleach is added. Clothing may then be added.

Note:

All linen fades over time (compare old and new bath towels of the same original colour).

Items sent to a commercial or regional laundry service will be laundered at 65°C with bleach (except delicates), with no problems.