Clinical glove use improvement

An observational and microbiological study identifying educational priorities

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Goals of the study

- gloves use
- risk factors and mechanisms associated with gloves overuse
- microbiological study to document patient-to-patient transmission risk associated with gloves overuse
- for HCWs in healthcare institutions and nursing homes

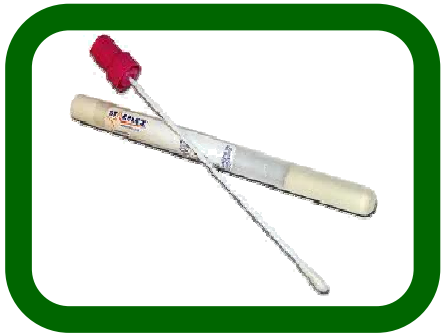
Design of the study

❶ observational study

- observational study performed by infection control nurses/physicians
- regional protocol with common items
  gloves use, duration, surfaces touched before gloves removal
- interview of the observed HCWs

Goals of the study

- gloves use
- risk factors and mechanisms associated with gloves overuse
- a microbiological study to illustrate patient-to-patient transmission risk associated with gloves overuse
- for HCWs in healthcare institutions and nursing homes



Design of the study

❶ observational study

❷ microbiological study

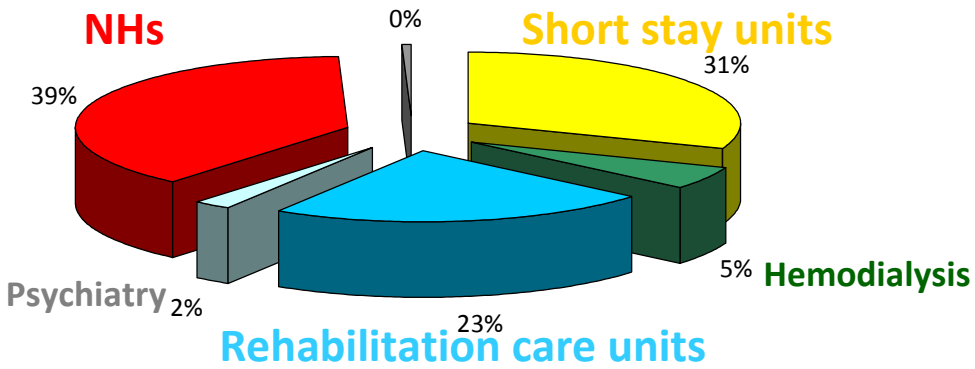
- gloved fingers before gloves removal
- surfaces touched with gloved fingers before gloves removal
- search for microbial pathogens
  - identification
  - antimicrobial susceptibility testing
  - molecular typing (RAPD and PFGE)

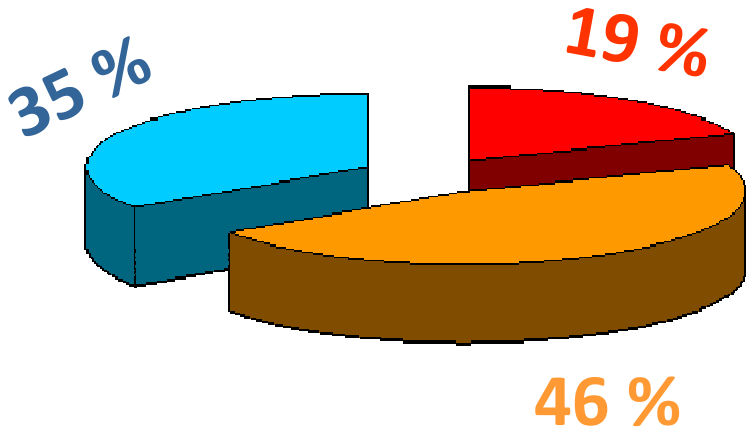
1723 observations

- **329** with potential contact with blood
- **797** with potential contact with body fluids (except blood)
- **597** without contact BBF

70 participating centers

- 44 healthcare institutions
- 16 nursing homes

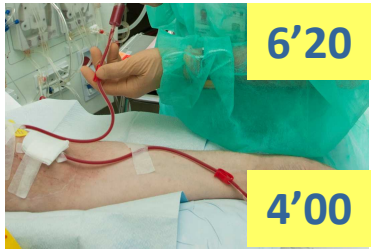




Aim of the study | Design | Results Self protection | Results overuse | Results microbiological study | Conclusions

potential exposure to blood / gloves ▷ 72 % (237/329)

Removal of bloody dressing
20/22 ▷ 91 %

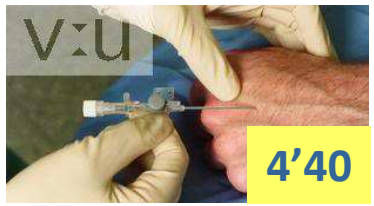


AV fistula
insertion 13/16 ▷ 81 %
removal 23/25 ▷ 92 %

Capillary puncture
40/57▷70 %

Venous puncture
49/71 ▷ 69 %

Insulin injection
9/14 ▷ 64 %



Venous catheter insertion
12/21 ▷ 57 %

Subcutaneous injection
13/27 ▷ 44 %

Manip. of blood samples
2/7 ▷ 28 %

gloves no gloves

Aim of the study | Design | **Results** Self protection | **Results** overuse | **Results** microbiological study | Conclusions

potential exposure to other body fluids ▷ 83 % (665/797)

Genital hygiene

207/223 ▷ 93 %

Surgical wound

18/20 ▷ 90 %

Bedsore care

15/18 ▷ 83 %

Manip. of incont. producs

36/43 ▷ 84%

Bedpan cleaning

23/25 ▷ 92 %

Toilets cleaning

66/74 ▷ 89 %

Non surgical wound

53/65 ▷ 81 %

defiled surfaces cleaning

19/24 ▷ 79 %

gloves no gloves

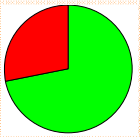
Aim of the study | Design | **Results** Self protection | **Results** overuse | **Results** microbiological study | Conclusions

Self protection ▷ 80 %

gloves no gloves

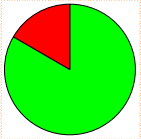
P<0.001

contact with blood

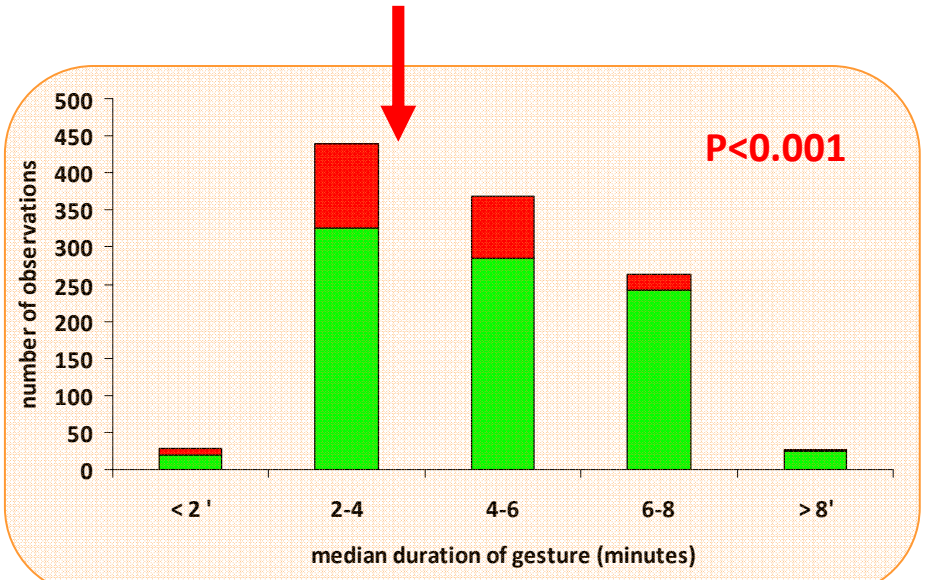


237/329 ▷ 72 %

contact with other BF



665/797 ▷ 83 %



Interview of non users (n=224)

- ▷ minimal infectious risk (36 %)
- ▷ dexterity (25 %)
- ▷ short duration of the gesture (17 %)
- ▷ common practices into the unit (17 %)
- ▷ lack of knowledge (9 %)

oversuse / no potential exposure to BBF ▷ 29 % (171/597)

Blood pressure

0/33 ▷ -

Bed making

11/75 ▷15 %

Body care (no wound)

5/27 ▷ 18 %

Hygiene (no genital)

54/104 ▷ 54 %

Medicine giving

1/26 ▷ 4 %

Dressing

8/46 ▷ 17 %

Patient’s mobilization

13/53 ▷ 24 %

Bedsore prevention

16/18 ▷ 89 %

no gloves gloves

Aim of the study | Design | **Results** Self protection | **Results** overuse | **Results** microbiological study | Conclusions

oversuse / no removal ▷ 28 % (251/902)

Genital hygiene

82/207 ▷ 40 %

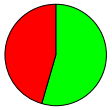
Venous puncture

6/49 ▷ 12 %

Manip. of defiled laundry

11/45 ▷ 24 %

Toilets cleaning



30/66 ▷ 45 %

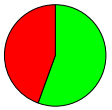
Capillary puncture

4/40 ▷10 %

Non surgical wound

6/53 ▷ 11 %

Manip. of incont. products



16/36 ▷ 44 %

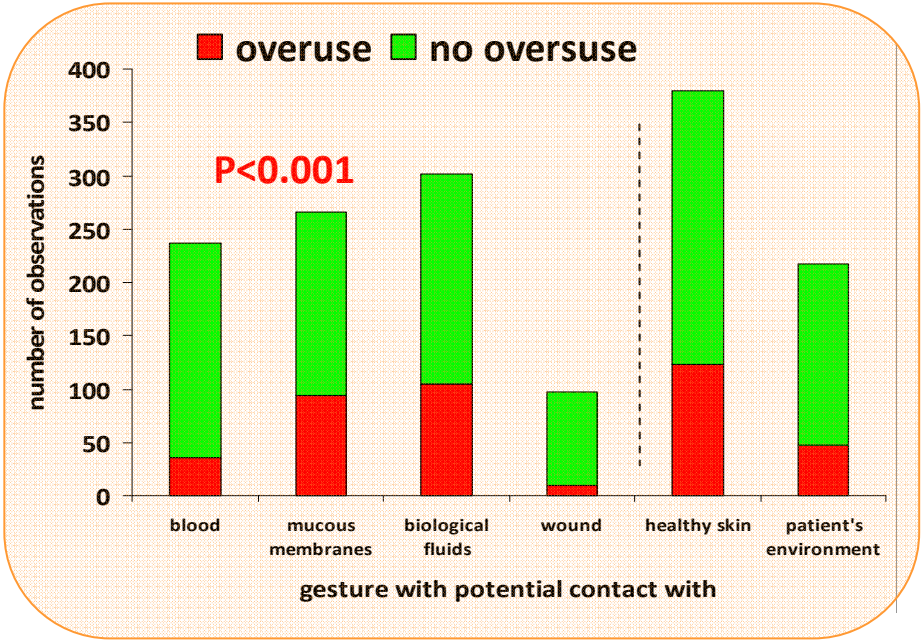
Bedpan cleaning

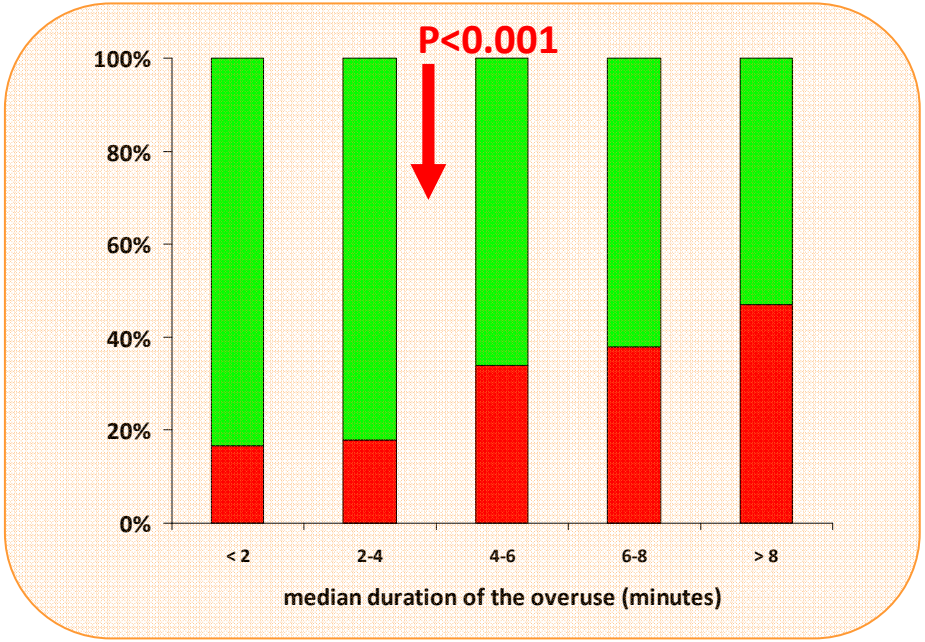
5/23 ▷ 22 %

no gloves gloves

Aim of the study | Design | **Results** Self protection | **Results** overuse | **Results** microbiological study | Conclusions

oversuse ▷ 25 % (422/1723)





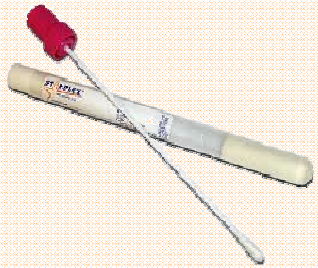
Interview of HCWs with oversuse (n=422)

- ▷ self protection (34 %)
- ▷ wish of a distance with the patient (5 %)
- ▷ common practices into the unit (25 %)
- ▷ succession of cares (14 %)
- ▷ skin lesions (6 %)

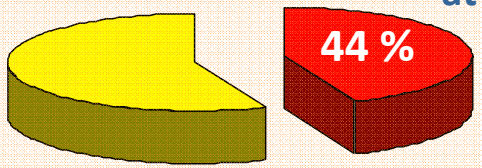
Contamination of gloved fingers ▷ 44 % (94/214)

214 observations of gesture with contact with

- healthy skin (n=55)
- mucous membranes (n=83)
- wound (n=24)
- body fluids (n=50)
- environment (n=2)

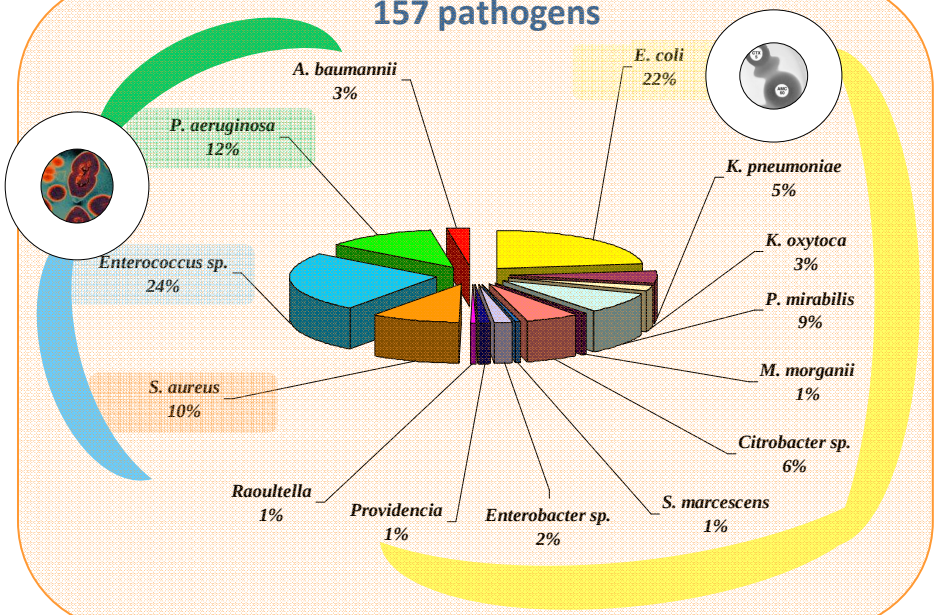


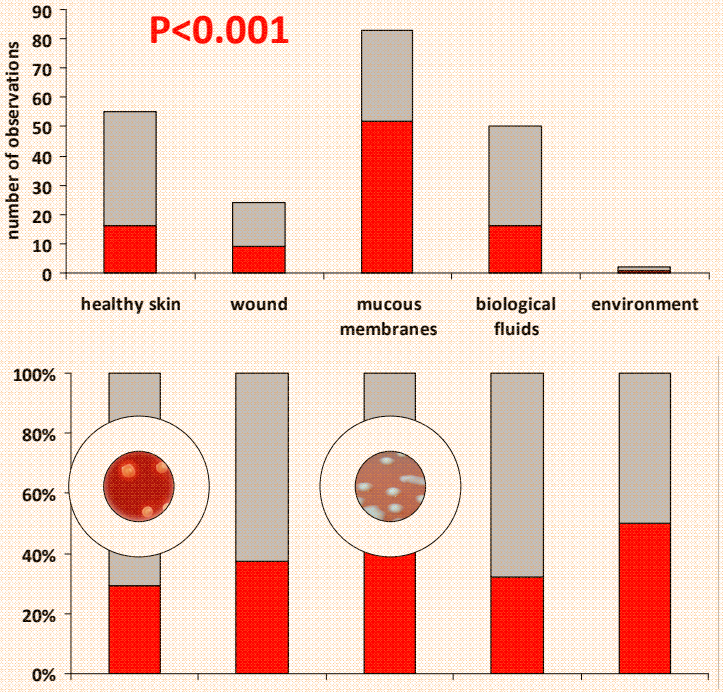
at least one pathogen



1 to 4 pathogens
(median 1)

157 pathogens



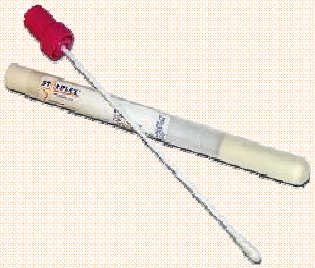


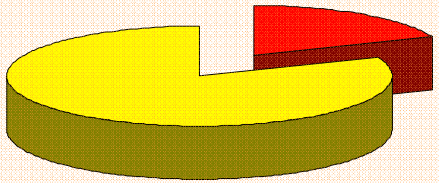
Aim of the study | Design | **Results** Self protection | **Results** overuse | **Results** microbiological study | Conclusions

Contamination of touched surfaces ▷ 19 % (35/184)

78 observations of gesture with contact with

- healthy skin (n=11)
- mucous membranes (n=40)
- wound (n=1)
- body fluids (n=26)
- environment (n=2)

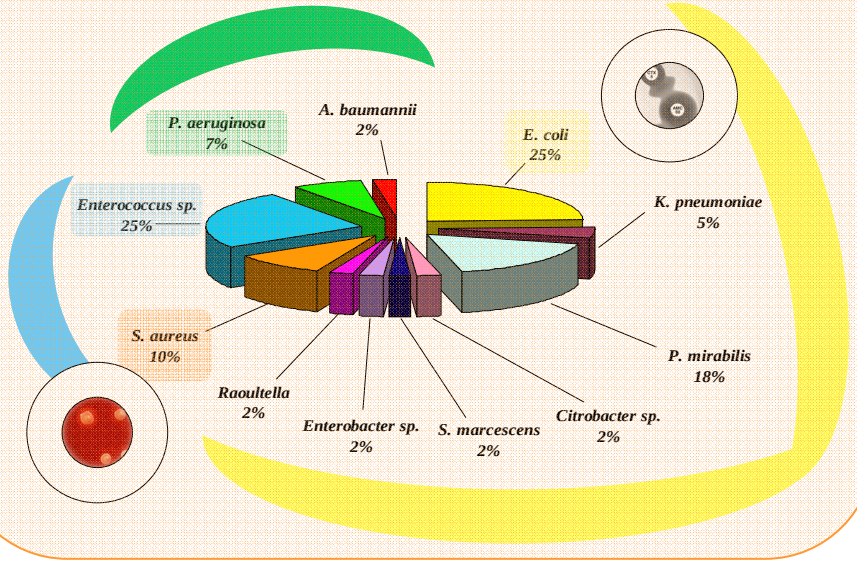




at least one pathogen

1 to 3 pathogens
(median 1)

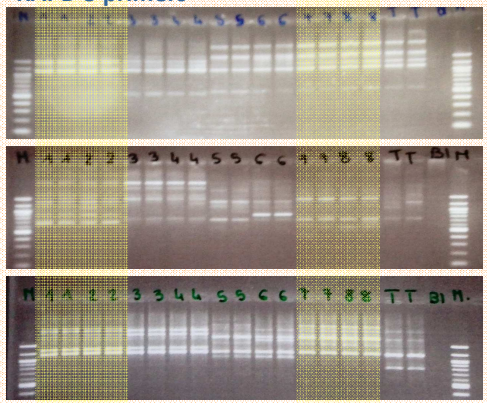
41 pathogens



Molecular typing of isolates
fingers / surfaces

- *E. coli* (5 cas)
- *K. pneumoniae* (1 cas)
- *C. koseri* (1 cas)
- *S. marcescens* (1 cas)
- *Raoultella sp.* (1 cas)
- *P. mirabilis* (1 cas)

RAPD 3 primers



- *P. aeruginosa* (3 cas)
- *E. faecalis* (1 cas)

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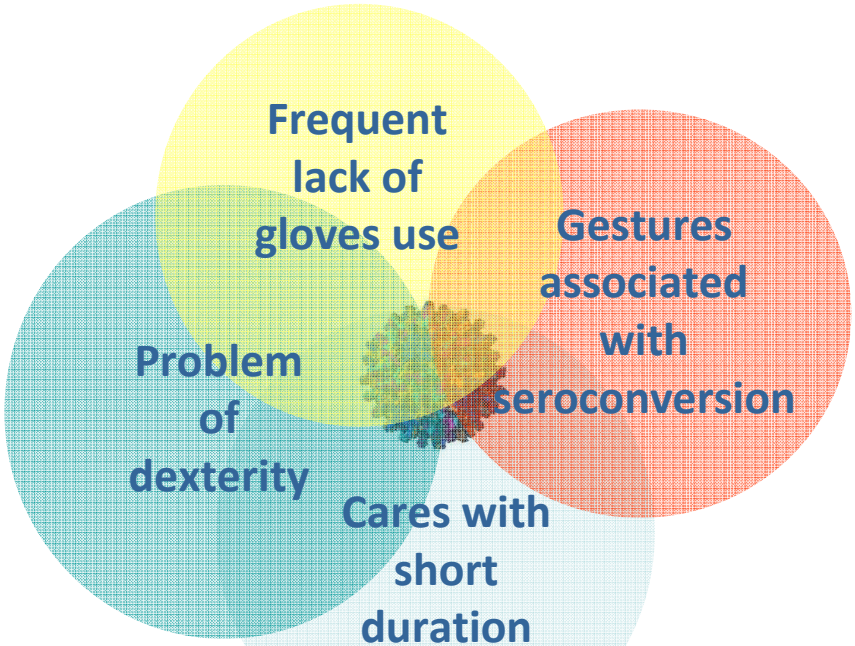
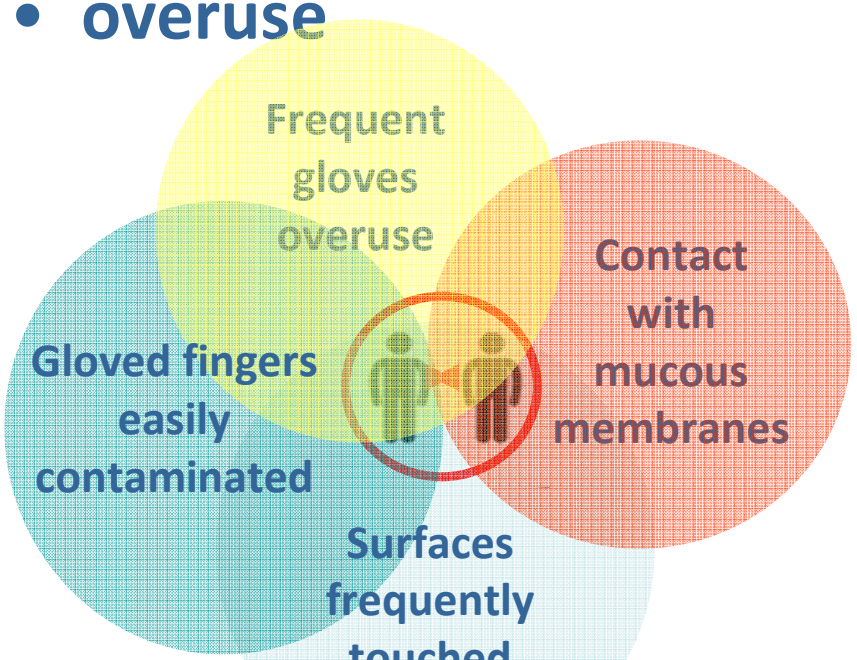
2 educational priorities

- self protection



Education / risk
Simulation

- overuse



Genital hygiene
Patient hygiene
Manip. of incont. products

Aim of the study | Design | **Results** Self protection | **Results** overuse | **Results** microbiological study | Conclusions

Thanks to

ABILLY, EHPAD Gaston Chargé (CH Loches)
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BEAUMONT LA RONCE, EPSY Clinique du Val de Loire
BEAUNE LA ROLANDE, HL
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CHAMBRAY LES TOURS, CL Pôle Santé Léonard de Vinci, EPSY Clinique Ronsard
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LUYNES, HL
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MONTOIRE SUR LE LOIR, HL, EHPAD Antoine Moreau
NOGENT LE PHAYE, ESSR La Boissière
NOGENT LE ROTROU, CH, EHPAD La Roseraie (CH)
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TOURS, CHRU, CL Saint Gatien, ESSR Velpeau, HAD ARAIR, Centre HEMOD
ARAUCO, EHPAD Korian Les Amarantes
VALENCAY, HL
VIERZON, CH
VENDOME, CH, CL St Cœur, EHPAD Bon Secours
VERNOUILLET, ESSR Maison Blanche
VILLELOIN COULANGE, EHPAD Les Baraquins (CH Loches)

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