

# **The Max4Health Hand Hygiene Campaign**

**HCAI Technology Innovation Programme**  
Using technology to help fight infection

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# The Max4Health Hand Hygiene Campaign

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## Executive summary

This report sets out the results of an evaluation of a Max4Health Hand Hygiene Campaign that was undertaken at Southampton University Hospitals NHS Trust over a 9 week period between February and April 2009.

From this study it was not possible in the 9 weeks to show:

- any significant effect on hand hygiene compliance that might be attributed to the Campaign, using the Trust's auditing tool
- that expenditure on soap and hand gel could be used as a marker for usage or a surrogate for hand hygiene compliance.

Notwithstanding the fact that staff at Southampton were almost all aware of the importance of hand hygiene before the Campaign, and compliance with hand hygiene was high, the following observations may be made.

- Almost three quarters of staff who responded to a survey thought that the Campaign had made them more aware of the importance of hand hygiene.
- The majority of staff who responded to a survey thought that it had made them more compliant with hand hygiene.
- There was high awareness of the Campaign. As the campaign progressed, staff understood that it had a particular focus on making them aware of the importance of clean hands.
- Around 60% of staff who were interviewed once the campaign had been in place for a few weeks thought that its effects would last at least a few months.
- 72% of the staff who participated in the staff survey thought that the Max4Health Hand Hygiene Campaign was a good or very good tool to enhance staff hand hygiene.
- Over 80% of them would recommend the Campaign to other hospitals.

It was noted that careful advance planning of a clearly specified and costed Campaign, with particular attention paid to potential estates and facilities issues and to communications, and the appointment of a single person as the trust lead and single point of contact with the Max4Health team is commended to trusts considering making use of the Max4Health Campaign.

The overall cost of the Campaign at Southampton was £115,956. Since each avoidable healthcare associated infection is estimated to cost the NHS £4,300<sup>[1]</sup>, 27 infections would need to have been prevented to cover the cost of this Campaign.

## Introduction

The importance of hand hygiene in infection prevention and control is well established<sup>[2]</sup> but studies across the world have shown that compliance could be improved significantly<sup>[3,4,5]</sup>. Multiple interventions over a period of time are generally most effective at improving compliance<sup>[6]</sup>.

The National Patient Safety Agency (NPSA) has lead responsibility for advice and best practice guidance concerning hand hygiene and this is delivered through their national 'cleanyourhands' campaign<sup>1</sup>. This uses a multimodal approach to educate, prompt and enable healthcare staff to perform hand hygiene at the right moments, every time during patient care. It includes:

- promoting hand hygiene at the point of care through the appropriate use of alcohol handrub and soap and water
- posters and other materials to raise awareness and prompt hand hygiene by staff
- involving patients in improving the hand hygiene of staff with some materials featuring the message: It's OK to ask
- guidance and resources to support local implementation, training, promotion and engagement.

The campaign materials, guidance and resources are provided free of charge to NHS trusts.

The NPSA's 'cleanyourhands' campaign in acute trusts is being independently evaluated via the National Observational Study of its effectiveness (NOSEC)<sup>2</sup>. Latest published results cover 6, 12 and 18 months post roll-out (up to December 2006).

It is acknowledged that there is no one best way in which to communicate the essential hand hygiene message to patients, staff and visitors and there are many variations on the theme used up and down the country. Similarly there is no one best way to measure which of these and which combination of materials works best in getting the message across. Information about this can be useful in helping trusts get their campaigns as well constructed as possible.

In 2008 the Max4Health team approached the Department of Health (DH) and demonstrated a new and novel approach which they claimed would raise hand hygiene awareness. In 2005 the team had approached the Rapid Review Panel (which assesses new and novel products which may help infection prevention and control) with an animated video, but had provided insufficient data to enable an evaluation of the product.

Following the 2008 approach, it was agreed that, before any further consideration was given to the Max4Health approach (for example, by the

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<sup>1</sup> For further information see <http://www.npsa.nhs.uk/cleanyourhands/>

<sup>2</sup> See <http://www.idrn.org/nosec.php>

NPSA, or as part of any other DH hand hygiene campaign) the DH Healthcare Associated Infections (HCAI) Technology Innovation Programme (the Technology Programme) would work with the Max4Health Campaign to establish the extent to which the Campaign might be useful in raising awareness of hand hygiene issues. However the limitations of being able to gain highly accurate data in the short term and the complexity of being able to design any form of comparative study were acknowledged.

It was agreed that the Technology Programme would develop a specification with the Max4Health Campaign which would allow for baseline variables such as the type and quantity of Campaign materials required, the time and resources involved and learning points from an operational viewpoint to be assessed. Additionally it was agreed that information concerning awareness levels, hand hygiene compliance and usage of hand gel and soap during a short study period would be examined to determine if any conclusions could be drawn.

Southampton University Hospitals NHS Trust (the Trust) kindly agreed to host the study. The Trust had a record of active participation in the NPSA's cleanyourhands campaign, designing local materials with a corporate hand hygiene message to reinforce the campaign and hosting regular awareness-raising events. An active programme of hand hygiene audit was in place. In order to build on this work, the Trust had been looking for new ideas to further reinforce the hand hygiene message to staff.

A Max4Health Hand Hygiene Campaign was implemented at the Trust over a 9 week period between February and April 2009. This report sets out the conclusions from the evaluation of that Campaign.

The Department would like to take this opportunity to express its thanks to the staff and management at the Trust and especially to Tracey Cooper and Mary O'Leary from the Trust's Infection Prevention Team.

## **The Max4Health Hand Hygiene Campaign**

The Max4Health Hand Hygiene Campaign is designed to target healthcare workers, patients and the public to deliver important messages about hand hygiene and its impact on helping prevent healthcare associated infections. It is based around a cartoon character called 'Max' (Figure 1).



**Figure 1: Max materials**

Throughout the 9 weeks of the Campaign a range of materials was used including posters (which were changed several times during the Campaign), wall 'wobblers', graphics on transport vehicles, a very large banner on the outside of the main hospital building, signage fixed to railings, lamp-posts and other similar items in the car parks and along the walkways leading to the main entrances, information leaflets for staff and visitors, 'Menu Cards' in the Trust dining room, storybooks for children, mouse mats, personal items for distribution to staff (including mugs, tee-shirts, pens, name badge lanyards, pen torches, badges, stick-it notes, and washable fob-watches), a screensaver to run on Trust computers, and attachments to payslips.

In week 5, a hand hygiene awareness week was held. Specific activities included a suited-up Max character, display stands, distribution of Campaign media, a hand hygiene quiz with 450 fob watches as prizes, hand hygiene champion awards with prizes given at a post-Campaign award ceremony, a plasma screen with Max cartoon character animation, and visits to wards.

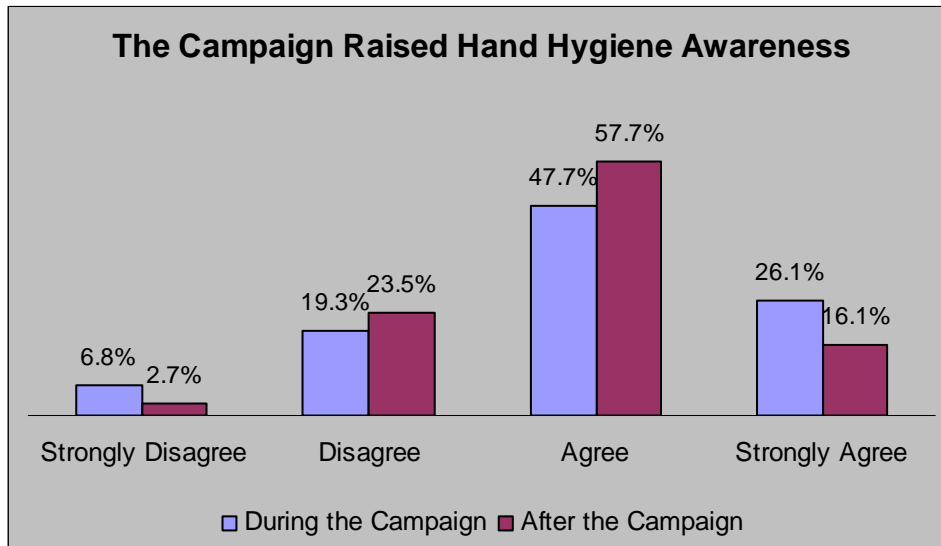
## **The evaluation**

### **How the evaluation was done**

Information was gathered about hand hygiene compliance, using the Trust's auditing tool, and on expenditure on soap and hand gel. Before the Campaign, during weeks 1, 4 and 7, and after the Campaign, staff at the hospital were interviewed at random about the Campaign. Additionally, a hospital staff survey was conducted using questionnaires, both during and one month after the Campaign, though the number of completed questionnaires was low (92 during the Campaign and 156 after it in a trust with over 8,500 staff).

## Did the Campaign raise awareness of the importance of hand hygiene?

Almost all staff who were interviewed before the Campaign were aware of the importance of hand hygiene. Opportunities for the Campaign to demonstrate that it raised awareness of the importance of hand hygiene were therefore limited. However, as figure 2 shows, almost three quarters of respondents to the staff survey thought that the Campaign had made them more aware of the importance of hand hygiene.

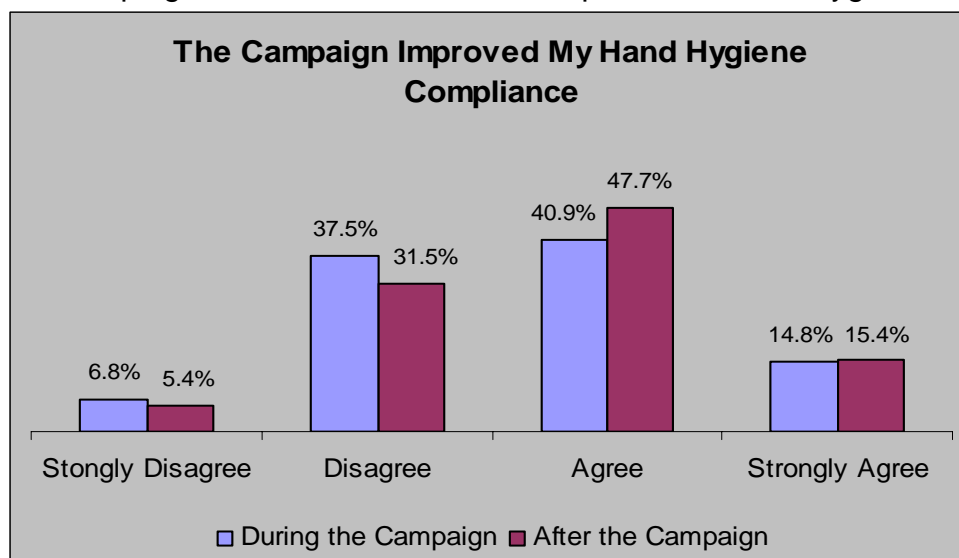


**Figure 2: Staff opinions on whether the Max4Health Campaign raised their awareness of the importance of hand hygiene (During the Campaign n=88, After the Campaign n=149)**

## Did the Campaign improve hand hygiene compliance?

There was no evidence, either from the Trust's auditing tool, or from information on expenditure on soap and hand gel, of any significant effect on hand hygiene compliance that might be attributed to the Campaign. Levels of hand hygiene compliance, as measured by the Trust's auditing tool, were very high prior to the introduction of the Campaign, and expenditure on soap and hand gel, which in the short term appears to follow a cyclical procurement pattern, rather than corresponding closely with usage, had increased significantly in the second half of 2008. Whether the Campaign would have an effect in circumstances where hand hygiene compliance is less good might merit further evaluation.

Figure 3 shows that the majority of respondents to the staff survey thought that the Campaign had made them more compliant with hand hygiene.



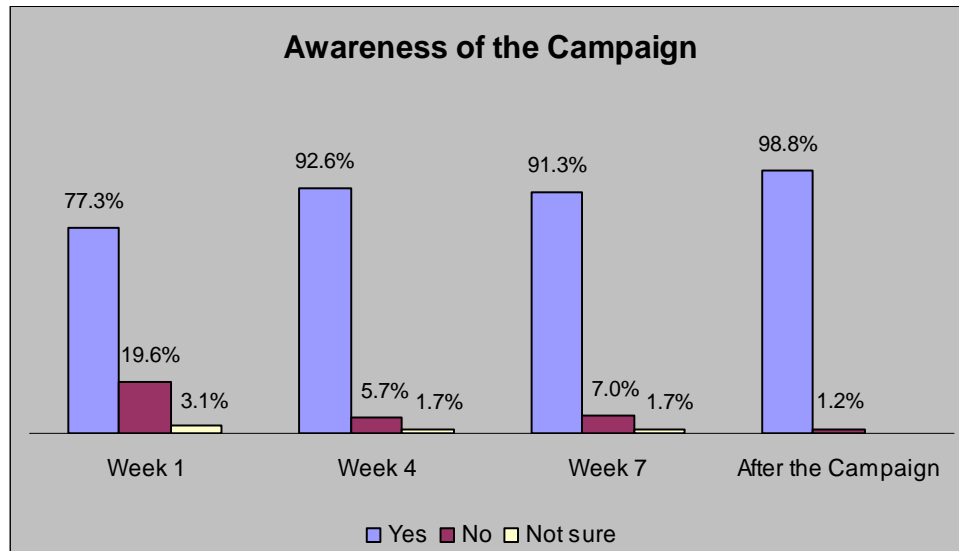
**Figure 3: Staff opinions on whether the Max4Health Campaign made them more compliant with hand hygiene (During the Campaign n=88, After the Campaign n=149)**

In the interviews, staff were asked whether they thought that a campaign like Max4Health would make people generally more likely to clean their hands in the hospital setting. During the first week of the Campaign nearly three quarters of staff who were interviewed thought that this was likely or very likely. This fell to just under two thirds in week 4, rose to more than 8 out of 10 in week 7, and fell again to just over two thirds after the Campaign<sup>3</sup>.

<sup>3</sup> Week 1 n=414, week 4 n=303, week 7 n=296, week after the campaign n=169

## Were staff aware of the Campaign?

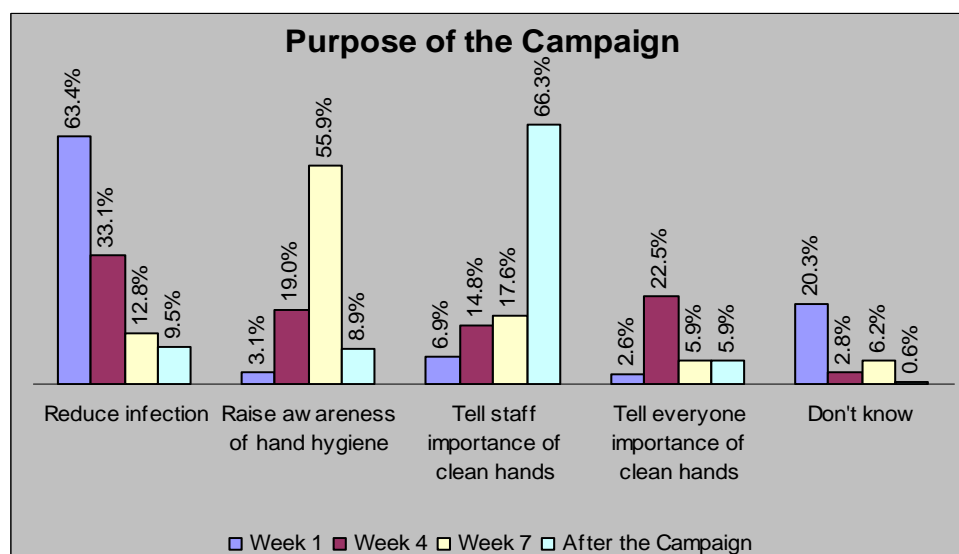
Staff who were interviewed were asked if they had seen or heard anything about the Campaign. As can be seen from figure 4, the level of awareness of the Campaign rose to over 90% during the Campaign and had reached almost 99% by the time of the post-Campaign survey.



**Figure 4: Staff respondents' awareness of the Campaign (week 1 n=418, week 4 n=298, week 7 n=287, After the Campaign n=165)**

## Did staff understand the purpose of the Campaign?

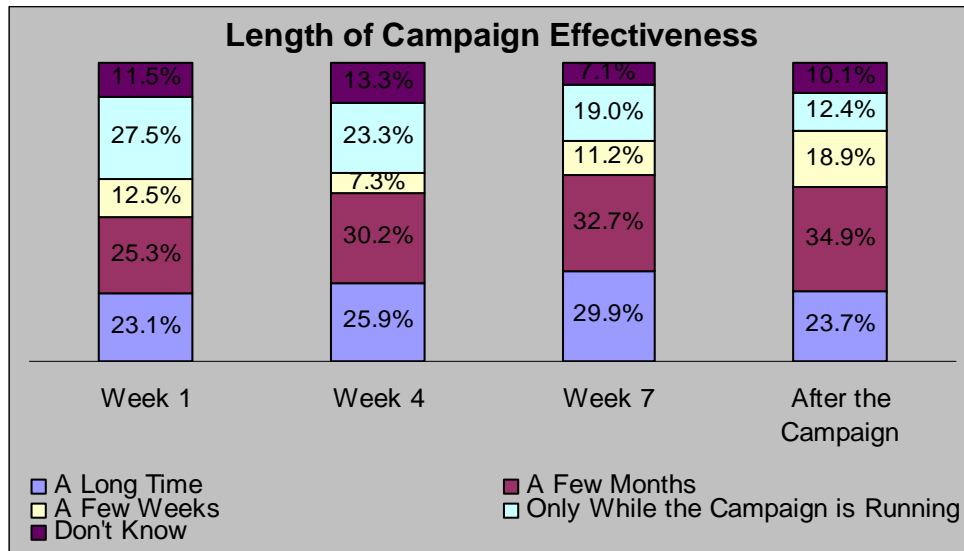
As figure 5 shows, initially the majority of respondents saw the purpose of the Campaign as being to reduce infection. Over time this perception shifted to a focus on hand hygiene and, by the time the Campaign had ended, to a specific focus on hospital staff having clean hands.



**Figure 5: Staff respondents' main understanding of the purpose of the Campaign – responses accounting for more than 20% of all responses in any week (week 1 n=418, week 4 n=284, week 7 n=290, after the Campaign n=169)**

### How long did staff think that the effects of the Campaign would last?

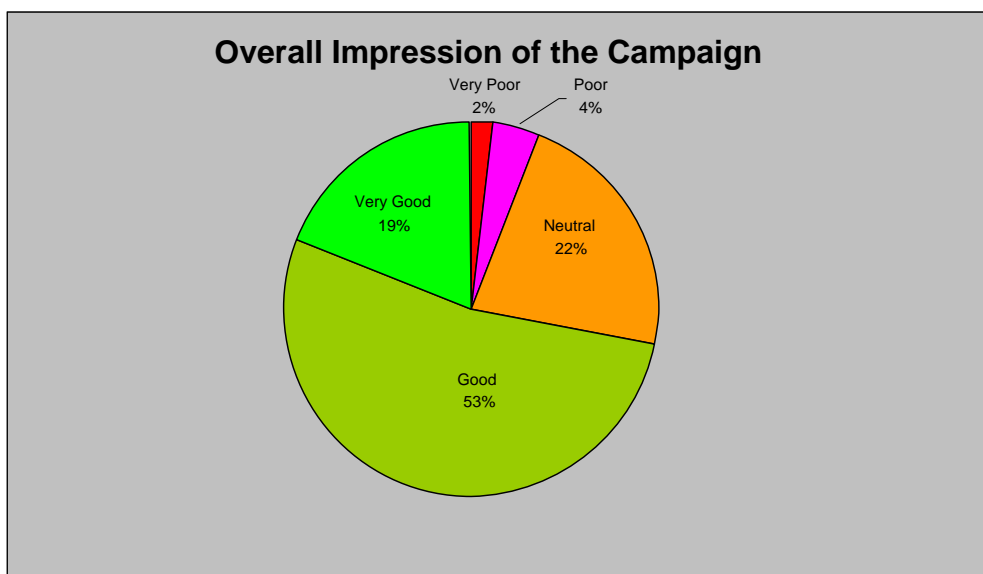
Figure 6 shows that, once the Campaign had been in place for a few weeks, around 60% of staff who were interviewed thought that the effects of the Campaign would last for at least a few months.



**Figure 6: Staff respondents' predictions of how long the Max4Health Campaign would be effective**  
(week 1 n=407, week 4 n=301, week 7 n=295, week after the Campaign n=169)

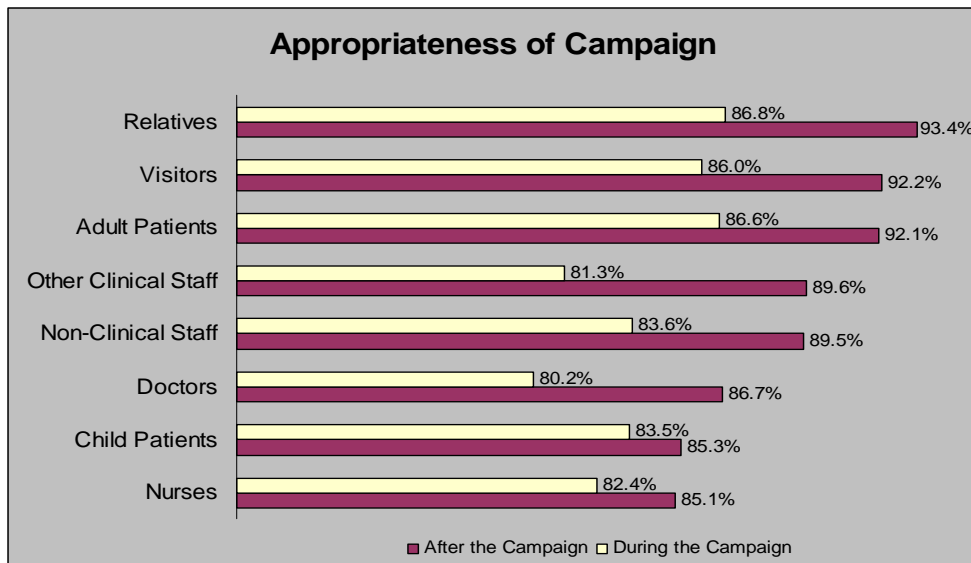
### Was the Campaign well received?

As can be seen from figure 7, 72% of staff who participated in the hospital staff survey thought that the Campaign was a good or very good tool to enhance staff hand hygiene.



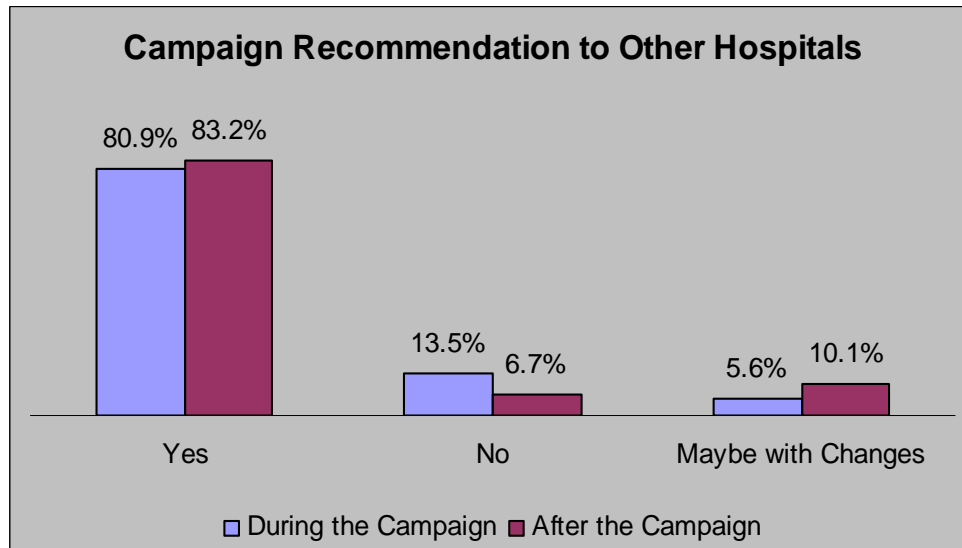
**Figure 7: Staff respondents' overall impression of the Max4Health Campaign**  
(During the Campaign n=91, After the Campaign n=150)

Respondents thought that the Max4Health messages were appropriate for all groups, and were even more inclined to think this after the Campaign had ended than they were whilst it was going on (figure 8).



**Figure 8: Staff respondents' opinions about the role appropriateness of the Max4Health Campaign (During the Campaign n=92, After the Campaign n=151 – representative for the 8 different variables)**

Over 80% of staff respondents would recommend the Campaign to colleagues in other hospitals (figure 9).



**Figure 9: Staff respondents' views on whether they would recommend the Campaign to other hospitals (During the Campaign n=89, After the Campaign n=149)**

## What issues arose in relation to implementation and adoption?

The development of a **communications** plan proved to be challenging, so communications issues had to be dealt with on an ad hoc basis. There was also some confusion during the Campaign, when the media company used by the Max4Health team issued media releases. As the Campaign progressed, the Trust took a stronger line on media-related issues and telephone conversations between the project lead and the Max4Health media team were held, which led to rapid agreement.

There were also some misunderstandings between the Max4Health Team and **estates and facilities**. For example, on occasion posters were placed in locations which had not been agreed. Regular meetings between the Trust and the Max4Health team enabled rapid corrective action to be taken.

Some of the **posters** were considered unsuitable for viewing by vulnerable patients.

# Advice for trusts considering introducing the Max4Health Hand Hygiene Campaign

## Important Points to Consider

Careful advance planning is essential.

Consideration needs to be given to the purpose of bringing the Campaign to the trust. This might be:

- To improve awareness of the importance of hand hygiene
- To improve compliance with hand hygiene
- To reinforce and refresh existing hand hygiene messages

The purpose of the Campaign will primarily determine its style, duration and possible content although affordability may also be a factor along with the resources required to develop and deploy the methodology used to evaluate its success.

A clear specification should be agreed with the Max4Health team including

- the timing and length of the Campaign
- the numbers and status of people who will form part of the Max4Health team, their roles, and the amount of time they will be on site during the Campaign
- the types and quantity of material which will be used during the Campaign
- a firm price, along with methods to price any variations, for example in the quantities of materials used
- an audit trail which enables the trust to be assured that the resources included in the specification have been delivered

Given the trust or hospital wide nature of the Campaign, it is crucial that key stakeholders, especially the executive directors are signed up to the Campaign before any firm commitments are given. This commitment can be an essential element in gaining support for the Campaign elsewhere in the trust or hospital which will be essential in making the right things happen at the right time to effect a well executed plan.

There will need to be a clear understanding between the Max4Health team and the trust's estates and facilities team about where and when materials will be placed and the responsibilities on both sides in relation to this work.

Internal and external communications are essential to the overall success of both the planning and execution stages in different ways. Target audiences and the key messages to be communicated need to be established early in the planning phase and subsequently set out in agreements with the Max4Health team. An effective relationship between local communications staff and the Max4Health team is required so that assumptions about what

might be communicated and in which ways do not conflict. This is especially the case in terms of dealings with the local media. We recommend that this should be clearly the responsibility of the trust.

Issues that require special attention before the Campaign and which need to be written into the specification include

- ensuring that the Max4Health team have sufficient insurance
- CRB and occupational health checks
- briefing on local health and safety issues
- parking
- security badges
- letters of introduction to wards and departments
- dress code
- hand hygiene
- standards of conduct
- storage of materials.

The following were found to be essential.

- One person from the trust should be appointed as the trust lead for the Campaign and should be the single point of contact for the Max4Health team.
- A careful review of all Max4Health key messages to ensure that these do not conflict with the trust's own key messages.
- Regular documented meetings between the trust lead and the Max4Health team to review progress and address any issues which arise.
- Opportunities for staff to meet the Max4Health team and share their enthusiasm and experience.

### **Costs and Benefits**

The cost of the Campaign at Southampton can be broken down into 3 distinct parts:

1. Cost of the Max4Health team to develop and deliver the Campaign.
2. Product costs.
3. NHS staff costs to work with the Max4Health Team to develop and implement the Campaign.

These are itemised in Table 1 below.

<b>Item</b>	<b>Cost (exc. VAT)</b>	<b>Comment</b>
Max4Health Team	£40,044	This was the price charged, excluding the cost of products
Products	£64,702	This was the price charged for the products used.
NHS Resource	£11,210	This is an estimate of costs to SUHT
<b>TOTAL</b>	<b>£115, 956</b>	

**Table 1: Costs of the Max4Health Campaign at Southampton University Hospitals NHS Trust**

A schedule of products and materials used in this Campaign is set out in the Annex.

It is generally accepted that hand hygiene is a cost-effective intervention and essential for patient safety. Each avoidable healthcare associated infection is estimated to cost the NHS £4,300<sup>[1]</sup>. The cost-effectiveness of any campaign will depend on its impact on staff behaviour over time. 27 infections would need to have been prevented to cover the cost of this Campaign.

## Annex – Schedule of products and materials used in this Campaign

Information Leaflets - A5	25000
Badges	10000
Credit information cards	10000
Wage Slip - A7 (8000 staff)	8800
Pens	8000
Post-it notes	8000
Wage slips - insert to wage slips	8000
Belt Clips	4000
Mugs	4000
Posters (includes encapsulation)	3700
Lanyards	2000
Mouse Mats	2000
Torch pens	1000
Max Books	500
Balloons	300
menu cards	250
T-Shirts	50
Wobblers	30
External sign 420x600mm back to back	20
Travel Wise Van Graphics	10
Door Entry and Exit Signs	8
External sign 420x600mm Multi Storey Sign	6
Stickers - reels (500 per reel)	5
External sign 1400x300mm window vinyl	4
External sign 3000x600mm D/Sided banner	4
External sign 1500x600mm D/Sided banner	3
External sign 300 dia window graphic	3
External sign 3000x600mm S/Sided banner	3
Pop up promotional banners	3
Building Drop Banner	1
Ceiling Banners	1
Screen Saver - Hospital wide application	1

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