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Corrigendum

Corrigendum to "Hand hygiene-related clinical trials reported between 2014 and 2020: a comprehensive systematic review" [J Hosp Infect 111 (2021) 6–26]

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The results and discussion of this article refer to the number of hand hygiene opportunities (HHOs) reported in published works but, unfortunately, failed to include those described in works by von Lengerke et al. [1, 2]. This has been addressed in a revised Table IV. In addition, the results and discussion sections have been revised to include the HHOs missing previously.

References:

[1] von Lengerke T, Ebadi E, Schock B, Krauth C, Lange K, Stahmeyer JT, *et al.* Impact of psychologically tailored hand hygiene interventions on nosocomial infections with multidrug-resistant organisms: results of the cluster-randomized controlled trial PSYGIENE. Antimicrob Resist Infect Control 2019;8:56.
[2] von Lengerke T, Lutze B, Krauth C, Lange K, Stahmeyer JT, Chaberny IF. Promoting hand hygiene compliance: PSYGIENE - a Cluster-Randomized Controlled Trial of Tailored Interventions. Dtsch Arztebl Int 2017;114:29–36.

Table IV
Hand hygiene opportunities (HHOs)

Study	Clinical setting (*N*)	Observation method (number of HHOs)
van der Kooi *et al.* [58]	Medical/surgical ward (1)	Direct (59,122)
Vander Weg *et al.* [67]	Medical/surgical ward (1)	Direct (52,065)
Derde *et al.* [35]	Adult ICUs (13)	Direct (41,558)
Chhapola and Brar [79]	Neonatal ICU (1)	Direct (28,726)
Mu *et al.* [82]	Whole organization (1)	Direct (27,852)
Aghdassi *et al.* [43]	Medical/surgical wards (20)	Direct (21,424)
von Lengerke *et al.* [46]	ICU, HSCTU (10,2)	Direct (19,470)
von Lengerke *et al.* [45]	ICU, HSCTU(10,2)	Direct (19,470)
Reisinger *et al.* [44]	Medical/surgical wards + ICU (11)	Direct (13,195)
Stewardson *et al.* [61]	Whole organization (1)	Direct (12,579)
Rodriguez *et al.* [87]	Adult ICU (1)	Direct (10,429)
Saharman *et al.* [84]	Adult ICUs (2)	Direct (7187)
Kuruno *et al.* [72]	Adult ICU (1)	Direct (6050)

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Table IV (*continued*)

Study	Clinical setting (*N*)	Observation method (number of HHOs)
Lee *et al.* [62]	Medical/surgical wards (2)	Direct (4895)
Medeiros *et al.* [89]	Adult ICU (1)	Direct (4837)
Labi *et al.* [40]	Whole organization (2)	Direct (4296)
	Primary healthcare centre (13)	
Chakravarthy *et al.* [41]	Adult ICUs (3)	Direct (3612)
Tschudin-Sutter *et al.* [80]	Medical/surgical wards (12)	Direct (2923)
Santoaningsih *et al.* [77]	Medical/surgical wards (5)	Direct (2766)
Stevenson *et al.* [83]	Whole organization (1)	Direct (2654)
Su *et al.* [86]	Medical/surgical wards (5)	Direct (2079)
Schmitz *et al.* [37]	Medical/surgical wards (4)	Direct (2000)
Diefenbacher *et al.* [65]	Medical/surgical wards (4)	Direct (1894)
Apisarnthanarak *et al.* [55]	Adult ICUs (6)	Direct (1872)
Fouad and Eltaher [71]	Medical/surgical ward (1)	Direct (1374)
Teesing *et al.* [90]	Nursing homes (18)	Direct (1000)
Renaudin *et al.* [60]	Adult ICU (1)	Direct (801)
Nyamadzawo *et al.* [39]	Adult ICU (1)	Direct (659)
	Neonatal ICU (1)	
	Paediatric ICU (1)	
	High-dependency unit (1)	
	Medical/surgical wards (6)	
Donati *et al.* [85]	Medical/surgical wards (6)	Direct (448)
Derksen *et al.* [74]	Whole organization (2)	Direct (267)
Farhoudi *et al.* [88]	Whole organization (1)	Direct (255)
Staats [42]	Whole organization (42)	
	Dispensaries (155)	Electronic (20 million)
Ellison *et al.* [48]	Adult ICUs (2)	Electronic (>13.7 million)
Marra *et al.* [73]	Medical/surgical wards (2)	Electronic (648,815)
Pong *et al.* [64]	Rehabilitation centre units (5)	Electronic (402,849)
Kai *et al.* [50]	-	-
Khan and Nausheen [54]	-	-
King *et al.* [75]	-	-
Yilmaz *et al.* [52]	-	-
Nour-Eldein and Ali Mohamed [59]	-	-
Wiedenmayer *et al.* [38]	-	-
Xiong *et al.* [56]	-	-
Lea *et al.* [70]	-	-
Fox *et al.* [81]	-	-
Lytsy *et al.* [36]	-	-
Moller-Sorenson *et al.* [47]	-	-
Harrabi *et al.* [57]	-	-
Muller *et al.* [68]	-	-
Ng *et al.* [78]	-	-
Visnovsky *et al.* [69]	-	-
Benudis *et al.* [66]	-	-
Beyfus *et al.* [49]	-	-
Larson *et al.* [63]	-	-
Laurikainen *et al.* [53]	-	-
Nobile *et al.* [3]	-	-
Sopirala *et al.* [12]	-	-
Mukherjee *et al.* [51]	-	-
Total		Direct (338,289)
		Electronic (>34.8 million)
Range		Direct (255—59,122)
		Electronic (402,849—20 million)
Mean		Direct (11,276)
		Electronic (8.7 million)

ICU, intensive care unit.
HSCTU, hematopoietic stem cell transplantation units.
Note- For both papers by von Lengerke et al. [45, 46], a total HHO of 19,470 (control arm 9,386 and trial arm 10,084) is included in the sum total as both papers draw on the same compliance data.

The HHO paragraph in Results section
Hand hygiene opportunities

HH opportunities (HHOs) are ubiquitous and can be defined as a point of time when any one or more of the 'Five Moments' outlined by WHO is present and observed, either directly or electronically [5]. 35 of the included studies (61%) quantified HHOs across multiple clinical settings (Table IV). For example, Nyamadzawo et al. reported 659 HHOs across four medical wards, two surgical wards, one adult ICU, one paediatric ICU, one neonatal ICU and one HDU [39]. Furthermore, a large data set was reported by Staats, gathered over 3 years and involving 20 million HHOs within 42 hospitals and 155 dispensaries [42]. Of similar scale, Ellison et al. reported over 13.7 million HHOs over a period of 25 weeks within two adult ICUs [48]. Among the remaining 1,389,953 opportunities observed, a large proportion were observed from 40 adult ICUs (N=76,346), 57 medical and surgical wards (N=813,000), or both ICU and HSCTU (N=19,470) [45, 46].

The HHO paragraph in Discussion section
In text

Aside from those using electronic monitors linked to ABHR dispensers, a further five studies recorded whether HH had taken place and whether this had included the use of ABHR [[35],[59],[78],[82],[90]].

to

Aside from those using electronic monitors linked to ABHR dispensers, a further seven studies recorded whether HH had taken place and whether this had included the use of ABHR [[35],[45],[46],[59],[78],[82],[90]].