



Alcohol Hand Rub Consumption in Acute Irish Hospitals 2006 to Q4 2008

Summary

- **Alcohol hand rub consumption rates have been collated from acute public hospitals in Ireland since 2006.**
- **In 2008 (Q1-4) the median rate of alcohol hand rub consumption increased to 19.5 litres per 1,000 bed-days used, from 10.5 and 15.0 in 2006 and 2007 respectively. This represents a 30% increase since 2007.**

1. Background

Alcohol-based hand gels have been shown to be an effective and rapid method of hand hygiene in healthcare settings, and are recommended as the primary means of hand hygiene in Irish national guidelines. Implementation of these guidelines is one of the components in the Health Services Executive (HSE) strategy to control healthcare-associated infection (HCAI).

In order to evaluate the impact of hand hygiene practices on HCAI rates it is important to monitor hand hygiene compliance by health care workers to determine if this intervention is effective in reducing infection rates. Measurement of consumption of alcohol hand rub represents one method recommended by both the World Health Organisation and the Centers for Disease Control and Prevention to monitor hand hygiene compliance. While a number of caveats exist that need to be taken into account when interpreting this data, a correlation between consumption of alcohol hand rub in an institution and the frequency of hand hygiene has been demonstrated.

2. Alcohol Hand Rub Surveillance Scheme

The alcohol hand rub surveillance initiative was set up in July 2007 by the HSE in conjunction with the acute public hospitals, as an indicator of hand hygiene compliance in all acute public hospitals in Ireland. The data collected represents the total volume of alcohol-based hand rub used per hospital per year/quarter, excluding that used for pre-operative surgical “scrub”. Hospital activity data, bed days used, obtained from the HSE Performance Monitoring Unit (PMU), is used to calculate the rate of alcohol-based hand rub usage per hospital which is present in the attached.

The rate of usage per hospital is calculated as the total volume of hand rub consumed (in litres) per 1000 bed days used, and is used as the main indicator to differentiate the hospitals.

3. Limitations of the data

For the reasons outlined below, it is not valid to compare alcohol hand rub consumption rates across hospitals as each hospital's rate is linked with its own inherent biases. These rates however can be used as a baseline from which future hand hygiene activity levels can be compared both from within each hospital and on a national scale. Because the data are standardised, they do allow hospitals to monitor trends in their own data over time.

3.1. Alcohol hand rub data

- The way in which hand rub consumption is recorded and reported may vary between hospitals. Most hospitals report that volume of hand rub dispensed via Pharmacy departments. However, some hospitals report data from Supplies departments, which may include data on hand rub that has been purchased by the hospital, but not dispensed. This will tend to give a higher reported volume of hand rub consumption, compared to hospitals reporting Pharmacy dispensing data.
- The data only refers to the use of alcohol-based hand rubs, and does not take account of other hand hygiene agents (e.g. medicated liquid soap) that may also be used in hospitals.
- The data does not take into account the formulation of the alcohol hand rub (i.e. the concentration of alcohol present or the presence of other active antimicrobial ingredients) which would have an impact on the effectiveness of the product to kill microbes.
- The data does not give an indication of the frequency with which hand decontamination is carried out at a given hospital.
- The data are based on the volume of hand rub dispensed and does not take into account wastage of hand rub. For example a ward may choose to replace hand rub dispenser when they are not entirely empty, thus artificially increasing their apparent consumption of hand rub.
- The data does not distinguish between visitor, patient and healthcare worker usage of hand rub.
- The data does not take account of differences in patient populations, clinical services provided, inter-hospital patient transfers and other differences in activity between hospitals.

3.2. Denominator Data

Rates have been calculated using data on acute bed-days used, in line with international best practice. These data are provided to the HSE Performance Monitoring Unit (PMU) by all acute publicly-funded hospitals on a monthly basis and validated by the reporting hospital before being released. **The number of bed-days used is based on the average number of available acute in-patient beds during the previous month, and not on the total bed capacity of a hospital.** It does not include long-stay or day case (including dialysis) bed use, but does include acute psychiatric bed use (where the latter are included in the bed complement of an acute hospital).

While the PMU make every effort to ensure the data are validated, there are likely to be small discrepancies in the estimated number of acute bed-days used, compared to locally estimated data, due to fluctuations in the number of available acute beds. In addition, the denominator data are validated at the annual level only (rather than monthly or quarterly). If hospitals have not provided a complete dataset, their annual denominator data have been adjusted to get a best estimate to suit the number of months of data they reported.

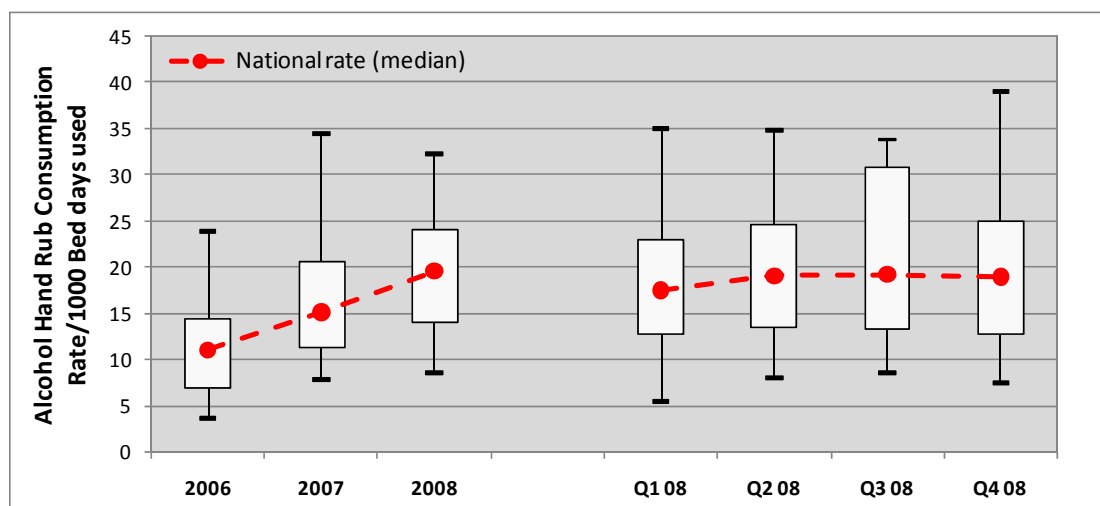
The use of these denominator data may lead to an overestimate of rates for some hospitals, particularly if a hospital has a large number of non-acute beds, day-case beds and dialysis beds, which may contribute to overall hospital activity. Thus comparisons between individual hospitals may not be valid. However, because the data are standardised, they do allow hospitals to monitor trends in their own data over time.

4. Results

Table 1 lists the rate of alcohol hand rub consumption per hospital for each time period. This data is represented as a box plot in Figure 1 illustrating the gradual increase in the national median rate of consumption with a 43% increase from 2006 to 2007 and a 30% increase from 2007 to 2008.

Table 1. Data on alcohol hand rub consumption by acute public hospital in Ireland, 2006 - 2008. The rate of hand rub consumption per hospital was calculated as the total volume of hand rub consumed (in litres) per 1,000 bed-days used

Acute Public Hospitals	Alcohol hand rub consumption rate (Litres per 1,000 bed-days used)						
	2006	2007	2008	2008			
				Q1	Q2	Q3	Q4
Adelaide & Meath & National Children's Hospital, Tallaght	15.4	15.2	19.7	17.4	19.8	21.1	20.5
Bantry General Hospital	8.2	8.4	8.8	10.0	10.9	8.3	6.0
Beaumont Hospital	23.6	27.3	30.0	14.2	47.2	26.2	32.4
Cappagh National Orthopaedic Hospital, Dublin	15.2	14.9	28.3	30.5	17.8	48.7	16.6
Cavan General Hospital	8.9	19.4	19.8	36.8	19.2	11.6	11.0
Children's University Hospital, Temple Street	12.0	30.3	27.9	27.7	27.9	35.5	21.4
Connolly Hospital, Blanchardstown	12.9	18.0	23.7	22.0	20.4	28.5	24.2
Coombe Women's Hospital	4.8	10.4	11.1	9.9	9.2	12.6	12.9
Cork University Hospital	10.0	13.9	23.3	24.1	23.7	18.9	26.4
Kerry General Hospital, Tralee	4.6	17.9	11.1	12.4	10.7	10.7	10.6
Letterkenny General Hospital	5.4	11.3	13.9	12.7	13.4	10.6	19.1
Lourdes Orthopaedic Hospital, Kilcreene, Kilkenny	4.4	9.1	12.0	2.7	24.0	9.0	12.7
Louth County Hospital, Dundalk	11.1	13.7	31.5	29.2	26.6	31.8	39.5
Mallow General Hospital	7.2	6.4	9.5	8.7	16.3	5.6	7.2
Mater Misericordiae University Hospital	16.7	24.2	29.4	20.7	25.5	29.4	44.7
Mayo General Hospital, Castlebar	9.4	10.8	17.3	18.0	15.3	16.6	19.3
Mercy University Hospital, Cork	6.3	14.7	14.3	15.5	12.1	12.9	16.4
Merlin Park Regional Hospital, Galway	11.1	16.5	20.2	28.4	13.9	15.3	22.9
Midland Regional Hospital Mullingar	16.9	22.0	21.5	20.4	20.5	26.5	18.6
Midland Regional Hospital Portlaoise	19.8	19.5	24.0	22.5	24.6	21.3	27.6
Midland Regional Hospital Tullamore	23.1	47.1	38.2	34.9	35.1	30.9	50.2
Mid-Western Regional Hospital Ennis	14.0	27.2	21.1	22.8	27.3	27.5	32.5
Mid-Western Regional Hospital Nenagh	14.6	10.6	14.9	14.4	14.9	15.2	15.2
Mid-Western Regional Hospital, Dooradoyle, Limerick	24.2	24.4	23.4	20.8	24.6	26.1	22.3
Mid-Western Regional Maternity Hospital, Limerick	14.4	15.0	14.9	10.7	18.9	14.4	15.4
Mid-Western Regional Orthopaedic Hospital, Croom	21.7	14.7	52.5	36.4	123.4	24.0	21.3
Monaghan General Hospital	11.1	14.0	9.5	5.1	9.2	12.7	11.3
Naas General Hospital	7.6	15.1	19.3	17.5	24.2	21.9	13.9
National Maternity Hospital, Holles Street	4.1	8.6	12.4	14.2	9.0	15.4	11.0
Our Lady of Lourdes Hospital, Drogheda	11.9	22.6	30.1	35.2	26.3	29.3	29.6
Our Lady's Hospital for Sick Children, Crumlin	29.0	33.7	30.0	28.7	31.4	30.7	29.3
Our Lady's Hospital, Navan	6.9	10.1	20.3	13.6	30.2	19.8	17.7
Portiuncula Hospital, Ballinasloe	6.7	7.0	16.8	21.5	15.9	18.1	11.9
Roscommon County Hospital	6.1	13.9	7.9	5.8	6.3	9.7	9.8
Rotunda Hospital	11.3	14.3	17.4	13.2	13.9	17.4	25.4
Royal Victoria Eye & Ear Hospital, Dublin	7.3	35.3	16.5	17.4	10.3	20.6	17.2
Sligo General Hospital	11.0	13.4	20.3	24.6	17.4	19.4	20.0
South Infirmary - Victoria University Hospital, Cork	9.8	15.2	33.1	21.3	34.5	38.6	38.5
South Tipperary General Hospital, Clonmel	12.3	17.7	12.5	12.8	5.9	15.2	16.7
St Columcille's Hospital, Loughlinstown	9.2	22.6	18.1	11.3	19.6	22.2	19.2
St James's Hospital	22.7	21.0	22.4	23.1	21.6	22.6	22.5
St John's Hospital, Limerick	6.7	12.8	14.9	14.8	18.6	17.9	8.7
St Luke's General Hospital, Kilkenny	6.2	8.5	14.8	15.8	14.3	16.4	12.7
St Luke's Hospital, Dublin	2.6	5.2	5.9	9.4	7.6	2.3	4.7
St Mary's Orthopaedic Hospital, Gurranebraher, Cork	0.5	8.7	8.4	4.6	8.4	8.7	12.1
St Michael's Hospital, Dun Laoghaire	8.3	11.3	11.3	9.4	10.3	13.0	12.8
St Vincent's University Hospital	12.2	20.0	24.6	21.5	24.5	26.1	26.4
University College Hospital Galway	11.8	12.9	18.0	12.9	13.8	22.5	23.2
Waterford Regional Hospital	9.2	18.5	22.1	21.1	23.7	18.5	25.3
Wexford General Hospital	8.2	16.5	24.4	24.4	25.4	21.7	26.1
National Median	10.5	15.0	19.5	17.5	19.0	19.2	19.2

Figure 1. Alcohol hand rub consumption rate in acute Irish hospitals (2006 – 2008)

NOTE: The vertical line connects the minimum (5th percentile) and maximum (95th percentile) values for each time period and the box highlights the middle fifty percent of the national data.

5. Contact details and further information

If you have any further queries regarding your own data, or suggestions as to how data feedback could be improved, HPSC would be delighted to hear from you. Please contact Fiona Roche, Surveillance Scientist or Fidelma Fitzpatrick, Consultant Microbiologist on the following emails: fionamary.roche@hse.ie or fidelma.fitzpatrick@hse.ie

Further information on infection control and healthcare associated infection is available at:

<http://www.hpsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/InfectionControlandHealthcare-AssociatedInfection/>

Guidelines for hand hygiene in Irish healthcare settings are available at:

<http://www.ndsc.ie/hpsc/A-Z/Gastroenteric/Handwashing/Guidelines/>

A suite of tools and resources on hand hygiene are available from the WHO at:

<http://www.who.int/gpsc/5may/tools/en/index.html>