

need to remain conscious of the risk of healthcare-associated infections.

We believe that strict adherence to standard and contact precautions can reduce the risk of nosocomial transmission of SFTSV and that taking airborne precautions as an extreme measure is required during aerosol-generating procedures. Additional evidence on the route of SFTSV transmission might guide the best precautions in the future.

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Practice and attitudes toward alcohol-based hand disinfection among German infection control teams

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To the Editor—Recent publications have discussed the microbiological effectiveness of 15 seconds of alcohol-based hand disinfection and of reducing the time recommendations for alcohol-based hand disinfection in standard operating procedures to increase compliance,¹ the reprocessing of conventional hand disinfection dispensers,² and the technical failure rate of automatic hand disinfection dispensers,³ and the problems related to using alcohol-containing tissue wipes rather than conventional dispensers.⁴

We designed an anonymous survey and distributed it during the 2018 Freiburg congress of infectious diseases and infection control (Freiburger Infektiologie- und Hygienekongress) to analyze the attitudes of German infection control teams regarding those issues and the integration of patients into hand disinfection programs.

Material and Methods

Congress participants were asked to deposit the filled out data sheets in exit-door drop boxes. Data were collected without personal

identifiers according to the EU General Data Protection Regulation (GDPR). Therefore this is not human research and the data analysis did not require the review of an institutional review board. Predefined subgroup analyses included nurse infection control practitioners (NICP) and physician members (PM) of the infection control team (either hygiene-link physicians or certified specialists in hospital hygiene). The Fisher exact test was used to test for significance between groups; $P < .05$ was considered statistically significant.

Results

In total, 385 surveys were returned (mean age, 50 years; range, 24–66). Of all respondents, 20% were from hospitals with <200 beds, 25% were from hospitals with 201–400 beds, 18% were from hospitals with 401–600 beds, 19% were from hospitals with >600 beds, 13% were from rehabilitation hospitals, and 5% were from elsewhere (“other”). Among all respondents, 96 were in the PM group and 223 were in the NICP group; the remaining respondents were link nurses, public or occupational health physicians, and medical technicians. Table 1 shows the answers to the survey questions.

The only statistically significant difference ($P = .00001$) between physician and nurse members of the infection control team was

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Table 1. Itemized Summary of Survey Items and Answers [translated from German]

Survey Items and Answer Choices	NICP (n = 223), %	PM (n = 96), %	All Respondents (n = 385), %
Question 1: How much application time is needed for alcohol-based skin disinfection for routine use with the WHO 5 Moments of Hand Hygiene?			
5 seconds	0	0	0
10 seconds	0	1	1
15 seconds	15	10	13
20 seconds	4	8	5
30 seconds	79	80	79
No answer	2	1	2
Question 2: In your opinion, how long is the real-life application time of alcohol-based skin disinfectants in daily practice?			
5 seconds	11	24	15
10 seconds	38	34	38
15 seconds	39	33	36
20 seconds	9	7	8
30 seconds	2	2	2
No answer	1	0	1
Question 3: How much time is required for alcohol-based skin disinfection for routine use with the WHO 5 Moments of Hand Hygiene in your institution's standard operating procedures?			
15 seconds	1	3	2
30 seconds	89	69	82
60 seconds	1	3	2
90 seconds	0	3	1
As specified by the manufacturer	8	21	12
No answer	1	1	1
Question 4: How much time is required for surgical hand scrub with alcohol-based skin disinfectants in your institution's standard operating procedures?			
30 seconds	1	2	1
60 seconds	3	5	5
90 seconds	28	5	22
3 minutes	41	35	38
5 minutes	2	4	2
As specified by the manufacturer	19	26	21
No answer	6	23	11
Question 5: What is your opinion regarding the following statement: "A shorter officially recommended application time of alcoholic hand disinfectants will increase the hand hygiene compliance"?			
Agree	8	20	12
Partially agree	27	28	27
Partially disagree	38	26	35
Disagree	27	26	26
No answer	0	0	0
Question 6: What is your opinion regarding the following statement: "A realistic and doable time recommendation would increase the motivation to comply with that goal"?			
Agree	23	41	29
Partially agree	47	36	44
Partially disagree	21	17	19
Disagree	7	4	6
No answer	2	2	2

(Continued)

Table 1. (Continued)

Survey Items and Answer Choices	NICP (n = 223), %	PM (n = 96), %	All Respondents (n = 385), %
Question 7: What is your opinion regarding the following statement: "You need an additional safety buffer regarding infection control recommendations because adherence with mandated times is always lower"?			
Agree	27	23	25
Partially agree	37	35	36
Partially disagree	19	21	22
Disagree	16	20	16
No answer	1	1	1
Question 8: In your institution, is there a patient education program regarding alcohol-based hand disinfectant use?			
Yes	72	67	71
No	27	32	28
No answer	1	1	1
Question 9: In your institution, is there a "speak-up" campaign for patients regarding hand disinfection?			
Yes	18	20	18
No	82	79	81
No answer	0	1	1
Question 10: What is your opinion regarding the following statement: "Alcohol-containing tissues are a suitable alternative to pocket bottles for medical staff"?			
Agree	2	2	2
Partially agree	4	5	5
Partially disagree	28	35	30
Disagree	65	56	61
No answer	1	2	2
Question 11: What is your opinion regarding the following statement: "Alcohol-containing tissues are suitable alternative to pocket bottles for patients"?			
Agree	6	2	5
Partially agree	26	21	25
Partially disagree	24	29	25
Disagree	43	46	42
No answer	1	2	3
Question 12: What kinds of dispensers for alcohol-based hand disinfectants are used in your institution? (Multiple answers possible.)			
Automated wall-mounted dispensers	22	21	21
Mechanical wall-mounted dispensers	38	37	37
Wall-mounted disposable pump dispensers	27	34	29
Bedrail-mounted disposable pump dispensers	13	8	12
No answer	0	0	1
Question 13: How often are dispensers for alcohol-based hand disinfectants cleaned and disinfected in your institution?			
Never	17	11	15
If visibly soiled	33	39	34
With each bottle change	25	34	28
In fixed intervals	24	12	20
No answer	1	4	3
Question 14: What is your opinion regarding the following statement: "It is mandatory that hand disinfectant dispensers can be use by elbow contact"? ^a			
Agree	9	34	16
Partially agree	11	18	14
Partially disagree	25	24	24
Disagree	54	23	43
No answer	1	1	3

(Continued)

Table 1. (Continued)

Survey Items and Answer Choices	NICP (n = 223), %	PM (n = 96), %	All Respondents (n = 385), %
Question 15: If you use automatic dispenser systems, how often do you observe service interruptions or technical defects?			
Common problem	20	11	17
Rare problem	32	28	30
No problem	6	3	4
No answer	42	58	49

Note. NICP, nurse infection control practitioner; PM, physician member of the hygiene team

^a*P* = .00001 (Fisher exact test) between NICP and PM, with “agree” and “partially agree” answers counted as “yes” answers and “partially disagree” and “disagree” answers counted as “no” answers for statistical analysis.

found regarding the need for using the elbow to activate the dispenser mechanism rather than touching the dispenser with uninfected hands, which is favored by 52% of physicians compared to 20% of nurses (agree and partially agree answers were counted together, respectively). All other differences between the 2 professional groups were not significant.

Discussion

For most items, we did not find significant differences in the attitudes and preferences of physician and nurse members of the infection control team. Only elbow use of dispensers was significantly more important for physicians than for nurses, although there is no evidence for its practical value despite a theoretical rationale of less contamination of the dispenser itself.

Most infection control preventionists report that their institutional standard operating procedures define the time needed for hand disinfection as the 30 seconds indicated by the WHO Five Moments and still favor 30 seconds for alcohol-based hand disinfection. However, they acknowledge that in daily practice disinfection times of 30 seconds are almost never reached and that most disinfect their hands <15 seconds. However, most infection control preventionists think that a more realistic time requirement would increase the motivation of staff and overall adherence to hand hygiene policies, which is in accordance with the findings of Kramer *et al*¹ in their observational study in a neonatal intensive care unit. The reported preference of 30 seconds but with an expectation of higher adherence with shorter times might be a sign of reluctance to change long-standing formal rules, which is a barrier in the conceptual frame of change management and implementation science.⁵ This theory is underscored by the fact that two-thirds of the respondents agreed with the statement that you need a buffer between the formal requirement in a standard operating procedure SOP and scientifically sound minimum to generate an additional safety corridor. Although this concept is often used to define technical safety limits, it can be deleterious in behavioral psychology because it undermines trust in the scientific base of infection control recommendations.

In most institutions patients are specifically targeted in hand hygiene programs, although <20% of hospitals have a formal “speak up” campaign. Most survey respondents indicated that they would use alcohol-containing wipes as an alternative mode for hand disinfection for patients only and not for use by staff, and this idea is supported by the findings of Ory *et al*.⁴

The respondents described many different ways that alcohol-based hand disinfectant is provided in their respective institutions. Most described conventional wall-mounted dispensers, which leaves improvement potential for bedside-mounted systems that might better facilitate work flow. Technical problems with automatic systems seem to be a relevant issue, which supports the findings by Roth *et al*.²

We observed great variance in the way dispenser systems are cleaned and maintained: To do nothing, as reported by 15% of all respondents, is clearly unacceptable, whereas cleaning triggered by visual inspection is done by a weak majority and is supported by the literature.³

In summary, our survey indicated some improvement potentials regarding the infrastructure as well as the use of alcohol-based hand disinfection in German hospitals. We noted a certain amount of resistance by members of the infection control team irrespective of professional affiliation toward changing established formal practice patterns, despite new scientific evidence.

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