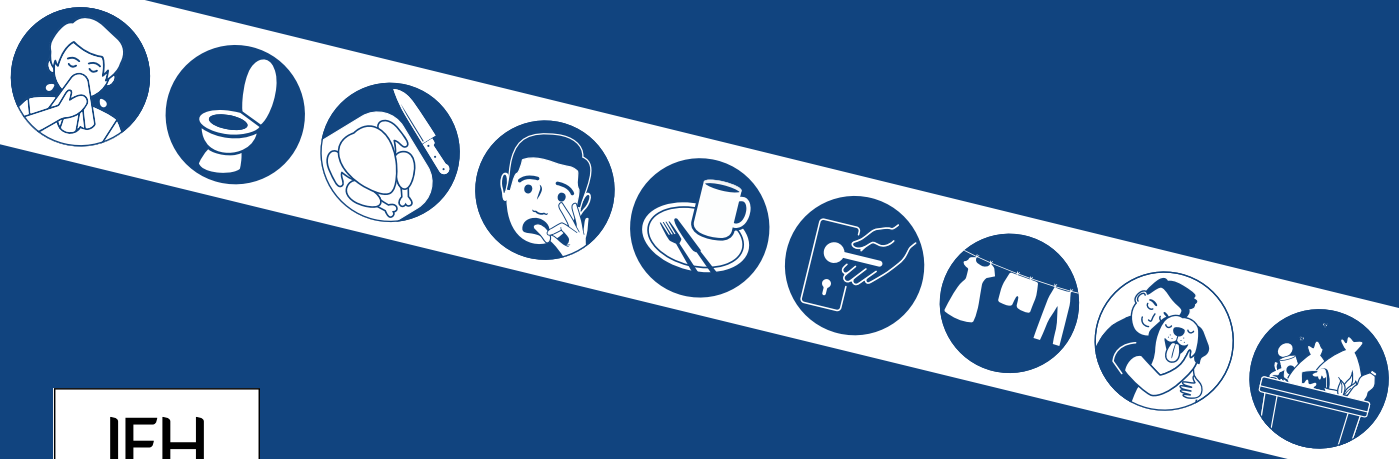
Breaking The Chain Of Infection in our homes and our everyday lives

a practical approach to encourage effective Targeted Hygiene behaviour



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This material is designed to enable the public, and those who communicate with the public, to understand how to practise effective hygiene in our homes and everyday lives in public spaces, to reduce spread of infections, including food borne and other intestinal infections, respiratory infections, skin infections etc.

It is based on the Risk Management approach developed by the International Scientific Forum on Home Hygiene, called Targeted Hygiene. Key to the approach is to focus on hygiene as the public see and experience it, as a set of interrelated, interdependent actions performed throughout daily life, to target protection from exposure to harmful microbes.

An important aspect of the Targeted Hygiene approach, as highlighted by the COVID pandemic, is that messages such as "wash your hands frequently" are inadequate to prevent spread of infection, within a household or community, because they give no clear indication of WHEN hand hygiene is needed, or that it needs to be applied simultaneously with other actions. This resource shows how, at Key Moments when there is risk of a spread of infection, interventions such as hand, surface or air hygiene work together to reduce population infection risk to an acceptable level. Thus, Targeted Hygiene is a holistic Risk Management approach which contrasts with infection prevention in healthcare settings where practices are aimed at high level "one-on-one" protection of staff and patients in high-risk situations.

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The International Scientific Forum on Home Hygiene (IFH) is a not-for-profit, non-governmental organisation, established in 1997 to develop and promote a science-based approach to hygiene in home and everyday life settings as a means to reduce the global burden of infectious diseases.

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Understanding and using this resource

Based on consumer polling in 2019, IFH has concluded that, although people say they understand "Targeted Hygiene", their current perception is that this means targeting cleaning and hygiene practices at the PLACES which are deemed to be risky. From this we determined there is a need to develop material that clearly communicates the core principle of Targeted Hygiene which is that, to be effective, hygiene practices must be targeted at the TIMES (or Moments) when there is greatest risk of spread of microbes that are harmful to health. This is what Targeted Hygiene means.

The challenge of creating this material is to present Targeted Hygiene in a simple way which can be understood not only by those who communicate with the public but also the public themselves, with the ultimate aim to change behaviour.
As such, the approaches we adopt set out hygiene in the way the public experience it:

- Firstly, they need to be prompted to recognise **"WHEN"** there is need to practise hygiene i.e., the Key Moments when there is a risk of spread of harmful microbes (we believe there are 9 Key Moments).

- Secondly, they need to be able to recognise **"WHERE"** to act to prevent spread. For each Key Moment, we have designed a one-page graphic which identifies a "Checklist" of the places where action is needed, from 2 actions up to a maximum of 5.

- Finally, they need to know **"HOW"** to practise hygiene at each intervention point. In reality, 5 of these actions e.g. hand hygiene are common to most or all of the moments, so they do not need to be relearnt for each Key Moment.

The following material - as far as possible - focuses on visual recognition, rather than memorizing information. This is a recognised approach to overcoming barriers to hygiene behaviour change. It has been designed as a basis for developing materials/toolkits which can be distributed to the public as part of hygiene promotion campaigns e.g.:

- Using logos depicting the Key Moments as stickers, strategically placed to alert and reinforce recognition of Key Moments for action.

- Developing a simple set of "one page graphics" for quick reference about where and how to practise hygiene at a Key Moment.

Behaviour change experts may conclude that 9 Key Moments and 2-5 actions at each moment, is far too much information to impart and would act as a barrier to change. On the other hand, further reducing the number of moments or places would compromise the scientific principles which underpin the effectiveness of risk management approaches. We believe that by presenting the material in discreet stages, to reflect the order in which it is needed – and in a repetitive style for each moment, it should be possible to communicate this approach effectively. For health professionals who may say the material is oversimplified, we believe it provides the solid framework, on which to build more detail as required using our IFH training resource.

Dr Sally Bloomfield, Dr Lisa Ackerley,
International Scientific Forum on Home Hygiene. March 2022

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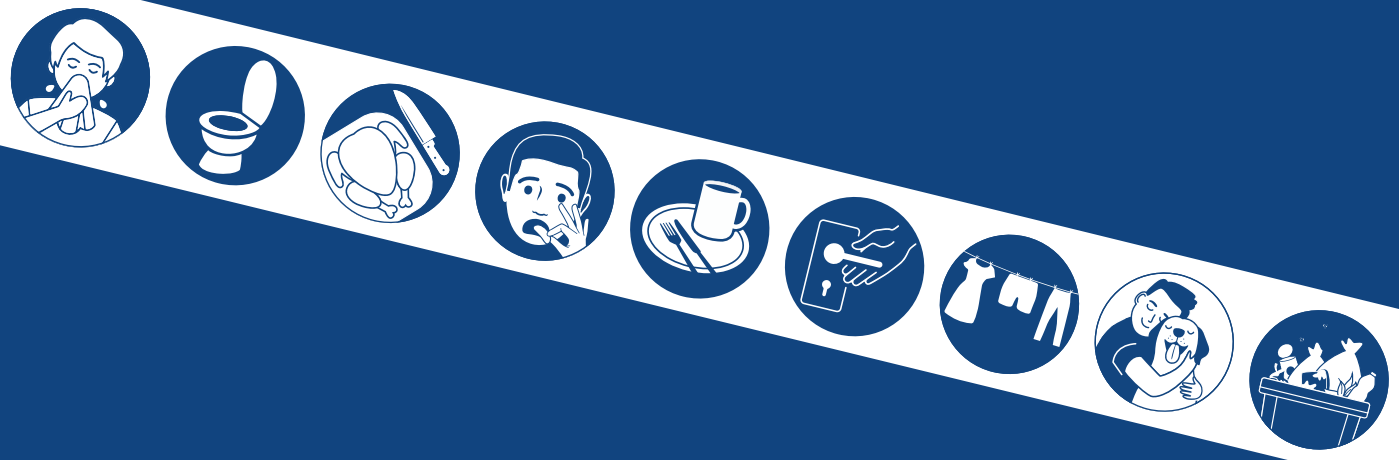
The principles of a risk-based approach to hygiene

Targeted Hygiene – WHEN and WHERE



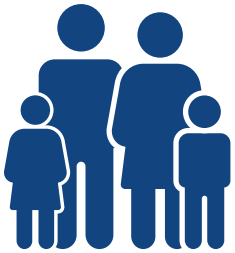
The Chain Of Infection - "The Journey Of The Germ"

MAIN SOURCES OF INFECTION

- **PEOPLE**
- **FOOD**
- **DOMESTIC ANIMALS**

During our daily lives we carry out actions at various **"Key Moments"** that cause harmful microbes to be spread from these sources - in a way that we become exposed to them

Hygiene is about acting at these "Key Moments" to break the chain of infection



To become infected, harmful microbes must gain entry to our body through our mouth, nose, eyes, cuts, abrasions

IF HARMFUL MICROBES ARE PREVENTED FROM ENTERING THE BODY, WE CANNOT BECOME INFECTED

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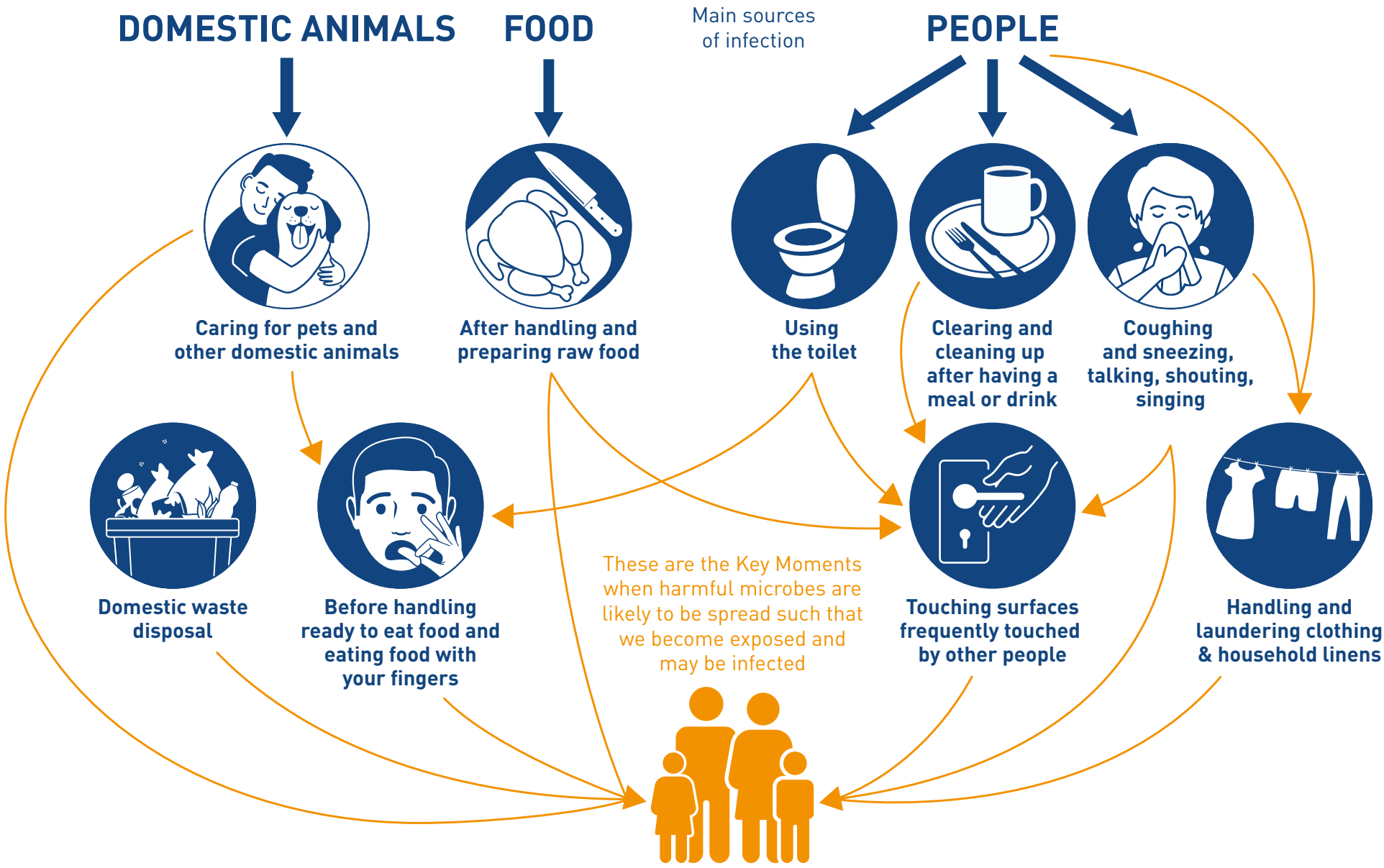
The Key Moments/actions when hygiene really matters



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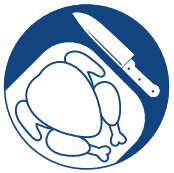
Where to practise hygiene at each of the Key Moments



CONTROL POINTS FOR ACTION		Coughing and sneezing, talking, shouting, singing	Using the toilet	After handling and preparing raw food	Before handling ready to eat food and eating food with your fingers	Clearing and cleaning up after having a meal or drink	Touching surfaces frequently touched by other people	Handling and laundering clothing & household linens	Caring for pets and other domestic animals	Domestic waste disposal
Hand hygiene		✓	✓	✓	✓	✓	✓	✓	✓	✓
Hand contact surface hygiene		✓	✓	✓			✓	✓	✓	✓
Food contact surface hygiene				✓	✓					
Cooking, eating and drinking utensils				✓	✓	✓			✓	
Cleaning equipment hygiene		✓	✓	✓	✓	✓	✓		✓	✓
Laundry hygiene								✓	✓	
Air hygiene	Social distancing	✓								
	Mask wearing	✓								
	Ventilation	✓								
Others	Cleaning the toilet		✓							

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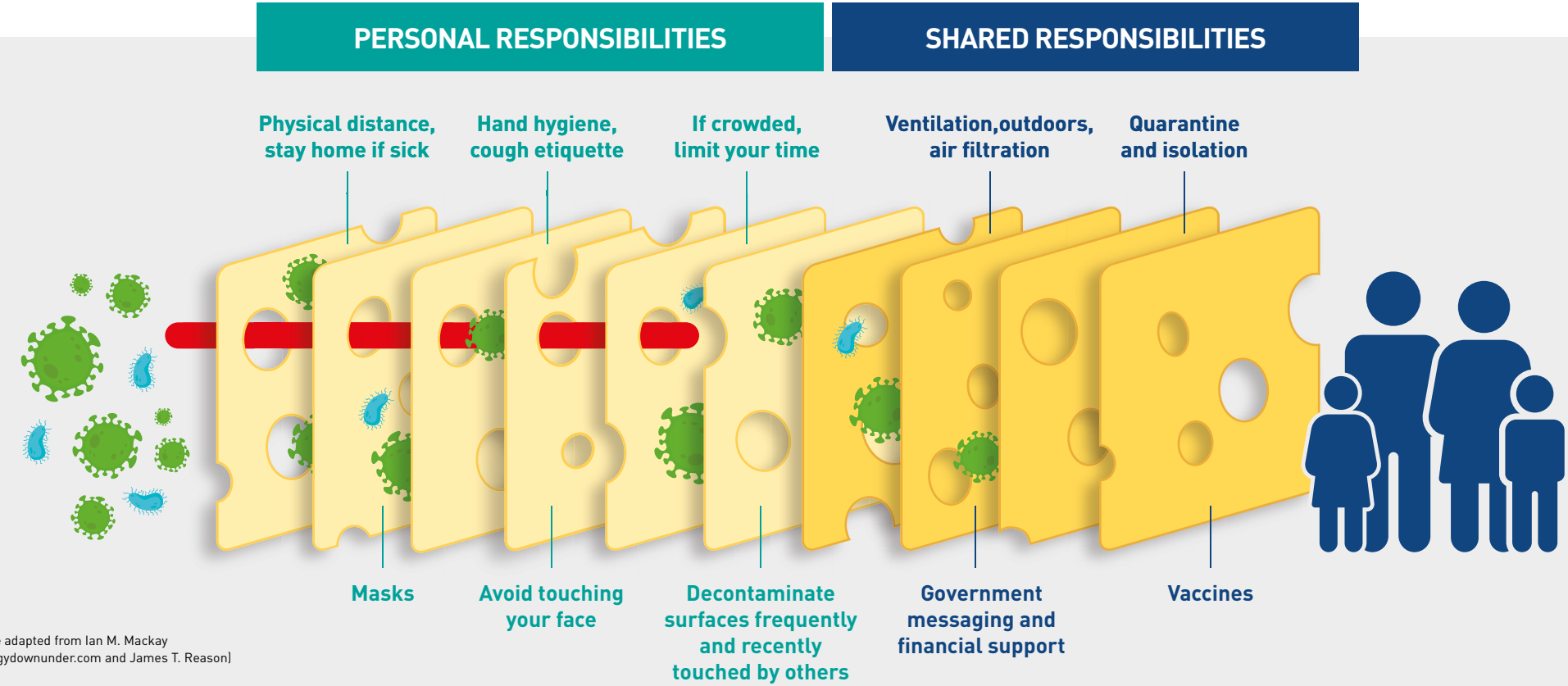
The Swiss Cheese Model

Preventing the spread of respiratory infections

A core principle of Targeted Hygiene is that, although, for example, hand hygiene is central to all 'Key Moments', it must be combined with other interventions to ensure risk is contained. This is despite the fact that some hygiene practices may contribute more than others in reducing the overall risk.



Source adapted from Ian M. Mackay (virologydownunder.com and James T. Reason)

The slices of cheese represent the various barriers of protection

The holes illustrate none of these barriers are 100% effective

The model shows how barriers work together to minimise the risk of spread of infection in a population

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Other key things we need to understand

These are not the only moments for hygiene, but if we recognize them and act at these moments, this will deal with most of the risk of infection spreading

If a household member is more vulnerable to infection

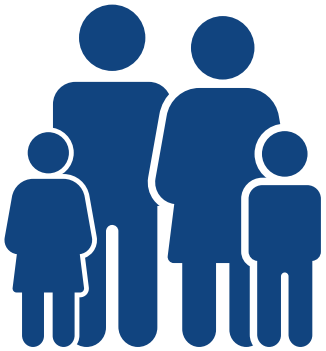
i.e is shielding, the same 9 moments apply, it's just that if good hygiene is not rigorously applied, there's greater risk of the person becoming infected.

If somebody in the household is infected,

the same 9 moments apply, it's just that if hygiene is not rigorously applied, there's greater risk of infections spreading.

Remember - we can be infected and infectious to others without showing symptoms,

that's why it's important to practice good hygiene all the time.



Keeping our home clean is important

for our well-being and peace of mind, and getting rid of odours and unsightly mould, but however often and how rigorously we do it, it does little to protect us against infection.

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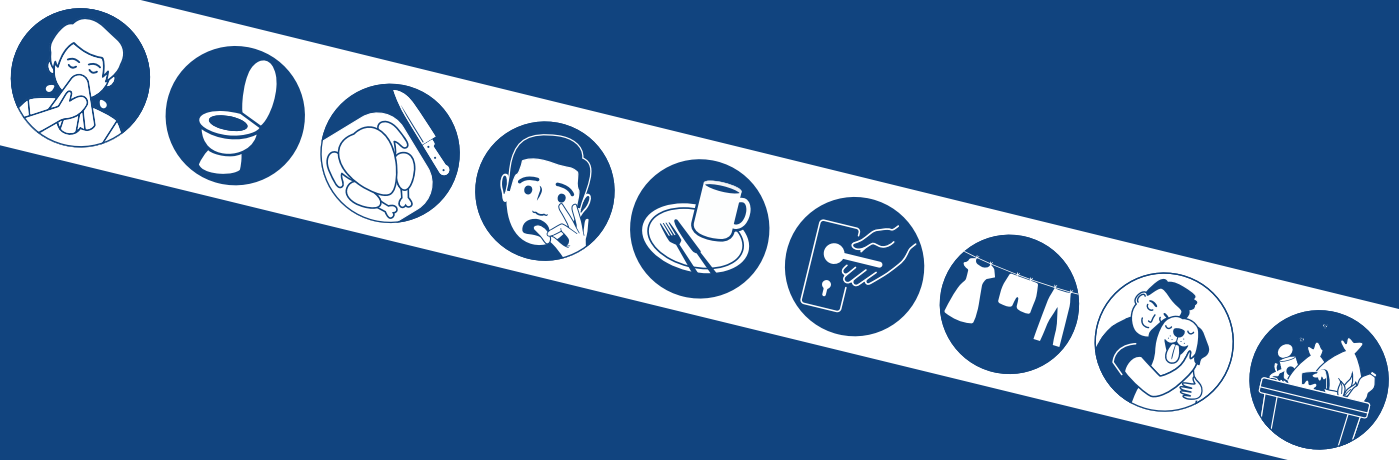
Putting Targeted Hygiene into practice – WHEN, WHERE and HOW



Key Moment 1:
Coughing and sneezing, talking, shouting, singing

Checklist for cleaning or intervention		Decontaminate by*
Hands		Handwashing with soap, followed by thorough rinsing under running water or use alcohol hand sanitizer if there is no access to handwashing facilities
Surfaces touched by hands		Clean with detergent, then disinfect as directed, or use a disinfectant cleaner
Cleaning cloths		Rinse in hot soapy water, disinfect as directed and dry thoroughly
Air	**Social distancing**	Keep 2 metres apart from other people or meet outdoors
	Mask wearing	Wear a well fitting mask, which has at least 3 layers of material
	Ventilation	Make sure enclosed spaces are well ventilated

Notes:

Obviously, in daily life – it is not feasible to decontaminate contact surfaces every time we touch them. However, just knowing these surfaces contribute to spreading infection act as a prompt to practise good hand hygiene, to ensure you do not pass infection to others, or they to you.

What is happening - How do respiratory infections spread?

If someone has a respiratory infection, virus particles will be spread from their mouth or nose when they cough, talk loudly etc. This involves large droplets of infected mucous which travel only short distances, or tiny aerosol particles that can travel distances greater than 2-3 metres. Particles can also get onto the persons hands or settle onto surfaces. We become infected either by inhaling airborne particles or touching the mouth, eyes or lining of the nose with contaminated hands from touching surfaces etc.

* For further details go to Home Hygiene: Prevention of infection at home and in everyday life: a learning and training resource (2018)

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Key Moment 2:
Using the toilet

Checklist for cleaning or intervention	Decontaminate by*
Hands	Handwashing with soap, followed by thorough rinsing under running water or use alcohol hand sanitizer if there is no access to handwashing facilities
Surfaces touched by hands	Clean with detergent, then disinfect as directed, or use a disinfectant cleaner
Hand Towel	Launder at 60°C, or at 40°C with a detergent that contains an active oxygen bleaching agent
Cleaning cloths and equipment	Rinse in hot soapy water, disinfect as directed and dry thoroughly
Cleaning the toilet	Flush the toilet after use with the lid closed. Clean and descale toilet bowl, regularly. Clean and disinfectant toilet hand touch surfaces

What is happening? - How do infections spread when using the toilet?

Washing hands after using the toilet prevents spread of gut infections via the hands and contact surfaces. If someone has diarrhoea, splashes and aerosols generated by toilet flushing can contaminate contact surfaces and be spread via hands. Because everyone in the family uses the toilet, other infections e.g respiratory infections can be spread via surfaces frequently touched by all family members. If someone in the household is infected, it is advisable that everyone washes or sanitizes their hands BEFORE using the toilet area.

* For further details go to Home Hygiene: Prevention of infection at home and in everyday life: a learning and training resource (2018)

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Key Moment 3:
After handling and preparing raw foods

Checklist for cleaning or intervention	Decontaminate by*
Hands	Handwashing with soap, followed by thorough rinsing under running water
Chopping board	Clean with a cloth in hot soapy water, apply disinfectant as directed, rinse and dry
Kitchen utensils	Machine dishwash, or clean with a cloth in hot soapy water, then rinse under clean running water
Surfaces touched by unwashed hands during food preparation e.g taps or cupboard door handles	Clean with detergent, then disinfect as directed or use a disinfectant cleaner
Cleaning cloths and equipment	Rinse in hot soapy water, disinfect as directed and dry thoroughly, or use a disposable cloth

Notes:

1. By cleaning up immediately after preparing the food, the risk is contained and there is no need to clean the rest of the kitchen – that is what Targeted Hygiene means.
2. Hygiene on its own cannot make food safe to eat, food safety also depends on safe cooking and safe storage of foods.*

What is happening? How do infections spread when handling raw meat, poultry, fish, vegetables and fruit?

Harmful microbes will be spread to any surface that comes into contact with the food, or is touched by our hands during the preparation process. These can be spread from our hands by touching our mouth or handling ready to eat foods.

* For further details go to Home Hygiene: Prevention of infection at home and in everyday life: a learning and training resource (2018)

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Key Moment 4:
Before handling ready to eat food and eating food with fingers

Checklist for cleaning or intervention	Decontaminate by*
Hands	Handwashing with soap, followed by thorough rinsing under running water or use alcohol hand sanitizers if there is no access to handwashing facilities
Food contact surfaces	Clean with a cloth in hot soapy water, apply disinfectant as directed, rinse and dry before placing food on surface
Eating and drinking utensils	Use clean eating and drinking utensils
Kitchen utensils – including the chopping board	Use clean kitchen utensils
Cleaning cloths	Use a clean cloth for wiping surfaces

What is happening? Why is it important to wash your hands before handling ready to eat foods and eating with your fingers?

It is important to make sure all surfaces are clean before handling and preparing ready-to-eat foods. This includes hands, kitchen utensils, eating utensils and using a clean cloth to clean and disinfect kitchen surfaces which may be in contact with the food during handling. Whether at home, or on the go, our hands may be contaminated from the surfaces we are constantly touching, particularly those frequently touched by other people. Even if they look clean, hands must be washed or sanitized, so that any contamination is not transferred to our mouth via ready-to-eat foods that we handle.

* For further details go to Home Hygiene: Prevention of infection at home and in everyday life: a learning and training resource (2018)

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Key Moment 5:
Clearing and cleaning up after having a meal or drink

Checklist for cleaning or intervention	Decontaminate by*
Hands after handling used dishes etc	Handwashing with soap, followed by thorough rinsing under running water
Eating and drinking utensils	Machine dishwash, or clean with a cloth in hot soapy water, then rinse under clean running water
Cleaning cloths and equipment	Clean in hot soapy water immediately after use and dry thoroughly

What is happening? Why is it important to wash hands and eating and drinking utensils after having a meal, drink or clearing up?

If someone in the household is infected they may transfer harmful microbes to the cutlery, crockery, cups and glasses that they use and to the hands of anyone that helps to clear away the dishes etc. Decontaminating utensils prevents person to person transmission of infection. If washing up is done by hand in a bowl, harmful microbes can be transferred from one utensil to another via the bowl water. That is why it is vital to follow up the removal of food waste from feeding and drinking utensils by rinsing them in clean water to remove any residual microbial contamination before drying. Harmful microbes can be transferred from one utensil to another via cloths, washing up sponges and brushes so these must be rinsed after use and dried.

* For further details go to Home Hygiene: Prevention of infection at home and in everyday life: a learning and training resource (2018)

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Key Moment 6:
Touching surfaces frequently touched by other people

Checklist for cleaning or intervention	Decontaminate by*
Hands	Handwashing with soap, followed by thorough rinsing under running water or use alcohol hand sanitizers if there is no access to handwashing facilities
Surfaces touched by hands e.g tap handles, cupboard door handles	Clean with detergent, then disinfect as directed or use a disinfectant cleaner
Cleaning cloths	Rinse in hot soapy water, disinfect as directed and dry thoroughly

Notes:

Decontaminating hand contact surfaces – every time - before or after touching them is not feasible – but - just knowing these surfaces contribute to spread of infection acts as a prompt to practise good hand hygiene, to ensure that you do not pass infection to others, or they to you.

What is happening? How do harmful microbes spread via hand contact surfaces?

If someone who is infected and has harmful microbes on their hands, either poo or nasal secretions or from handling raw foods or their pets, these microbes will be transmitted to any surface they touch. These microbes will gradually die i.e become non-infectious, but if someone else touches the same surface before this, they will risk picking up some of the microbes which may be enough to infect them if they touch their eyes, mouth or lining of their nose or if they handle ready-to-eat foods.

* For further details go to Home Hygiene: Prevention of infection at home and in everyday life: a learning and training resource (2018)

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Key Moment 7:
Handling and laundering clothing & household linens

Checklist for cleaning or intervention	Decontaminate by*
Hands	After handling "dirty" clothing etc wash hands with soap, followed by thorough rinsing under running water
Items of laundry in close contact with the body – Clothing, towels, bedlinens, face cloths	Launder at 60°C, or at 40°C with a detergent that contains an active oxygen bleaching agent
Surfaces touched by hands	Clean with detergent, then disinfect as directed, or use a disinfectant cleaner

What is happening? How do harmful microbes spread via clothing and household linens?

During our daily lives, harmful microbes from our gut, skin and other surfaces will be spread onto clothing and household linens that come into direct contact with our body. These may be transferred to other surfaces via the hands of the person who is doing the laundry. If clothing etc is not laundered in a way that reduces microbes to a safe level, they may be picked up onto the clothing etc of other family members which are included in the same wash and infect them.

* For further details go to Home Hygiene: Prevention of infection at home and in everyday life: a learning and training resource (2018)

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Key Moment 8:
Caring for pets and other domestic animals

Checklist for cleaning or intervention	Decontaminate by*
Hands	Handwashing with soap, followed by thorough rinsing under running water after handling animals or their utensils, bedding etc, particularly before eating food with fingers
Surfaces touched by unwashed hands whilst caring for pets etc e.g tap handles, door handles	Clean with detergent, then disinfect as directed or use a disinfectant cleaner
Feeding utensils	Wash and store separately from family utensils
Cleaning cloths	Rinse in hot soapy water, disinfect as directed and dry thoroughly
Pet bedding	Launder at 60°C, or at 40°C with a detergent that contains an active oxygen bleaching agent

What is happening? How do infections spread from our domestic animals?

Domestic animals can carry harmful microbes in their gut, mouth, eyes, ears, skin or fur which are shed via their saliva, paws or poop. They can also pick up harmful microbes from the indoor and outdoor environments they inhabit - on their paws or onto their fur (e.g pet fur can become contaminated with human skin scales and MRSA bacteria). These can then be passed on to family members via hands, food and contact surfaces, or direct contact with the animal. It is therefore important when playing with, or caring for domestic animals, we practice good hygiene.

* For further details go to Home Hygiene: Prevention of infection at home and in everyday life: a learning and training resource (2018)

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Key Moment 9:
Domestic waste disposal

Checklist for cleaning or intervention	Decontaminate by*
Hands	After disposing of waste, wash hands with soap, followed by thorough rinsing under running water
Surfaces touched by hands e.g bin lid	Clean with detergent, then disinfect as directed or use a disinfectant cleaner
Cleaning cloths	Rinse in hot soapy water, disinfect as directed and dry thoroughly

What is happening? Why is hygiene important during waste disposal?

Household waste, but most particularly food leftovers and discarded raw food (bones, skin etc) may be contaminated with harmful microbes. It is important waste is disposed of safely into a bin with a good fitting lid. During handling and disposal of waste, hands and the hand contact surfaces of the bin may become contaminated.

* For further details go to Home Hygiene: Prevention of infection at home and in everyday life: a learning and training resource (2018)

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What makes The Targeted Hygiene approach different and understandable to the public:

1. It looks at hygiene from the point of view of the public and how they experience it – i.e as a range of interrelated, overlapping actions they perform on a routine daily basis as needed, to prevent the Chain Of Infection.

2. Targeted Hygiene stresses the concept that the checklist of actions **WORK TOGETHER** to minimise risk, i.e that e.g handwashing alone cannot eliminate risk it can only reduce it (and handwashing needs to be at Key Moments).

3. It works on the basis that, regardless of whether it is food hygiene, or toilet hygiene, or respiratory hygiene, the basic principles of how infectious microbes are spread are the same. The action does not need to be re-learnt for each Key Moment.

4. It works on the basis that a hygiene practice applied to a specific place is the same regardless of the moment at which it is practised e.g the practice of handwashing is the same regardless of whether it is "after toilet use" or "after handling raw food". It does not need to be re-learnt for each moment.

5. Targeted Hygiene can be communicated through a series of visual prompts rather than people having to memorize lists of instructions. It makes the invisible visible!

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Further practical details of "how" to practise Targeted Hygiene can be found at

> Home Hygiene: Prevention of infection at home and in everyday life: a learning and training resource (2018)

> Lessons from COVID-19 – the need to develop and promote hygiene behaviour that meets 21st Century needs

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