

Leveraging modified work program for infection prevention program harmony and professional development

Suwannee Srisatidnarakul, RN, MSN, CIC^{1*}

*Corresponding author

Suwannee Srisatidnarakul
 1Infection Prevention Department
 City of Hope National Cancer Center
 USA

ABSTRACT

Background: Since the onset of the COVID-19 pandemic, the daily responsibilities of the Infection Prevention Department (IPD) have been exacerbated by heightened regulatory and licensing requirements, increasing demands from medical staff and patients, and an expanded scope of work. Consequently, infection preventionists (IPs) have struggled to find the bandwidth to effectively implement patient quality care improvement projects. The increased demand for infection prevention and control (IPAC) responsibilities has made it challenging to fill open IP positions. To address this need, a collaborative Modified Work Program (MWP) between the IPD and Human Resource Department at a National Cancer Institute-Designated Comprehensive Cancer Center has proven effective. Modified Staff for Infection Prevention (MSFIP) have been utilized to support IPD daily responsibilities with the potential development of future IPs.

Methods: Injured staff were placed on modified duty by the MWP, and the IPD was contacted. An IP interviewed the MSFIP to design appropriate and accommodated responsibilities. Several tools were provided, including helpful guides, daily task lists, links, forms, agency contact information, and references. The MSFIP was granted temporary data security access to electronic medical records used by IPs. Initially, MSFIPs required orientation and shadowing by IPs. Later, MSFIP with longer recovery periods trained new MSFIPs.

Results: Trained MSFIPs independently managed simple IP daily tasks, allowing IPs to continue and initiate quality improvement projects. Catheter-associated urinary tract infections remained low. All MSFIPs expressed a better appreciation of IP work, and several expressed interest in becoming IPs, potentially addressing the replacement of retiring IPs.

Conclusion: A well-developed program for MSFIP offers several benefits. IPs should consider using MSFIPs if an MWP exists in their facility, or work on developing one in collaboration with their human resources department.

KEYWORDS

Modified, injury, infection preventionist, pandemic

INTRODUCTION

From the beginning of the COVID-19 pandemic, the responsibilities of Infection Preventionists (IPs) have increased, partly due to heightened regulatory and licensing requirements, growing demands from medical staff, patients, and an expanded scope of work. A survey by the Association for Professional in Infection Control and Epidemiology (APIC) in 2018 revealed that acute care hospitals in the United States with an inpatient census between 0-150 were typically staffed with only one IP (Pogorzelska-Maziarz *et al.*, 2018). Findings from the APIC member focus groups conducted in November and December of 2021, indicated that the COVID-19 pandemic has generally exacerbated the responsibilities of IPs across hospitals. IPs have faced multiple changes and role expansions in addition to their routine and essential responsibilities, such as surveillance, outbreak response, education, mandatory meetings, and regulatory reporting on communicable diseases or hospital-acquired infection (HAI) data (Rebmann *et al.*, 2023).

Another APIC survey revealed the need for increased IP staffing due to the evolving healthcare systems in both inpatient and outpatient settings, regulatory requirements, and the

anticipated retirement of nearly 40% of current IPs (Gilmartin *et al.*, 2021). Despite awareness of the growing challenges in fulfilling infection prevention and control (IPAC) responsibilities, there has not been any literature published on effective interventions to address IP recruitment and workload through task delegation. The IPs at City of Hope National Medical Center (COH) leveraged the Human Resource Department Worker's Compensation Modified Work Program (MWP) to establish a Modified Staff for Infection Prevention (MSFIP) program to assist with their workload. To explore its benefits, the IPs conducted an exploratory study aimed at answering two research questions: 1) What is the impact of the MSFIP on reducing IPs' exacerbated workload support? 2) What is the possibility of MSFIPs' interest in becoming IPs through role exposure, thereby addressing the IP shortage? To the best of my knowledge, this is the first study of its kind to explore the possibility of the MSFIP program in addressing IPs' needs.

The findings in the current study suggest that by utilizing MSFIP to conduct basic tasks, such as audits on hand hygiene, isolation practices, personal protective equipment use, and regulatory reporting provided IPs with ample time to focus on prevention and control quality improvement responsibilities.

Conflicts of interest: None

<https://doi.org/10.36584/cjic.2024.002.05.120.123>

METHODS

Inclusion and exclusion criteria

The MSFIP provider's note was used to determine the inclusion and exclusion criteria. The injured staff with no absolute use of their hand and wrist were excluded from the study. Most of the restrictions included no lifting of heavy objects, no pulling or reaching – none of which were required to perform tasks in Infection Prevention Department (IPD). Additionally, various job activities in IPD, such as rounding, competency observation, and reviewing patient records could accommodate restrictions such as “no typing for more than 1 hour every 4 hours”. Most injured staff were effectively accommodated. To prevent further injury, all MSFIPs were instructed to stay within their assignments, strictly comply with restrictions, take frequent breaks, and report any unusual or increased discomfort. Most of the accepted MSFIPs were registered nurses (RNs) because they were the largest group sustaining injuries. More importantly, RNs required a smaller learning curve as they were familiar with many nursing metrics monitored by the IPD. Fifty-five RNs ($n = 55$) were included in this study.

The Human Resource MWP contacted the IPD for potential placement of a modified staff. Two factors contributed to the small sample size: limited computers and office spaces in the IPD, and the need for modified staff to provide support in other departments. Despite this, the IPD was able to maintain a constant flow of 1-3 MSFIPs per day throughout the 24-month study period.

Study period and interventions

This observational study ran from March 2019 to February 2023. The study interventions included four main components: 1) developing processes and documents to aid the MSFIPs in performing daily tasks; 2) ensuring accessibility to documents and reports for tasks completion; 3) creating a forum for collaboration and communication; and, 4) providing computers and workspace. Throughout the study period, the IPD had two empty offices with desktop computers.

The two main documents created to guide the orientation and workflow process were Duty Guide and Duty List. Examples of the MSFIP's general duties included reporting communication diseases, patient and staff COVID-19 reporting, record keeping and filing, *Candida auris* surveillance, following up on send-out labs, hand hygiene audits and isolation rounds, daily need assessment of Foley catheter needs, collating data from the HAI case findings, and assisting IPs with other tasks as needed.

The Duty Guide contained detailed information to assist MSFIPs with completing their daily duties. This included regulatory agencies' reporting links and related reporting forms, essential contact information for personnel, a list of the reportable communicable diseases, guidance on the lab interpretations (reportable/non-reportable), various surveillance forms, infection control risk assessment and risk mitigation compliance assessment forms, and components of central line and Foley catheter care bundles. The Duty Guide and Duty List were provided on the first day as part of the orientation process.

Data access

Accessibility to documents and reports were achieved through collaborating with the Information Technology (IT) Department. This collaboration involved granting MSFIPs temporary IP-level security access, converting necessary documents into shareable formats, and adding MSFIPs to various distribution lists (DLs) such as “Positive COVID-19 Employees” and “Contact Tracing”. A communication and collaboration forum was created using the DL-MSFIP email. Additionally, Microsoft Teams was set for MSFIPs to centralize documents and track completed and ongoing work. All IPs were included in the DL-MSFIP email and MSFIP Teams to facilitate communication efficiency, document accessibility, and follow-up on tasks and projects.

To maintain constant availability of MSFIPs in the IPD, IPs contacted the Human Resource Worker's Compensation MWP when an existing MSFIP was expected to return to full duty within two to three weeks. Since recovery times varied among the MSFIPs due to different types of injuries, the MSFIPs who were in IPD for a longer period were able to train new MSFIPs on simple tasks. To ensure accuracy and quality of work, IPs continued to provide new MSFIP training on certain tasks such as hand hygiene audits and conducting rounds.

To promote job satisfaction, MSFIPs were allowed to self-schedule to accommodate their personal needs (Wynendaele *et al.*, 2020).

RESULTS

Reduction in catheter-associated urinary tract infections

MSFIPs' efforts to support the reduction of HAIs were particularly effective in reducing catheter-associated urinary tract infections (CAUTIs). Alerting registered nurses to remove Foley catheters without appropriate criteria led to a decrease in the CAUTI Standardized Infection Ratio (SIR) from 0.79 in 2019 to 0.49 in 2021 (Figure 1). By 2023, the CAUTI SIR remained consistently low at 0.458.

In addition to managing urinary catheter devices, MSFIPs successfully implemented a hospital-wide central line bundle audit in 2020 with minimal initial guidance. The results were forwarded to the Nursing Department to address the findings. In 2022, two MSFIPs from the Vascular Access Department created a video detailing the central line dressing change procedure for Hemodialysis Contracted Service. Subsequently, they provided competency validation on the dressing change on all their RNs performing hemodialysis at COH (Table 1).

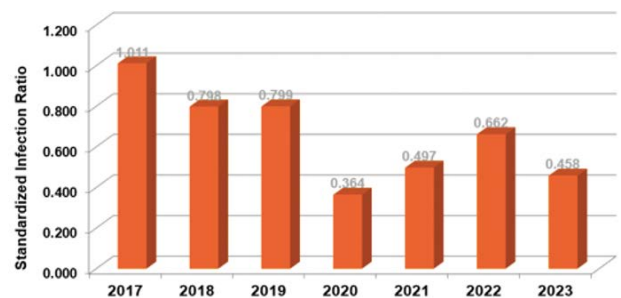


Figure 1: Catheter-Associated Urinary Tract Infection (CAUTI) Standardized Infection Ratio (SIR) 2017-2023

TABLE 1: COMPETENCY VALIDATION FOR DIALYSIS RNS OCTOBER 2022

Nurse	Observation Date	Pass (Y/N)	Re-Observation	Pass (Y/N)	Re-Observation	Pass (Y/N)	Re-Observation	Pass (Y/N)	Re-Observation	Pass (Y/N)
BT	18/10/2022	N	8/11/2022	N	11/12/2023	Y				
JM	5/10/2022	N	10/10/2022	Y						
KS	4/11/2022	N	11/11/2022	Y	16/11/2022	Y				
RD	12/10/2022	N	26/10/2022	N						
RW	6/10/2022	Y								
RB	13/10/2022	N	10/11/2022	Y						
SB	26/10/2022	N	10/11/2022	N	1/12/2022	Y	17/11/2022	N	22/11/2022	Y
SY	4/10/2022	N	11/10/2022	N	11/11/2022	N				
WL	11/11/2022	Y								
XC	12/10/2022	Y	8/11/2022	Y						
YJ	14/10/2022	N	17/10/2022	N	30/11/2022	N	18/1/2023	Y		

Improvement in Glo-Germ cleaning validation

In 2021, Glo-Germ cleaning validation was conducted on all patient rooms (Table 2), highlighting areas requiring improvement for the Environmental Service Department leaders.

Although Environmental Service (EVS) Leaders consistently monitor staff practices, cleaning validation was selected as one of the IP projects in 2021. MSFIPs received minimal guidance, instructions, or demonstrations on performing Glo-Germ cleaning validation before becoming independent to validate cleaning in all patient rooms. Table 2 lists the patient rooms and high-touch areas where cleaning verification was conducted (Yes = cleaned, No = not cleaned, NA = was not able to perform Glo-Germ). The results were analyzed and shared with EVS leaders, who subsequently worked with their staff to address areas of deficiency. The average Glo-Germ pass rate was 68%, representing an improvement from the baseline.

Improvement of HAI tracking and analysis

Some technologically savvy MSFIPs created additional electronic documents were, providing more efficient HAI tracking and analysis by IPs. Surveillance of *Candida auris*, an emerging fungus of concern (Sikora, 2023), is now managed independently by MSFIPs. MSFIPs were also invited to participate in nursing-related quality improvement projects such as HAI prevention taskforces and data-mining functionality improvements. It is crucial for

frontline staff to participate in these projects, as they can provide insights into how proposed changes may impact their workflow before implementation progresses.

All hospital-acquired CAUTI, central line-associated bloodstream infections, and *Clostridioides difficile* infections at COH require unit nursing leaders or their designees to complete a Case Review Form to the IPD. This process includes reviewing documented care and investigating areas for improvement. One technologically savvy MSFIPs converted the Case Review Form into a live document that automatically transfers the information entered into an Excel form. This streamlined process allows IPs to easily compile data, create graphs, analyze trends, and implement quality improvement projects in focused areas. Overall, this innovation has improved workflow and efficiency for IPs.



Paving a career path

In 2022, another concurrent project that contributed to raising awareness of the IP profession was the High School Student Career Path Program. MSFIPs independently created an orientation package (Figure 2), managed the scheduling, designed

TABLE 2: GLO-GERM PATIENT ROOMS CLEANING VALIDATION AUGUST 2021

Unit	Room	Iso Type	Door Knob	Light switches	Hand Sanitizer	IV Pole	IV Pump	Bed Rails	Call Box	Bedside Table	Phone	WOW	Commode	Toilet lush Hand	Toilet Bedpan Cleaner
6W	6111		Yes	Yes	Yes	N/A	N/A	Yes	Yes	N/A	Yes	Yes	N/A	N/A	N/A
6W	6117	C	Yes	Yes	Yes	N/A	N/A	N/A	Yes	N/A	Yes	Yes	Yes	Yes	N/A
6W	6127	C	Yes	Yes	No	Yes	Yes	No	N/A	N/A	Yes	Yes	N/A	Yes	Yes
6W	6125	P	Yes	Yes	Yes	Yes	No	No	No	N/A	Yes	Yes	No	Yes	Yes
															1
6E	6221	C	Yes	No	N/A	Yes	N/A	Yes	Yes	N/A	Yes	No	No	Yes	Yes
6E	6205	D	Yes	No	No	No	No	Yes	No	N/A	No	No	No	Yes	Yes
6E	6207	P	Yes	Yes	Yes	Yes	No	No	No	N/A	Yes	No	N/A	Yes	Yes
6E	6217		Yes	No	No	Yes	No	Yes	N/A	N/A	Yes	Yes	N/A	Yes	Yes
6E	6209	C	Yes	Yes	Yes	Yes	Yes	Yes	No	N/A	Yes	Yes	N/A	Yes	Yes
6E	6229	C	Yes	Yes	Yes	Yes	Yes	No	Yes	N/A	Yes	Yes	N/A	Yes	Yes
5W	5101		Yes	No	N/A	No	No	No	Yes	N/A	No	No	Yes	No	N/A
5W	5121	C	No	No	No	No	No	Yes	Yes	N/A	No	No	No	Yes	N/A
5W	5107	P	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	N/A	Yes	Yes
5W	5129	P	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	N/A	No	No
5E	5233	P	Yes	Yes	Yes	Yes	No	Yes	Yes	N/A	Yes	Yes	No	Yes	N/A
5E	5205	P	Yes	Yes	Yes	Yes	Yes	No	N/A	No	Yes	No	No	Yes	Yes
5E	5213	C	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes
Compliance (%)			94	70	73	80	43	50	64	75	70	59	22	87	92

Isolation Type: C=Contact, D=Droplet, P=Protective

the experience, and created the QR code for the program evaluation. Following the initial intervention, three out of 21 students expressed interest in pursuing an IP career.

DISCUSSION

MSFIP contributed significantly to the reduction in CAUTIs, improving Glo-Germ cleaning validation, and enhancing HAI tracking and analysis. There were no other confounding factors affecting these associations. Additionally, given the exacerbated workload from the COVID-19 pandemic, COH IPs did not have the capacity to conduct these surveillances. Furthermore, quality improvement projects, which IPs could only undertake after fulfilling their minimum required duties and responsibilities, were the focus of these initiatives.

MSFIPs expressed a greater appreciation for IP work and became advocates for the IPD after returning to full duty in their respective units. About one-third of MSFIPs expressed interest in becoming IPs. This has significant implications for replacing retiring IPs, estimated to be near 40% (Gilmartin *et al.*, 2021). MSFIPs appreciated being able to maintain close to their regular income during their recovery while acquiring new skills and knowledge in infection prevention and enhancing overall patient care quality. Each MSFIP expressed satisfaction in contributing to patient safety and maintaining social connections despite their physical injury and limitations. While this study did not explore benefits to employers, potential advantages may include cost savings from reduced workers' compensation or disability claims, as well as mitigating costs associated with hiring temporary workers or paying overtime (Government of Canada, Canadian Centre for Occupational Health and Safety, 2023).

Like most quality improvement assessments, this study has limitations. The most apparent is the small sample size, which may limit the generalizability of the results. The constant flow of MSFIPs observed in this study may not be replicated at other institutions due to varying policies regarding Modified Work Programs (MWP). Availability of office space and computers could also pose implementation challenges.

Since most MSFIPs in this study were RNs, potentially due to their higher injury rates compared to other healthcare workers (based on Occupational Safety and Health Administration, 2013), this may introduce selection bias.

Despite these limitations, COH's MSFIP program provides significant mutual benefits for injured employees and the employer. Recruiting RNs may necessitate changes in work scheduling and pay structures. In this study, non-RN MSFIPs successfully managed daily COVID-19 testing stations for unvaccinated employees as mandated between August 2021 and September 2022. With additional training, they also provided valuable support to the IPD.

However, one-third of MSFIPs who expressed interest in becoming IPs discussed their hesitance regarding transitioning for two main reasons. Firstly, they were concerned about potential reductions in pay, as RNs often work three 12-hour shifts with the last four hours being overtime pay, which differs from the pay structure for IPs. Secondly, they expressed concerns about transitioning to working five 8-hour shifts

per week, which would result in fewer days off compared to their current schedule. Interestingly, many MSFIPs indicated openness to working four 10-hour shifts per week, which they viewed as offering an additional off-day beneficial for work-life balance.

These factors should be carefully considered in efforts to recruit RNs for IPs positions. Future research could explore expanding the MSFIP selection criteria to include more non-clinical staff to potentially broaden the IP candidate pool. Collaboration with the Human Resources Department to explore the financial benefits and cost-savings of such programs could also be beneficial.

Overall, this study underscores the occupational and human resources significance for employers to establish Worker's Compensation Programs that provide support for occupationally injured employees undergoing medical treatment and rehabilitation services (Clayton, 2004). Finally, MSFIPs fulfilling daily infection prevention and control tasks enabled IPs to focus more on strengthening quality improvement projects that may otherwise not have been feasible.

REFERENCES

- Clayton, A. C. (2004). Clayton A. Workers' compensation: a background for Social Security professionals. *Social Security Bulletin*, 65(4):7-15. PMID: 16402657.
- Gilmartin, H., Reese, S. M., & Smathers, S. (2021b). Recruitment and hiring practices in United States infection prevention and control departments: Results of a national survey. *American Journal of Infection Control*, 49(1), 70–74. <https://doi.org/10.1016/j.ajic.2020.07.024>
- Government of Canada, Canadian Centre for Occupational Health and Safety. (2023, June 13). *Return to Work – Program Overview*. https://www.ccohs.ca/oshanswers/psychosocial/rtw/rtw_program.html
- Occupational Safety and Health Administration (2013) Facts About Hospital Worker Safety. Retrieved online 8/6/2023 from https://www.osha.gov/sites/default/files/1.2_Factbook_508.pdf
- Pogorzelska-Maziarz, M., Gilmartin, H., & Reese, S. M. (2018). Infection prevention staffing and resources in U.S. acute care hospitals: Results from the APIC MegaSurvey. *American Journal of Infection Control*, 46(8), 852–857.
- Rebmann, T., Holdsworth, J., Lugo, K. A., Alvino, R. T., & Gomel, A. (2023). Impacts of the COVID-19 pandemic on the infection prevention and control field: Findings from focus groups conducted with association for professionals in infection control & epidemiology (APIC) members in fall 2021. *American Journal of Infection Control*, 51(9), 968–974. <https://doi.org/10.1016/j.ajic.2023.02.013>
- Sikora, A. (2023, April 27). *Candida auris*. StatPearls - NCBI Bookshelf. <https://www.ncbi.nlm.nih.gov/books/NBK563297/>
- Wynendaele, H., Gemmel, P., Pattyn, E., Myny, D., & Trybou, J. (2020). Systematic review: What is the impact of self-scheduling on the patient, nurse and organization? *Journal of Advanced Nursing*, 77(1), 47–82. <https://doi.org/10.1111/jan.14579> ✶