

Social Challenges Associated with Implementing Hand Hygiene Technology

Leilani L. Yoshida, DBA, Indiana Wesleyan University



Abstract

Although research suggests that approximately one in 31 patients are exposed to hospital-acquired infections (HAI) daily due to the lack of proper handwashing protocols (CDC, 2018) healthcare workers wash their hands less than half the times they should (CDC, 2020a). This lack of hand hygiene compliance presents a significant problem because HAIs can lead to severe illness and death (CDC, 2020b), costing healthcare systems between \$28 to \$45 billion annually (Wang et al., 2021). The healthcare technology industry is attempting to address this issue by producing hand hygiene compliance monitoring systems (HHCMS) designed to alert healthcare workers of the need to wash their hands and monitor their handwashing practices. However, this technology is being met with resistance. The aim of the applied doctoral project (ADP) was to assist an HHCMS manufacturer in better understanding the social and behavioral challenges affecting the effective implementation of their product into their clients' hospital facilities. The study utilized a mixed-method research approach to identify factors contributing to the implementation challenges, including healthcare worker perceptions. The key results indicated the importance of leadership engagement in supporting the process and listening to and addressing employee concerns. A recommendation was provided to implement a check-in/out process led by leadership for additional support.



Introduction

Hand hygiene (HH) practices in healthcare environments remain a significant problem even though the connection between healthcare workers' hands and contracting an HAI was made over two centuries ago (Haque et al., 2018). However, while technology is available to help reinforce compliance efforts, adoption has been challenging. To address this issue, a partnership was formed with an HHCMS manufacturer to research and identify a solution to implement their equipment into hospital environments effectively.

Research Questions

- ❖ Despite the healthcare staff's resistance to using hand hygiene compliance monitoring systems, how can the partner organization ensure successful implementation considering concerns, knowledge deficiencies, and lack of buy-in while promoting worker and patient safety?
- ❖ What can the partner organization do to encourage hospital staff's adoption in facilities where their product is being implemented?

Foundation

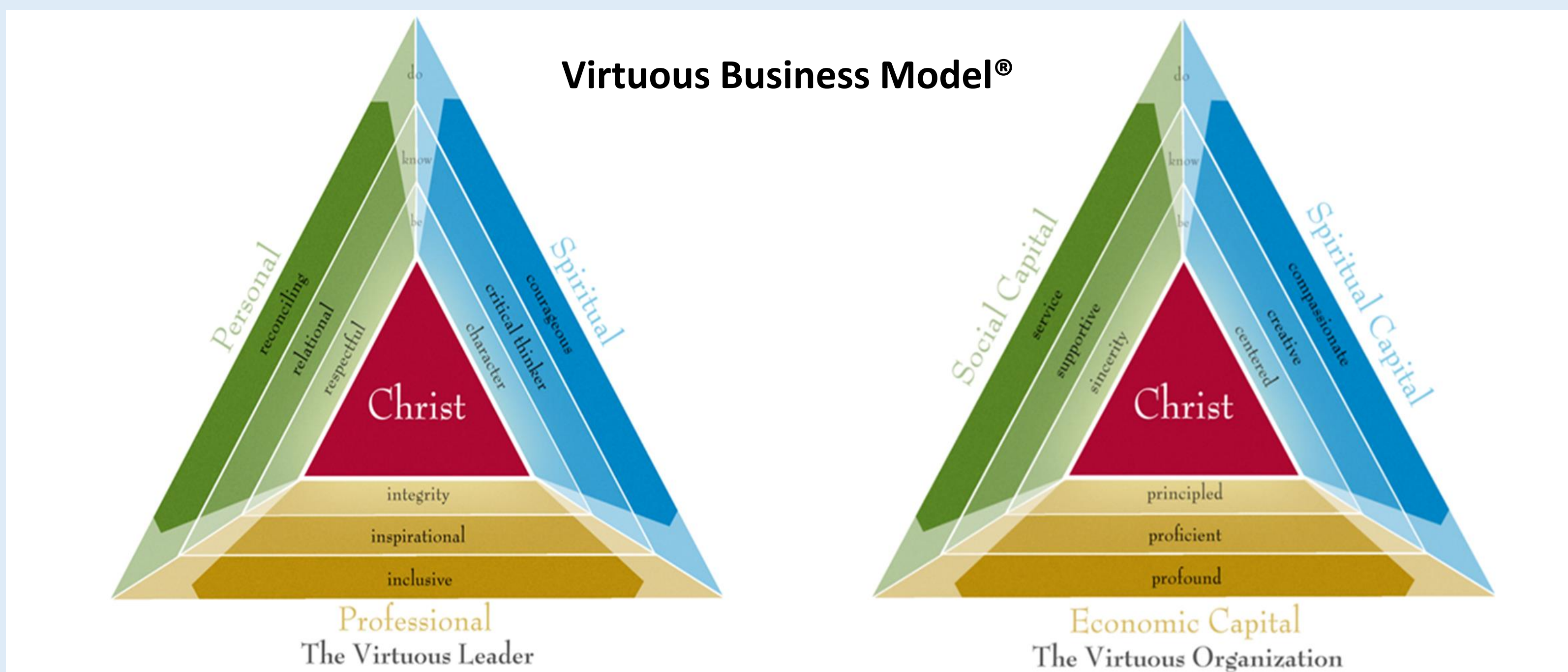


Illustration of the virtuous business model® (Indiana Wesleyan University, 2016).

The Virtuous Leader

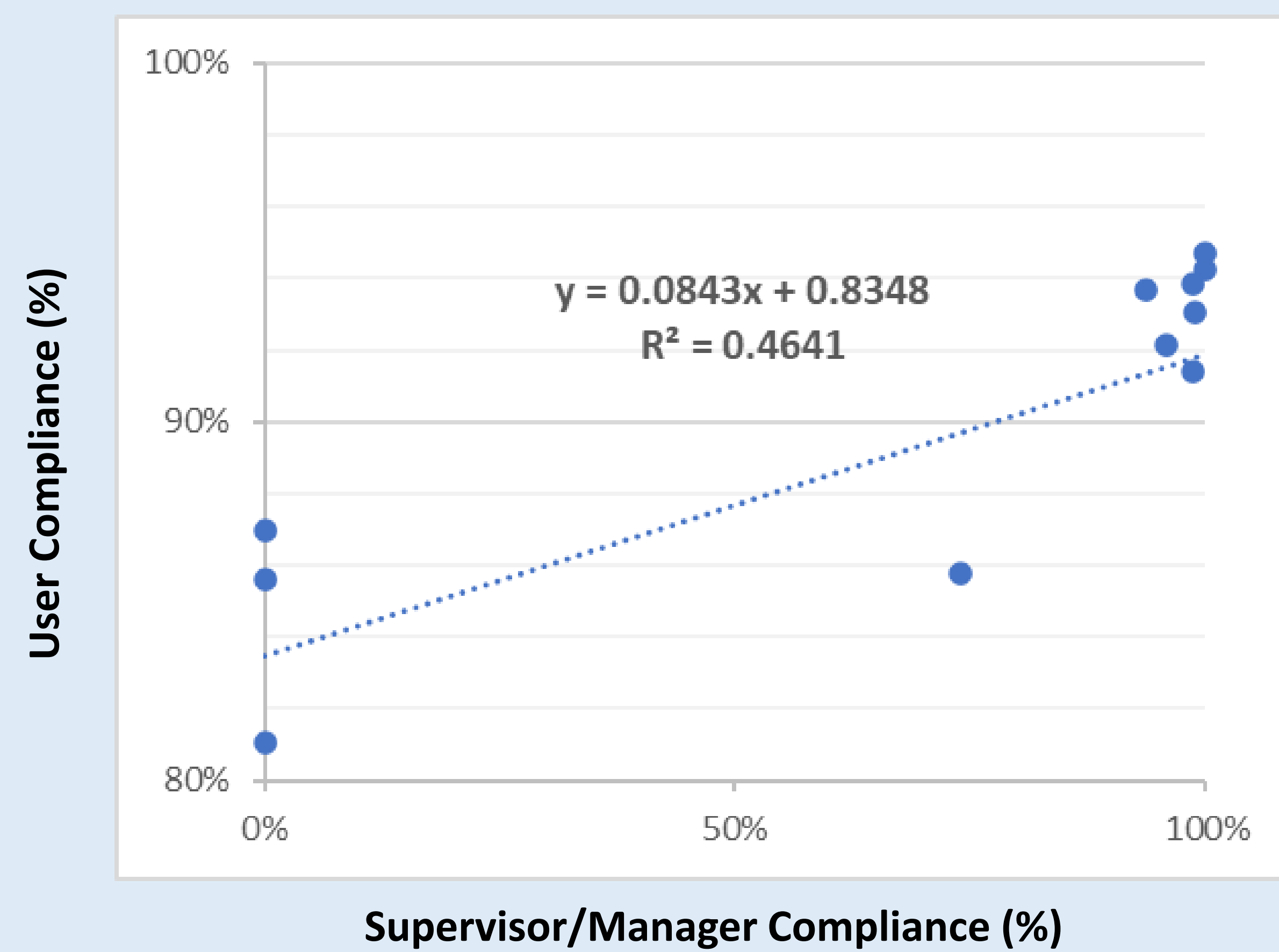
Be	Personal	Spiritual	Professional
Know	Respectful	Character	Integrity
Do	Rational	Critical Thinker	Inspirational
	Reconciling	Courageous	Inclusive

The Virtuous Organization

Be	Social	Spiritual	Economic
Know	Sincerity	Centered	Principled
Do	Support	Creative	Proficient
	Service	Compassionate	Profound

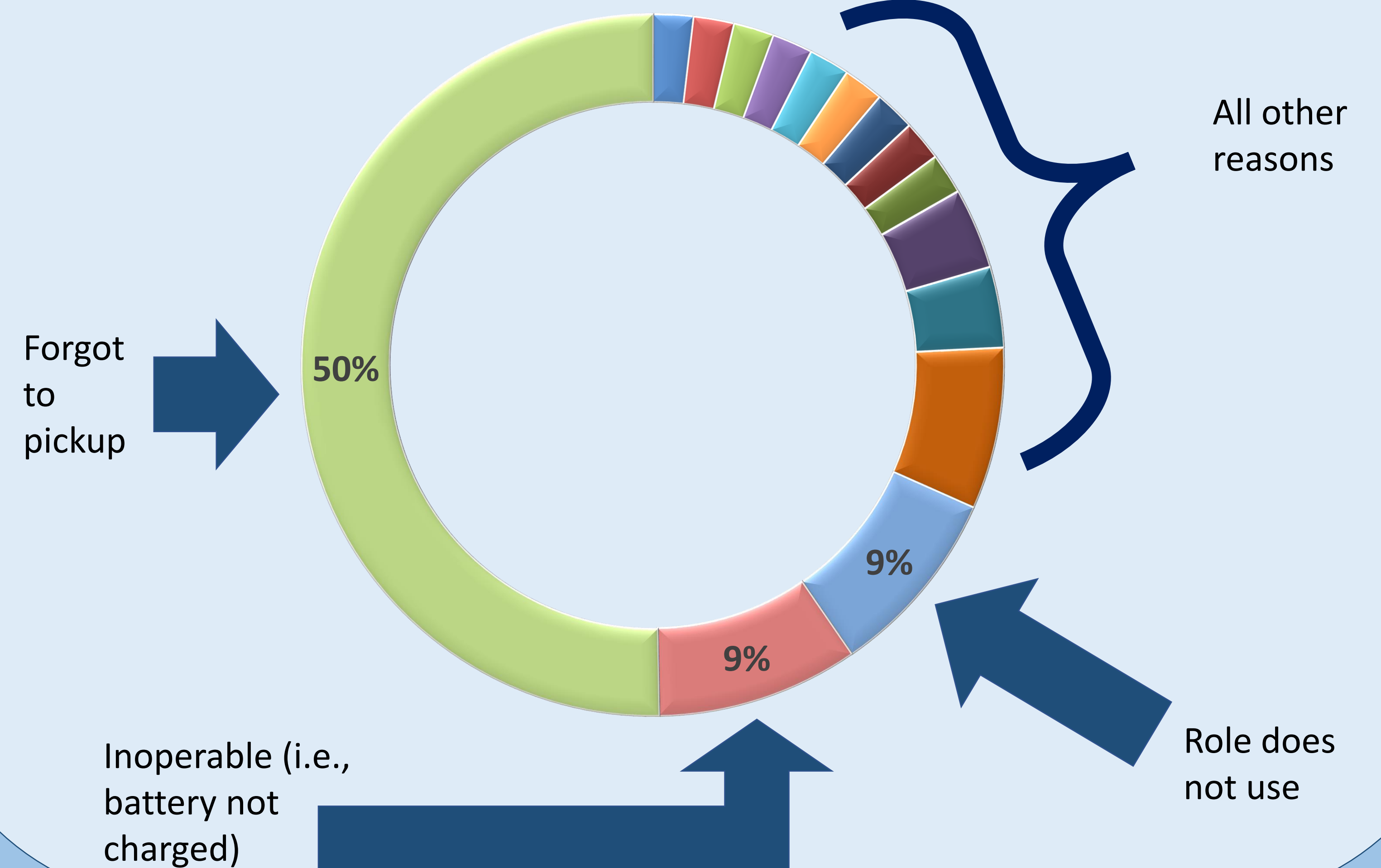
Results

User vs. Supervisor & Manager Compliant HHOs



There was a moderately positive correlation between a higher user performance when their supervisor or manager also complied with using the HHCMS.

Reasons for HCWs Not Wearing HHCMS Daily



Methods

Mixed-Method Analysis

Hospital Unit	Nursing Category	Job Category	Total Compliant (HHO)	Total (HHO)	User Total Compliance %
A	1	NA	149	160	93.13%
A	1	Supervisor	29	31	93.55%
A	1	NA	147	154	95.45%
A	1	RN	373	374	99.73%
A	1	RN	2	2	100.00%

Quantitative User Compliance Data

Objective: To obtain feedback on the user perspectives and experience with the XXXX Solution. Method: Use Survey Monkey to administer a questionnaire among staff who use the XXXX system at XXXX Medical Center. The survey data will be used to evaluate users' perceptions of the XXXX experience and inform future product as a result of the information collected. Intro Text: "You've been selected to provide feedback on the XXXX Hand Hygiene Solution at XXXX Medical Center. Please take 2-3 minutes to complete this short survey prior to DATE. All thanks for your time."

9) XXXX staff are responsive and answer my questions about the system. (Scale 1 is STRONGLY DISAGREE; 5 is STRONGLY AGREE)

10) What could be improved about XXXX? (Open-ended)

11) Please enter any additional comments on your experience with XXXX.

12) What is your role at XXXX Medical Center?

Sample Question: 8) If you do not wear a badge every day, why not?

- There is not a badge available for me to wear.
- I do not know how it works.
- I forget to pick one up.
- Other: Please specify _____

Qualitative User Experience Survey

- ❖ **Collected** user data and survey responses from the partner organization's U.S. client hospital staff in medical or surgical departments (i.e., nurses, certified nursing assistants, patient care assistants, etc.).
- ❖ **Analyzed** results using regression analysis to determine R², P-value, and analysis of variance (ANOVA) for the quantitative data. Microsoft Excel and pivot tables were used to examine qualitative survey responses.

Conclusion

The agreement with the partner organization was to address the top issues identified by healthcare workers in one concerted effort. The recommendation was to modify the implementation instructions to incorporate leadership-led pre/post-shift meetings. These meetings intend to discuss any questions or concerns and lead the check-in/out process to show leadership compliance, eliminate the opportunity to forget to pick up, and ensure equipment is appropriately returned for charging.

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Contact Information:
Leilani L. Yoshida, DBA
leilani.yoshida@myemail.indwes.edu