WHO Hand Hygiene Self-Assessment Framework Global Survey Summary Report

From April to December 2011, health-care facilities registered for the WHO SAVE LIVES: Clean Your Hands initiative and those participating in some national hand hygiene campaigns were invited to participate in a global survey based on the completion of the **Hand Hygiene Self-Assessment Framework (HHSAF).**

The survey objectives were three-fold:

- to assess the level of progress of health-care facilities in terms of hand hygiene infrastructure, promotional activities, performance monitoring and feedback, and institutional commitment, according to a range of indicators relevant to the WHO Multimodal Hand Hygiene Improvement Strategy summarized in a score;
- to identify gaps in hand hygiene infrastructures and activities according to the HHSAF indicators;
- to provide feedback through summary results.

Methods

The HHSAF is a tool providing a systematic situation analysis of hand hygiene structures, resources, promotion, and practices within a health-care facility. It resembles a questionnaire and is structured in five sections, based on the five components of the WHO Multimodal Hand Hygiene Improvement Strategy (namely system change, training and education, evaluation and performance feedback, reminders in the workplace, and institutional safety climate). The tool includes 27 indicators reflecting the key elements of each strategy component. These are assigned values totaling 100 points within each HHSAF section, adding up to a maximum overall score of 500 points. Based on its overall score, a facility is assigned to one of four levels of progress:

1. **Inadequate** (score of 0-125)**:** hand hygiene practices and hand hygiene promotion are deficient. Significant improvement is required.

2. **Basic** (score of 126-250)**:** some measures are in place, but not to a satisfactory standard. Further improvement is required.
3. **Intermediate** (score of 251-375)**:** an appropriate hand hygiene promotion strategy is in place and hand hygiene practices have improved. It is now crucial to develop long-term plans to ensure sustained improvement and progress.
4. **Advanced** (score of 376-500)**:** hand hygiene promotion and optimal hand hygiene practices have been sustained and/or improved, thus helping to embed a culture of safety around hand hygiene promotion in the health-care setting.

Advanced facilities can undergo further assessment according to 20 additional criteria and can reach the *leadership* level if they satisfy at least 12 of these criteria.

Health-care facilities were invited to submit their HHSAF results to WHO through a dedicated web site. Data were also provided by email or fax where sustained internet access was difficult or by countries where the survey was undertaken independently from WHO. Facilities were asked that the HHSAF be completed by professionals in charge of infection control or senior managers fully informed about hand hygiene activities within the institution. The analysis was performed in collaboration with the WHO Collaborating Centre on Patient Safety (University of Geneva Hospitals, Geneva, Switzerland) while keeping the facilities' identity confidential.

Summary results

Participating facilities

Overall, 2 119 health-care settings from 69 countries submitted their complete HHSAF results to WHO (Table 1). Most facilities are located in upper-middle or high-income countries.

Table 1. Countries participating in the WHO Hand Hygiene Self-Assessment Framework global survey

Country	Number of participating facilities
Algeria	6
Angola	1
Argentina	24
Armenia	2
Australia	93
Austria	1
Bahrain	2
Belgium	75
Benin	1
Bolivia	1
Brazil	906
Bulgaria	1
Burundi	1
Canada	47
Chile	1
China (People's Republic of)	7
Colombia	8
Costa Rica	1
Croatia	23
Czech Republic	3
Egypt	2
Estonia	1
France	135
Germany	19
Greece	2
Hungary	1
India	8
Indonesia	1
Iran (Islamic Republic of)	64
Ireland	2
Italy	58
Jamaica	1
Japan	3
Jordan	9
Kuwait	2
Lebanon	2
Malaysia	5
Malta	1

Mexico	2
Namibia	9
Netherlands	48
New Zealand	2
Nigeria	3
Norway	7
Paraguay	2
Peru	4
Philippines	1
Portugal	70
Republic of Serbia	40
Romania	1
Rwanda	1
Saudi Arabia	66
Senegal	27
Singapore	1
Slovenia	1
South Africa	5
Spain	65
Sudan	6
Switzerland	7
Syrian Arab Republic	1
Thailand	2
The Former Yugoslav Rep of Macedonia	1
Tunisia	1
Uganda	1
United Arab Emirates	4
United Kingdom of Great Britain and Northern Ireland	52
United States of America	129
Uruguay	1
Viet Nam	40

Information on health-care facility characteristics and the individual completing the HHSAF was not provided by all participants as data collection took place locally and not through the WHO online system in some countries. However, all facilities provided completed data on the HHSAF indicators.

Regional distribution of participating health-care facilities was as follows: 1127 from the Americas (53%; 13 countries, 19%); 615 from Europe (29%; 24 countries, 35%); 159 from the Eastern Mediterranean Region (8%; 11 countries, 16%); 152 from the

Western Pacific Region (7%; 8 countries, 12%); 55 from Africa (3%; 10 countries, 14%); and 11 from South-East Asia (0.5%; 3 countries, 4%). 736/1050 facilities (70%) were registered for the WHO “Save Lives: Clean Your Hands" initiative and 1564/2119 (74%) were involved in a national/sub-national hand hygiene promotion campaign. Most facilities were general, non-teaching, public hospitals, delivering acute or mixed (acute and long-term) care (Table 2).

Table 2. Characteristics of participating health-care facilities

Characteristics	Total
Number of countries	69
Number of participating health-care facilities*	2119
Type of facility, n (%)	
Public	747 (71)
Private	302 (29)
Facility pattern, n (%)	
Teaching	232 (22)
General	813 (78)
Type of care, n (%)	
Acute care	513 (48)
Long-term care	132 (12)
Acute and long-term	259 (24)
Other	172 (16)
Mean number of beds per facility (±SD)	318.2 (443.8)

*Information about the variables included in the table were not provided by all health-care facilities
SD= standard deviation

HHSAF results

The overall mean score reflected *intermediate* level of progress (Table 3). Most facilities were at *intermediate* or *advanced* levels (65%) of progress, with a high proportion qualifying for the leadership level. Among the HHSAF sections, the lowest scores concerned evaluation and feedback on hand hygiene activities and the institutional patient safety climate.

Table 3. Overall HHSAF score and level in participating facilities

	Values
Overall score, mean±SD, (range)	292.5±100.6 (0-500)
Hand hygiene level, n (%)	
Inadequate	111 (5)
Basic	631 (30)
Intermediate	864 (41)
Advanced	488 (24)
Proportion of centres among leadership facilities with a score ≥ 12 (%)	393/471 (83)

SD= standard deviation

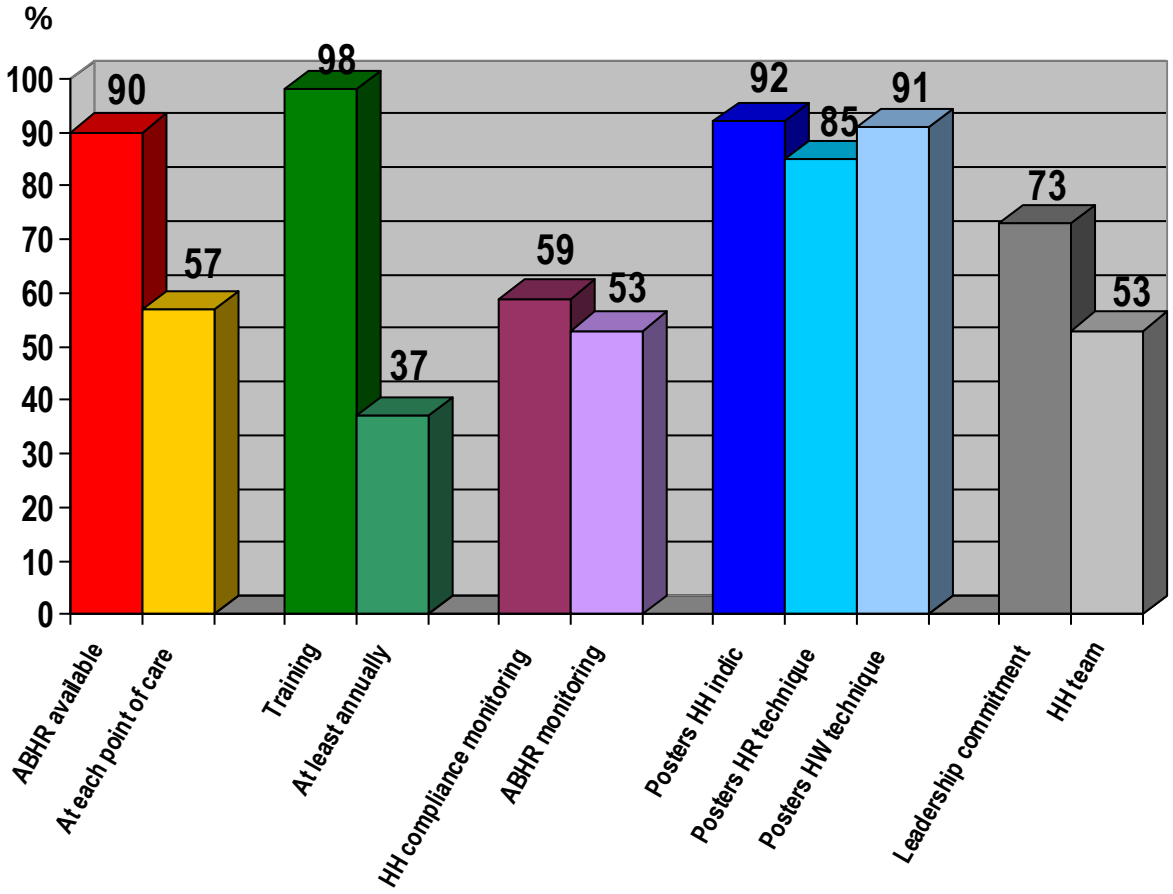
Apart from South-East Asia for which the sample (11 facilities; 3 countries) is not considered representative, the highest mean score was found in Western Pacific countries and the lowest in African countries (Table 4). The average level of progress was *intermediate* in all regions, except in Africa where it was *basic*. The highest proportion of facilities that qualified for the leadership criteria and which can thus be considered reference centres, was found in the Western Pacific Region (43%).

Table 4. Overall HHSAF score and levels by region

	Region		
	Africa	**Americas**	**Eastern Mediterranean**
Number of countries	10	13	11
Number of participating facilities	55	1127	159
Overall score, mean±SD (range)	218.5±94.8 (0-420)	265.1±104.2 (20-500)	327.1±92.4 (95-495)
Hand hygiene level, n (%)			
Inadequate	7 (13)	97 (9)	2 (1)
Basic	26 (48)	441 (40)	35 (22)
Intermediate	18 (33)	385 (35)	68 (44)
Advanced	3 (6)	190 (17)	51 (33)
Proportion of centres with a leadership score ≥ 12, n (%)	2 (67)	157 (86)	45 (88)
	Europe	**South East Asia**	**Western Pacific**
Number of countries	24	3	8
Number of participating facilities	615	11	152
Overall score, mean±SD, median (range)	324.6±76.3 (30-495)	364.8±61.0 (270-490)	351.8±89.4 (132.5-490)
Hand hygiene level, n (%)			
Inadequate	5 (1)	0 (-)	0 (-)
Basic	101 (16)	0 (-)	28 (18)
Intermediate	340 (56)	7 (64)	46 (31)
Advanced	163 (27)	4 (36)	77 (51)
Proportion of centres with a leadership score ≥ 12, n (%)	121 (78)	3 (75)	65 (85)

The Figure shows the responses to some questions of the HHSAF that are related to key indicators included in each HHSAF section were considered. Overall, 90% of facilities declared that alcohol-based handrubs were available (but in discontinuous supply in 8%) with 57% installed at each point of care. Ninety-eight percent of facilities reported the existence of staff training on best hand hygiene practices. Hand hygiene compliance was measured through direct observation in 59% of facilities and alcohol-based handrub consumption was regularly monitored in 53%. Posters featuring hand hygiene indications and technique were displayed in the vast majority of facilities. In 73%, the Chief Executive Officer made a clear commitment to hand hygiene improvement, though a hand hygiene team was established in only 53%.

Figure. Responses to HHSAF questions related to key indicators of the WHO improvement strategy implementation



ABHR= alcohol-based handrubs; HH= hand hygiene; HR= handrubbing; HW= handwashing

Conclusions

The survey shows that the participating facilities, representing countries from all regions of the world, are on average at a good level of progress regarding the implementation of hand hygiene improvement strategies. However, overall 35% are still at an inadequate or basic level and therefore need to make further significant efforts to bring about better conditions for best hand hygiene practices and behavioural change. The many facilities at the *intermediate* level (864/2119) achieved substantial results, but have to now concentrate on actions to sustain these over time. Finally, most facilities at *advanced* level (488/2119) already fulfill some leadership criteria (393/471). These facilities should focus on consolidating their reference position by continuing to contribute to research and innovation in the field of hand hygiene.

It is very encouraging to note that the vast majority of facilities reported having alcohol-based handrubs available, were undertaking staff training, and displaying posters on hand hygiene around their facility. However, differences were detected across the different regions, with the lowest overall score attributed to Africa. Further substantial improvement is needed across all regions, especially in the area of monitoring and feedback on hand hygiene activities and for the establishment of a comprehensive patient safety climate within health-care facilities where hand hygiene activities need to be better embedded. WHO tools corresponding to these two essential components of the improvement strategy are available and should be used to achieve progress.

To facilitate the interpretation of the HHSAF results and the development of local action plans at the facility level, WHO has made available three types of **Template Action Plans** according to levels of progress: *inadequate/basic, intermediate,* and *advanced/leadership* (http://www.who.int/gpsc/5may/EN_PSP_GPSC1_5May_2012/en/index.html). These templates offer ideas for action implementation in each of the five components of the WHO Multimodal Hand Hygiene Improvement Strategy, to enable facilities to make progress. They also indicate the best WHO tools to be used at different levels. To identify the actions that best fit the local situation, managers and infection control

leaders need to identify also the key HHSAF indicators which show clear gaps in their facility and plan the improvement targets to be achieved accordingly. The HHSAF is designed to be used regularly (e.g. annually) to measure progress and facilitate continuous improvement.

Acknowledgements

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