

From Laundry Room to Resident Room: Translating IPC Research into Residential Practice

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RESEARCH AND GUIDANCE ON LAUNDERING PRACTICES IN CARE HOMES

AIM

- To determine the current infection control policies/practices utilised by UK care/residential homes in their laundry management



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- Online surveys were created using Qualtrics®, using both quantitative and qualitative questions
 - Distributed across social media, promoted by Knowlex (IPC conference provider), Textile Services Association, Infection Prevention Society (IPS), and ENRICH Scotland via their distribution lists in 2024

Four Surveys:

Survey 1 & 2 Staff working within care homes including managers

Survey 3 & 4 via care home IPS SIG – focus on IPC standards

Survey 1 & 2 n=901 responses

Survey 1 care home managers = 495 respondents

Survey 2 other care home staff = 406 respondents

Almost even split between managers from multiple sites and single sites, with 50.11% (225) of managers being responsible for multiple sites and 48.89% (224) managers being responsible for one single site



Survey 3 & 4- These related to IPC protocols

Survey 3 & 4 n=161 responses

Survey 3 care home managers = 104 respondents

Survey 4 other care home staff = 57 respondents

Across the four surveys we gathered 1062 responses

WHERE DO CARE HOMES LAUNDRY THEIR LINEN?

	Care home staff	Care home managers (single site)
Launder on site (OPL)	84.30% (306)	82.83% (164)
Of the remaining 16-17% care homes:		
Launderette (coin machines)	24.56% (14)	36.64% (12)
Outsource to commercial laundry	73.68% (42)	63.64% (21)

Care home managers (multiple sites)
25% (155) OPL
25% (156) Launderette
25% (156) commercial
25% (155) other

DOMESTIC WASHING MACHINE RESEARCH

- Previous studies have shown a variation in laundering practices employed by healthcare employees could lead to variation in decontamination efficacy (Cayrou et al., 2025):



- Type of detergent

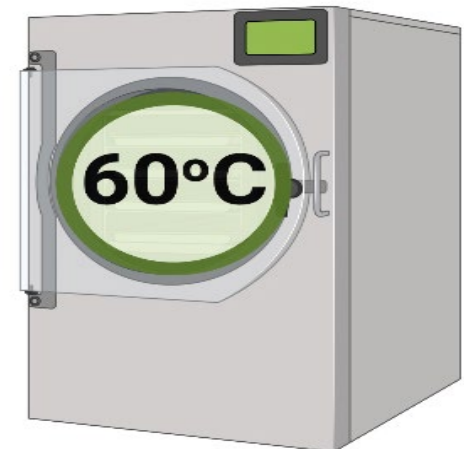


- Washing temperature









- Cycle duration







Additionally, there is evidence to that domestic machines often fail to reach the programmed temperature and decontaminate the textiles.









MATERIALS: DOMESTIC WASHING MACHINES

						
Make	Indesit	Beko	AEG	Hoover	Indesit	Indesit
Model	IWSD61251 Eco	WDEY854 P44QW	7000 series kombi	HBWD851 4DC-80	IW007143	IWE91281
Machine Age (years)	8	1.4	3	4	2	9







RESULTS: FULL-LENGTH CYCLE

	1	2	3	4	5	6
Cycle Length:	1h 52 min	2h 5 min	2h 30 min	1h 55 min	2h 40 min	3h 5 min
Peak Temperature:						
Holding time ($\pm 1^\circ\text{C}$):	5 min	39.25 min	9.5 min	8 min	10.5 min	28.5 min
Machine Age (years)	8	1.4	3	4	2	9

RESULTS: RAPID CYCLE / ECO CYCLE

	1	2	3	4	5	6
Cycle length:	1h 25 min	44min	1h 4 min	59min	2h 30 min	1h 44min
Peak Temperature:	 30°C	 57°C	 45°C	 57°C	 58°C	 20°C
Holding time ($\pm 1^\circ\text{C}$):	38 min	10.5 min	2.5 min	7 min	12.75 min	20.5 min
Machine Age (years)	8	1.4	3	4	2	9

LOG₁₀ REDUCTION OF *E. FAECIUM* BIOINDICATORS
 FOLLOWING DOMESTIC LAUNDERING USING A 60°C FULL-
 LENGTH OR RAPID WASH CYCLE (N=4).

							
Full length 60°C	Biological	0	>5	6	6	6	0
	Non-Biological	0	5	6	6	6	0
Rapid 60°C	Biological	0	5	0	>4	6	0
	Non-Biological	0	6	0	6	6	0

ANTIBIOTIC RESISTANCE FOUND IN DOMESTIC LAUNDRY MACHINES

Antibiotic resistance genes detected in domestic laundry machines. The resistance genes are ranked from the highest frequency (top) to the lowest frequency (bottom) among all the samples. Only the 10 most frequent ones are listed. Gene data were extracted from the CARD database.

Gene	Resistance mechanism	Drug class
adeF	Antibiotic efflux	tetracycline antibiotic, fluoroquinolone antibiotic
qacG	Antibiotic efflux	disinfecting agents and antiseptics
VanYB	Antibiotic target alteration	glycopeptide antibiotic
VanWI	Antibiotic target alteration	glycopeptide antibiotic
ANT 3" IIC	Antibiotic inactivation	aminoglycoside antibiotic
VanG	Antibiotic target alteration	glycopeptide antibiotic
rsmA	Antibiotic efflux	diaminopyrimidine antibiotic, phenicol antibiotic, fluoroquinolone antibiotic
soxR	Antibiotic efflux + Antibiotic target alteration	tetracycline antibiotic, cephalosporin, penam, fluoroquinolone antibiotic, phenicol antibiotic, disinfecting agents and antiseptics, rifamycin antibiotic, glycylicline
AbaQ	Antibiotic efflux	fluoroquinolone antibiotic
abeS	Antibiotic efflux	macrolide antibiotic, aminocoumarin antibiotic

WHAT TYPES OF TEXTILES ARE LAUNDERED IN ON-PREMISE LAUNDRY SITES?






	Managers (single site)	Managers (multiple site)	Managers total:
Residents' Personal Laundry	43.75% (133)	40.15% (104)	43.87% (247)
Staff Uniforms	30.92% (94)	37.45% (97)	33.92% (191)
Bedroom Linen	25.33% (77)	20.46% (53)	23.09% (130)

HOW OFTEN IS BED LINEN CHANGED?



	Healthcare Worker	Managers (single site)	Managers (multiple sites)	Total Managers:
Weekly	23.03% (82)	45.68% (74)	61.54% (96)	53.45% (170)
3 times a week	17.42% (62)	24.69% (40)	21.15% (33)	22.95% (73)
Daily	30.90% (110)	17.28% (28)	10.26% (16)	13.93% (44)
As Required	25.84% (92)	9.26% (15)	6.41% (10)	7.86% (25)
Other	2.25% (8)	3.09% (5)	0.64% (1)	1.88% (6)

HOW WELL IS LAUNDRY BEING PROCESSED IN ON-PREMISE LAUNDRY SITES ACCORDING TO CARE HOME STAFF?

Question	Always	Normally	Rarely	Never	Not Sure
Bed linen 	49.30% (175)	22.82% (81)	23.94% (85)	3.66%(13)	0.28% (1)
Personal laundry 	45.48% (161)	33.33% (118)	16.95% (60)	3.95%(14)	0.28% (1)
Staff uniforms 	43.71% (153)	29.14% (102)	20.00% (70)	4.86%(17)	2.29% (8)

DO SETTINGS HAVE SEPARATE AREAS FOR CLEAN AND SOILED LAUNDRY?

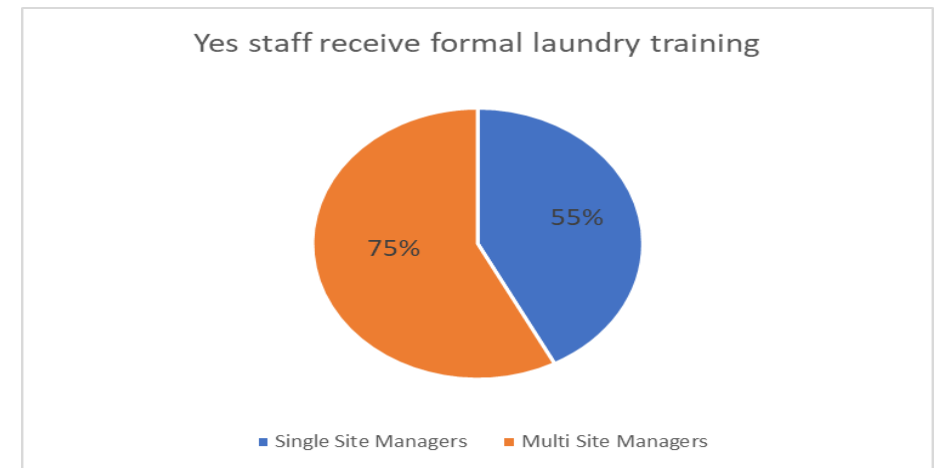
	Managers (single site)	Managers (multiple sites)	Managers total:
No – but we are looking into implementing this	11.24% (19)	10.37% (17)	10.81% (36)
No – it is not possible to do this (due to costs and/or space)	15.98% (27)	5.49% (9)	10.81% (36)
No – we do not have this and are not looking to implement this	2.37% (4)	4.88% (8)	3.60% (12)
Yes	69.82% (118)	78.66% (129)	74.17% (247)

TRAINING PROCEDURES FOR LAUNDRY:

Would care home staff like to receive further laundry management education and training?

- **86.74% (229)** said **yes**
- **13.26% (35)** said **no**

According to care home managers when asked “do settings have any formal training procedures in place for their laundry operatives?”



QUALITATIVE - FOCUS GROUPS AND INTERVIEWS 10 PARTICIPANTS

Four themes:

- 1. Understanding infection control regulations to laundering
- 2. The challenges and barriers to applying laundry regulations in care homes
- 3. Mixed linen items and adherence to the regulations
- 4. Supporting the sector with implementation, education and training

QUALITATIVE - FOCUS GROUPS AND INTERVIEWS 10 PARTICIPANTS

I. Understanding infection control regulations to laundering

“a chain of care homes has lots of support, so have a team that are dedicated to training and developing procedures and also work with procurement so there is dedicated laundry equipment whereas smaller care homes may not have as much support” (participant B)

“So, they don’t have to wade through HTM, they’ve got a team and me in my role to help interpret what’s in it to implement it” (participant A)

2.The challenges and barriers to applying laundry regulations in care homes

“Mostly it's the space, we wouldn't have space for that really. It's quite a cramped laundry room. I think that potentially the only one [(barrier)] though” (participant H)

“I think what people fail to recognise is that care homes are homes not hospitals, so you have to accept that there are some differing risks and challenges as opposed to a hospital environment. We don’t have as big a set up for laundry facilities, we have 2 washers 2 dryers. They’re industrial, they’re not domestic, but that still means that they’re running 24 hours a day” (participant I)

QUALITATIVE - FOCUS GROUPS AND INTERVIEWS 10 PARTICIPANTS

*“.... if things go wrong in the laundry, it’s probably the highest number of complaints any care home get”
(participant I)*

*“It is not suitable to wash resident’s clothing at 70°C, it can result in shrinking and ruining their clothes. There has to be a balance between the IPC and the fact that these are people’s belongings, and this is their home”
(participant B)*

4. Supporting the sector with implementation, education and training

3. Mixed linen items and adherence to the regulations

“A lot is human error, as opposed to following the policies and procedures” (participant A)

*“[we] Invest so much time in training and bombard them [agency staff] with information on induction, and then 6 months they go and work elsewhere”
(participant B)*

CARE HOME LAUNDRY GUIDANCE

Co-produced by:



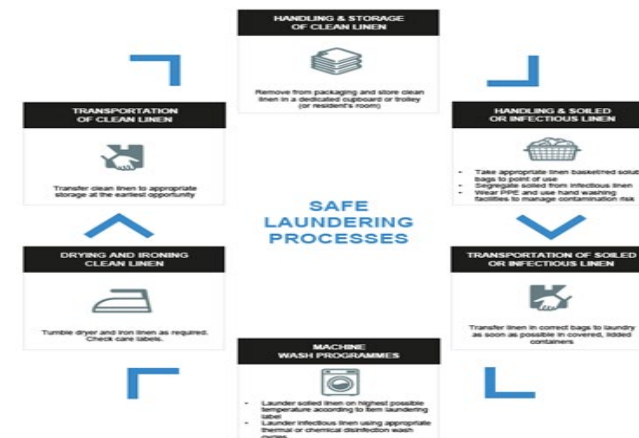
Guidance for the Safe Management of Linen in Residential, Nursing or other Social Healthcare Environments

4th November 2024

Guidance for the Safe Management of Linen in Residential, Nursing or Other Social Healthcare Environments

Each care home will have its own processes and risk assessments, but there are key areas to focus on. Physical space can be a challenge, however, some areas are fundamental in helping ensure you deliver a compliant laundry operation.

- Provide separate areas for the handling and storage of soiled or infectious and clean linen
- Ensure infection control procedures are maintained throughout the laundry process
- Keep equipment clean and well-maintained
- Ensure laundry chemicals are managed adequately



- IPS Care Home SIG laundry management working group
- Developed educational/training documents for care homes
- The developed guidance can be found at:
 - Infection Prevention Society - [Safe Management of Linen in the Health Care Environment | IPS](#)
 - Skills for Care - [GO Online: Inspection Toolkit](#) – search for laundry
 - IPS Bronze Impact Award

TRAINING MODULES?

- New laundry training modules have been developed for those staff who work with laundry in care homes.



Funded by Higher Education Innovation Fund (HEIF) and Textiles Services Association

GUIDANCE FOR THE SAFE MANAGEMENT OF LINEN IN RESIDENTIAL, NURSING OR OTHER SOCIAL HEALTHCARE ENVIRONMENTS

TRAINING MODULES:

These training modules have been created to support learning, understanding, and improvement in laundry management within care homes and social care settings.



WHAT NEXT?AUDITS OF 50 CARE/RESIDENTIAL HOMES ACROSS THE UK.

- Care home laundry audits across the UK

Safe Management of Linen in Residential, Nursing or other Social Healthcare Environments: Audit tool		Date:	Care Home Code:	Region:	Audit 1 or 2:				
Instructions: Select 'Yes', 'Partial', or 'No' in the Response column using drop down box									
Scoring: Yes=2, Partial=1, No=0. Overall compliance % is calculated automatically at the bottom of the audit tool									
Domain	Audit Question	Response	Score	Actions Required / Notes	Action Lead	Time for completion	Action progress comments	Action open/closed	Guidance & Training Module
Training & Education	All staff handling linen have received training on: clean linen handling, segregation of used/infectious linen, temporary storage & transport (Notes: review training materials, resources and training records)	Yes	2						Click here to access the guidance
Training & Education	Laundry staff have received training on: laundry environment, equipment operation, chemical safety, wash programmes, drying & ironing (Notes: review training materials, resources and training records)								Click here to access the poster
Training & Education	Training is refreshed regularly and recorded (Notes: review training materials, resources and training records)								
Handling & Storage of Clean Linen	Clean linen is never transported with used or infectious linen (Note: observe practice, review any protocols or standard operating procedures if available)								Module 1: https://www.canva.com/design/DAGwtH6VurU/EhF0oQd8bNjQmY2GvFCB7A/edit?utm_content=DAGwtH6VurU&utm_campaign=designshare&utm_medium=link&utm_source=
Handling & Storage of Clean Linen	Hand hygiene is performed before handling clean linen (Note: observe practice, review any other hand hygiene audits performed previously)								
Handling & Storage of Clean Linen	Clean linen is removed from transport containers before storage (Note: observe practice, review any protocols or standard operating procedures if available)								
Handling & Storage of Clean Linen	Clean linen storage is: designated, enclosed, intact, impervious to moisture, cool, dry, and off the floor (Note: inspect room)								
Handling & Storage of Clean Linen	No inappropriate items stored with clean linen (Note: inspect room)								
Handling & Segregation of Used/Infectious Linen	Appropriate PPE is accessible and worn when handling used/infectious linen (Note: observe practice and environment, review any protocols or standard operating procedures if available)								Module 2: https://www.canva.com/design/DAGwtNC2G5U/UNdM9p4V3R3Pj0mS7H-Hu0ie-dl?utm_content=DAGwtNC2G5U&utm_campaign=designshare&utm_medium=link&utm_source=
Handling & Segregation of Used/Infectious Linen	Items are rolled/folded, not shake (Note: observe practice, review any protocols or standard operating procedures if available)								
Handling & Segregation of Used/Infectious Linen	Sanitary waste and solids are removed before transport to laundry (Note: observe practice, review any protocols or standard operating procedures if available)								
Handling & Segregation of Used/Infectious Linen	Used linen is placed in white fabric bag; infectious linen placed in soluble red bag and impermeable outer bag (Note: observe practice, review any protocols or standard operating procedures if available)								
Handling & Segregation of Used/Infectious Linen	Linen containers are covered during transport and cleaned daily (Note: observe practice, review any protocols or standard operating procedures if available and cleaning schedules/routines)								
Temporary Storage & Transport	Infectious linen is taken promptly to the laundry to avoid bag breakdown (Note: observe practice, review any protocols or standard operating procedures if available)								Module 3: https://www.canva.com/design/DAGwtP2C5U/0dnTH2qFCuaBzUlvTD/edit?utm_content=DAGwtP2C5U&utm_campaign=designshare&utm_medium=link&utm_source=
Temporary Storage & Transport	Temporary storage is in designated dirty utility/sluice room for minimal time (Note: observe practice, review any protocols or standard operating procedures if available)								
Temporary Storage & Transport	Transport to laundry is always in closed/covered trolley or bag (Note: observe practice, review any protocols or standard operating procedures if available)								
Laundry Environment	Laundry room is separate from kitchen/clinic/public areas (Notes: observe environment)								Module 4: https://www.canva.com/design/DAGwtjBeTg0ME_uHqvs5medVz7uM_vw/edit?utm_content=DAGwtjBeTg0ME_uHqvs5medVz7uM_vw&utm_campaign=designshare&utm_medium=link&utm_source=sharebutton
Laundry Environment	Separate "dirty" and "clean" flow maintained, or risk-assessed alternative in place (Notes: observe environment and risk assessment if required)								
Laundry Environment	Surfaces are intact, impervious, easy to clean with appropriate cleaning product (Notes: observe environment)								
Laundry Environment	Handwash sink with soap and paper towels and hand sanitiser available (Notes: observe environment and risk assessment if required)								
Laundry Environment	No food/drink/personal items stored in laundry (Notes: observe environment)								
Laundry Environment	Laundry cleaning schedule is in place and audited (Notes: review cleaning schedule and previous audits with actions taken to rectify any issues identified)								
Equipment - Washing Machines	Industrial/commercial programmable machines used (Notes: check machines and manufactures guidance)								Module 5: https://www.canva.com/design/DAGwtPUIVU_u08IvqjNjocXpznz7L3Zw/edit?utm_content=DAGwtPUIVU&utm_campaign=designshare&utm_medium=link&utm_source=sha
Equipment - Washing Machines	Machines are validated for thermal/chemical disinfection (Notes: check machines and manufactures guidance)								

Audit tool creation: Kerry Holden

AUDIT OUTCOMES FROM 10 RESIDENTIAL & LD & MH HOMES

Laundry audit compliance data

Home	Pre-Compliance (%)	Post-Compliance (%)	Improvement (%)
1	79	87	8
2	79	79	0
3	81	95	14
4	79	92	13
5	81	92	11
6	77	88	11
7	77	78	1
8	77	90	13
9	86	96	10
10	82	91	9

10 homes with a total of 437 beds

IMPROVEMENT AND ISSUE AREAS

Consistent improvements observed across most sites in:

- Staff training uptake
- Correct segregation of linen
- Use of covered trolleys
- Laundry environment controls
- Availability of PPE
- Cleaning schedules and flow layouts

Most persistent issues across sites:

- Oil/emollient-contaminated linen not consistently washed with emulsifier (Still "No" in many post audits)
- Enclosure/adequacy of clean linen storage (still failing at some homes)
- Spill kits / clarified COSHH spill response (inconsistencies)
- Transport with covered trolleys (some still using open or broken lids)
- Training gaps (where managers did not deliver the provided training package)

HOW TO GET INVOLVED IN THE AUDITS AND RESEARCH

Please contact:

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Or

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