

Integration of Occupational Health and Primary Care

A DNP Quality Improvement Project

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Abstract

Employer sponsored wellness initiatives are becoming increasingly prevalent. They address health from a variety of perspectives such as personal risk factors, exercise, nutrition, and stress. A trend to incorporate worker well-being into occupational health and safety efforts has also been underway. The Total Worker Health initiative is defined as, “policies, programs, and practices that integrate protection from work-related safety and health hazards with promotion of injury and illness prevention efforts to advance worker well-being,” (Schill, 2017, p. 159). The model calls for consideration of worker health beyond the four traditional areas of hazard and exposure control, work organization, the built environment, and compensation and benefits (Schill, 2017). This model was chosen as a guide for a quality improvement project to improve utilization of primary care services within a manufacturing plant by integrating occupational health and primary care. The quality improvement project employed Plan-Do-Study-Act (PDSA) cycles (Frankel, Haraden, Federico, & Lenoci-Edwards, 2017).

Keywords: Total Worker Health, occupational health, primary care, PDSA

Employers engage in health, safety, and wellness programs for a variety of reasons from meeting regulatory requirements to augmenting benefits in order to attract employees (McClellan, 2017). In particular, worksite health promotion programs are theoretically aligned with the Affordable Care Act emphasis on preventive medical services (Cherniak, 2013; McClellan, 2017). Effective strategies for engaging employees in these health promotion programs, however, remain elusive (McClellan, 2017). In this quality improvement project (QIP), a clinic team approached the problem by integrating health promotion into occupational health services.

The Clinical Problem

The setting for this QIP was a large vehicle manufacturing corporation which contracted with a healthcare company to manage a primary care Health and Wellness Center located adjacent to its corporate headquarters. The healthcare company also operated the occupational health clinic (OHC) located in the corporation's nearby manufacturing plant. All employees, manufacturing and corporate, were entitled to free or low cost primary care services through the Health and Wellness Center.

Manufacturing employees utilized the Health and Wellness Center primary care services much less than corporate employees. Yet, statistically, this population is more likely to suffer from chronic disease. Data from the National Health Interview Survey (NHIS) for the period 2008-2012 indicates that service and manual laborers were more likely than office or professional workers to report a history of CHD/stroke (Luckhaupt & Calvert, 2014). Furthermore, an analysis of 408, 321 commercially insured employees working for 18 companies determined that 40% of those taking disability leaves had three or more chronic conditions

including hyperlipidemia, hypertension, arthritis, and depression while among those not taking leaves, 18% had three or more chronic conditions (Gifford, B. 2017). Nevertheless, the chronic conditions were not necessarily the reasons for the leaves: 26% had musculoskeletal disorders and 30% had an injury such as a sprain, strain, or fracture (Gifford, B. 2017). While workers took disability leave for acute conditions, their health may have been compromised by chronic comorbidities putting them at higher risk for disability.

Health care delivery models centered on primary care demonstrate superior outcomes in terms of population health, health equity, and costs of healthcare (Starfield, 2012). Various definitions of primary care exist and attempts have been made to identify the specific attributes of primary care that most influence quality of care and health (Friedberg, Hussey, & Schneider, 2010; Rosano et al., 2012; Shi, 2012). The health benefits derived from a primary care focus have been most closely linked to four attributes: “first contact, person-focused care over time, comprehensiveness, and coordination,” (Starfield, 2012, p 22). Primary care providers improve population health by establishing enduring relationships with patients and responding to evolving health needs and goals.

Plochg, Klazinga, Shoestein and Starfield (2011) argue that health professionals must organize themselves and the systems in which they practice in response to the populations they serve. In particular, the rise in multimorbidity calls for redesigned approaches to care delivery (Plochg et al., 2012). Opportunities for preventative health and early intervention to improve worker health were being missed among the manufacturing population. In line with the suggestions of Plochg et al. (2012), the approach to address this gap in care was to connect manufacturing employees with primary care services through the occupational health clinic. Such an intervention would provide employees with chronic diseases such as diabetes,

hypertension, hyperlipidemia, and tobacco use disorder with opportunities to conveniently receive support in managing these conditions. It would also provide a platform from which to more holistically address workplace factors affecting employee health and well-being and the ways in which those interact with individual health risks.

Review of the literature

Integration of Occupational Safety and Health with Health Promotion

Anger et al. (2015) conducted a review of the literature to examine the evidence related to integration of occupational safety and health with health promotion programs in the worksite. Seventeen studies met criteria for inclusion and only one of these provided sufficient evidence to recommend integration (Anger et al., 2015). Nevertheless, all but one of the 17 demonstrated improvements in risk factors for injury and/or chronic disease (Anger et al., 2015). Because of the lack of consistency in reporting TWH intervention studies, Anger et al. made recommendations for planning, design, results and reporting (Anger et al., 2015). Although these recommendations refer to the conduct of studies rather than quality improvement projects, they served as guidelines in the design of this project:

- Present the rationale or theoretical basis for effect of intervention.
- Provide measures of conformity to intervention and process measures.
- Include a description of integration of health promotion and occupational health and safety.
- Report effect size statistics.
- Conduct analyses identifying factors mediating or moderating effects of intervention.
- Discuss long-term impact of the intervention.

- Provide health care providers, management, and/or union representatives with a description of the intervention and how it controls or reduces risk factors (Anger et al., 2015, p. 244) .

The goal was to design and report a QIP that would contribute to the literature on TWH interventions.

Critique of Integration

Lax (2016) critiques the TWH initiative and offers suggestions for improvement. Many interventions labelled TWH are not integrated safety and health initiatives but primarily wellness programs that focus on individual health choices without changing work environments (Lax, 2016). In order to maintain the focus of TWH as originally envisioned, Lax proposes utilizing the framework of social determinants of health. From this lens, the workplace is one of several determinants including where the individual lives, and their income. Health therefore, is no longer considered a consequence of personal choice. Lax (2016) emphasizes that worker participation in design and assessment of interventions is imperative as is strict adherence to ethical handling of employee health data through the development of codes of conduct for healthcare professionals employed or contracted by corporations to conduct occupational health, safety, and wellness programs.

Howard, Chosewood, and Hudson (2016) respond to the critique by Lax, noting that the TWH concept was updated in 2015 to emphasize the focus on reorganization of work rather than change in individual worker behavior. They emphasize that TWH continues to evolve as a platform from which to innovate approaches to worker well-being (Howard, Chosewood, & Hudson, 2016). The critique of TWH and the response to it demonstrate the inherent tension within the integration effort between business/employer interests and those of the workers.

Gaps

McLellan (2017) presents a review of the key issues related to employer roles and opportunities for promotion of health, safety and well-being in the workforce. Employer sponsored programs directed at health and safety are evaluated not only in terms of cost savings and productivity but also on the mission, priorities and goals of the business and how the programs align with the vision of senior leadership (McLellan, 2017). The evidence on success of employer sponsored health promotion and disease prevention interventions is not consistent or robust. This is in part due to a lack of standards for measurement (McLellan, 2017). A key consideration is the collection of data. Through wellness programs as well as occupational health and disability claims, employers collect a wide variety of health, safety, and productivity information. This information is protected through a variety of laws and regulations but despite these protections many employees are distrustful of employers' interest in their health (McLellan, 2017). Interventions aimed at improving safety, health and well-being of workers must address the barriers and recognize facilitators. The fact that employers recognize the value of employee wellness beyond cost-reduction is promising but other benefits must nevertheless be quantified in some fashion.

Purpose of the QIP

This QIP aimed to increase utilization of primary care services by manufacturing employees as a first step in introducing TWH to this setting. Workflows within the OHC were redesigned in order to raise employee awareness and utilization of available primary care services. At the heart of this QIP was a change in nursing practice in occupational health. Wellness, including chronic disease management and preventative care were integrated into the nursing care in the OHC as indicated. Intervention design began with a review of tasks to

minimize clerical work and maximize clinical interactions with employees. The protocol for interactions with patients presenting to the clinic with health concerns expanded to allow staff to work at the top of their scope of practice. Standard occupational health and safety interventions performed in the clinic incorporated wellness assessments and referral for indicated treatments as appropriate. The staff at the occupational health clinic engaged in education to engage manufacturing employees in health and safety measures both at work and in their personal lives.

Approach to the Conduct of the Project

Setting

The focus of the QIP was the OHC located within the manufacturing plant. The clinic was located adjacent to the manufacturing floor. It was an older space and in need of cosmetic and structural improvements. An as yet unrealized goal is to remodel the space to make it more welcoming and to identify it as operated by the healthcare organization rather than the employer.

Initially, the workflows for the licensed practical nurses (LPN) originally staffing the OHC posed a significant barrier. Their role had become largely clerical, processing workers compensation and disability benefits paperwork. They addressed minor health concerns and dispensed over the counter medications but offered few services for management of chronic conditions. The scope of practice of the LPN limited patient assessment and plans of care. The QIP required a reduction of unnecessary clerical tasks and the addition of new and unfamiliar tasks which would needed to be introduced into the occupational health clinic. Clarifications on scope of practice for LPN by the Oregon State Board of Nursing expedited the change from LPN to registered nurses (RN) at the OHC and a barrier in effect became a facilitator.

Employees had become accustomed to informal visits in the OHC. They had received requested over the counter medications with minimal or no assessment. Sometimes they

presented to the OHC simply to visit with the nurses or to get off the manufacturing floor. This intervention imposed a more formal routine and questions which at times were considered invasive such inquiries regarding past medical history. Employees were at times reluctant to submit to physiological measurements such as blood pressure measurement which were not routinely offered in the past. Initially, employees perceived the changes in staffing as negative. Part of the QIP required the new nurses to explain their roles and the expanded services that would be available to employees by virtue of having a registered nurse and nurse practitioner onsite. With consistent attention to employees' well-being, the new OHC staff increased credibility and trust with employees.

Several recent changes in leadership made this an opportune time for operational changes such as incorporating wellness and prevention care into occupational health. The director of human resources at the truck plant was relatively new as was the safety director. In the corporate arena, the Occupational Health Program Specialist was also new. While these individuals were new to their positions, they were not new to the company so they understood a great deal about the culture. In the clinic, the Director of Clinical Services (DCS), a nurse with management experience, was relatively new to the healthcare organization. She championed improvement efforts in the OHC.

A significant facilitator for this QIP was the successful piloting of "Backpack Clinic." This initiative began in June of 2017 as a way to encourage utilization of primary care services by manufacturing employees. The Health and Wellness Center was located approximately a mile away from the manufacturing plant, making it less convenient for manufacturing employees than corporate employees who worked across the street from the clinic. Additionally, many manufacturing plant employees had not heard about this free/low cost primary care option so

bringing primary care to them was a way to introduce this benefit. The presence of the nurse practitioner in the plant once a week increased employee knowledge of the benefits available to them. This laid a foundation for the integration of wellness and preventative care into the occupational health setting.

A barrier that arose during the QIP was a concern among manufacturing management that providing primary care within the occupational clinic would be misinterpreted by employees. Management was sensitive to perceptions of conflict of interest. The QIP team made efforts to communicate with all stakeholders, including employees and union leadership to clarify intentions.

Population

All employees served through the occupational clinic were served by this QIP. This is primarily a large subset of the 600 manufacturing employees but administrative employees working at this site were also entitled to use the clinic and were not treated differently. Nevertheless, administrative employees were incentivized to receive annual health screening with reductions on their health insurance premiums. This incentive was not available to manufacturing employees.

Employees connected with the occupational clinic through several routes. They presented with requests for over the counter (OTC) medications usually for such complaints as headache, stomach ache, muscle pains, and minor wounds. Employees completed formal reports of worksite injuries through the occupational health clinic. Sensitive documentation related to workers compensation, FMLA, long and short term disability was processed by the occupational health clinic staff. Mandatory Occupational Health and Safety Administration (OSHA) testing, fitting, or training such as hearing exams or respiratory fit testing was also conducted through the

occupational health clinic. Thus there were various routes by which occupational health staff were made aware of employee health issues and could guide employees to primary care services.

The treatments and interventions offered to employees in the course of this QIP were the same as those normally offered through the occupational health and primary care clinics. All employees received the same standard of care. No protected health information was used in data analysis. An institutional review board determined that this project was not research and did not require oversight.

Implementation and Outcome Evaluation

Interventions and implementation procedures

Implementation of the QIP required teamwork between the staff of the primary care and occupational health clinics, the DCS and the nurse practitioner (NP) who was the sponsor of the QIP. In the manufacturing plant, support from the team leaders on the manufacturing floor and from human resources and the safety officer enabled employees to feel comfortable utilizing the full range of health services available to them. Human resources and safety team support also enabled integration of primary care health interventions with those of occupational health and safety. The support of the healthcare organization upper management enabled clinic staff to trial new workflows and to access essential data to monitor QIP progress.

QIP interventions were based on The Model for Improvement (Frankel, Haraden, Federico, & Lenoci-Edwards, 2017). This approach uses three questions and the Plan-Do-Study-Act (PDSA) cycle (Frankel et al., 2017). The questions are: What are we trying to accomplish? How will we know that a change is an improvement? What change can we make that will result in improvement? (Frankel et al., 2017, p 21). For this QIP, the answers to those questions were as follows:

What are we trying to accomplish? Increased utilization of primary care services by manufacturing plant employees

How will we know that a change is an improvement? Utilization will increase.

What change can we make that will result in improvement? This was the question asked in each cycle of PDSA.

Measures and Outcomes

The primary outcome was utilization before and after the intervention. Data for this outcome was extracted from the electronic health record. Report functions already existed for this purpose.

The chief ethical consideration was to maintain employee anonymity. This was facilitated by the fact that the healthcare organization routinely extracted utilization data to present to the employer as part of their contract agreement. This data was necessarily de-identified.

When integrating primary care and occupational health, it was also necessary to ensure separation of health information. Certain health information pertaining to workers compensation claims or FMLA requests could be accessed by employers, within certain parameters. This type of information had to be separated from the rest of the EHR in order to safeguard the employee's healthcare rights.

A third ethical consideration was patient choice. Primary care services were optional benefits. Employees were not required to obtain yearly biometric screening. Staff were required to offer services in such a way that employees did not feel coerced.

Costs associated with the QIP were related to the changes in staffing matrix and increased staff hours. Independently of the QIP but enhancing its success, the OHC changed from an LPN to an RN model which increased costs but increased available services. Utilizing a nurse

practitioner in occupational health both for program development and provision of direct care also added costs. The QIP team considered that in the long term, increased access to care and improved management of employee health and safety could decrease absenteeism and presentism and so likely would represent a cost savings.

Implementation of the Project

PDSA cycles

Three Plan Do Study Act cycles were completed: one before the QIP and two as part of the project. In the planning stage for the first cycle (May 2019-October 2017), the guiding question was, how could the healthcare organization increase utilization of primary care services by manufacturing plant employees? The initial step was the implementation of a primary care “backpack clinic” to trial offering primary care services onsite at the manufacturing plant. Simultaneously, the nurse practitioner staffing the clinic assessed the opportunities for expanding primary care services and integrating with occupational health. For example, instead of outsourcing the annual respiratory physicals, these were conducted by the nurse practitioner in the occupational health clinic. During these physicals, health risk assessments were offered to employees as were referrals to the Health and Wellness Center primary care clinic for hypertension, hyperlipidemia, and smoking cessation.

This preliminary PDSA cycle revealed a lack of awareness of primary health services among employees and some distrust of employer sponsored healthcare. It also became clear that the current staffing matrix utilizing LPNs significantly limited the scope of services that could be offered through occupational health. Finally, there was a lack of communication between the employer and the healthcare organization regarding the purpose and goals of the occupational health clinic.

As the QIP project began in November of 2017, the healthcare organization began the transition from an LPN staffing matrix to a matrix which would be centered on two full time RNs and possibly a part time NP. During planning, the two guiding questions were, how could the healthcare organization:

1. Partner with the employer to improve processes at the OHC and integrate primary care services?
2. Continue to reach out to employees and union leadership?

An initial intervention begun in December was aimed at spreading information about primary care services. The nurse practitioner (sponsor of the QIP) visited manufacturing team huddles at the start of shift. These were groups of five to 25 employees who work in a single area or function. The nurse practitioner briefly described the primary care benefits available, reviewed Health and Insurance Portability and Protection Act laws, answered questions and provided written information. During this intervention period the NP incidentally also became involved in problem-solving some occupational health issues. Although this was not a planned intervention it provided an opportunity for the employer to appreciate the benefits of an onsite NP.

The QIP team developed and presented a proposal to conduct a pilot of NP presence in the occupational health clinic for sixteen hours (two shifts) per week. No primary care would be provided but the NP would work with the safety manager and disability coordinator to improve current processes. While management at the plant continued to be uncomfortable with the idea of integrating primary care and occupational health, union leadership noted that huddle rounding and discussion of HIPPA were helpful in allaying many employee fears.

The next PDSA cycle began in January of 2018. In planning for this cycle, project members asked, in what ways could the healthcare organization:

1. Coordinate with the safety officer, disability coordinator, and labor relations specialist to improve upon processes already in place?
2. Assess gaps in care and opportunities to integrate primary care services into occupational health.
3. Continue to reach out to employees

The NP continued huddle rounds and also staffed the occupational health clinic several days a week. The NP incidentally was then available to conduct new employee physicals and was able to use that opportunity to promote primary care services. Again, while this was not initially a planned intervention, NP presence in the clinic allowed project members to take advantage of the opportunity.

Employer senior leadership expressed support for integration of primary care services and expansion of the occupational health clinics role in employee safety and health. Within the manufacturing plant, however, human resources staff remained skeptical. Union leadership viewed integration as a positive step but emphasized the need to continue building trust among the employees. They affirmed that NP presence within the clinic promoted confidence.

During this cycle, team membership expanded to include a newly hired RN as well as an RN working elsewhere within the healthcare organization who agreed to assist in staffing the clinic while the search continued for a second full time RN. This expanded team contributed to the improvement and streamlining of processes such as injury reporting, drug and alcohol testing, respiratory and new employee physicals, and care coordination for employees on workers compensation, FMLA, and short term disability leaves. The team also worked to establish relationships with the employees and reassure them regarding the changes occurring at the occupational health clinic.

At the close of the third PDSA cycle, the healthcare organization and the employer came to an agreement to pilot a fourth program. The NP would work 8 hours per week at the OHC with 4 hours reserved for primary care appointments and 4 hours for administration of the occupational health program. A second full time nurse was hired. The occupational health staffing matrix thus consisted of two full time RNs staffing day and swing shifts and a part time NP. The NP continued to see patients at the Health and Wellness Center primary care clinic as well thus providing continuity between the two clinics.

Outcomes

Utilization

Utilization increased since the beginning of the initiative in May (Figure 1). The run chart in figure 2 shows however, that since the beginning of the QIP in November, there was not a significant trend up or down. Some factors which negatively affected utilization may have included the Thanksgiving, Christmas and New Year Holidays which all fell within the 27 weeks of the QIP. In addition, more efforts must be made in terms of employee engagement. Feedback from labor representatives suggest that clinic staff should continue to reach out with interventions to raise awareness of and trust in the healthcare services.

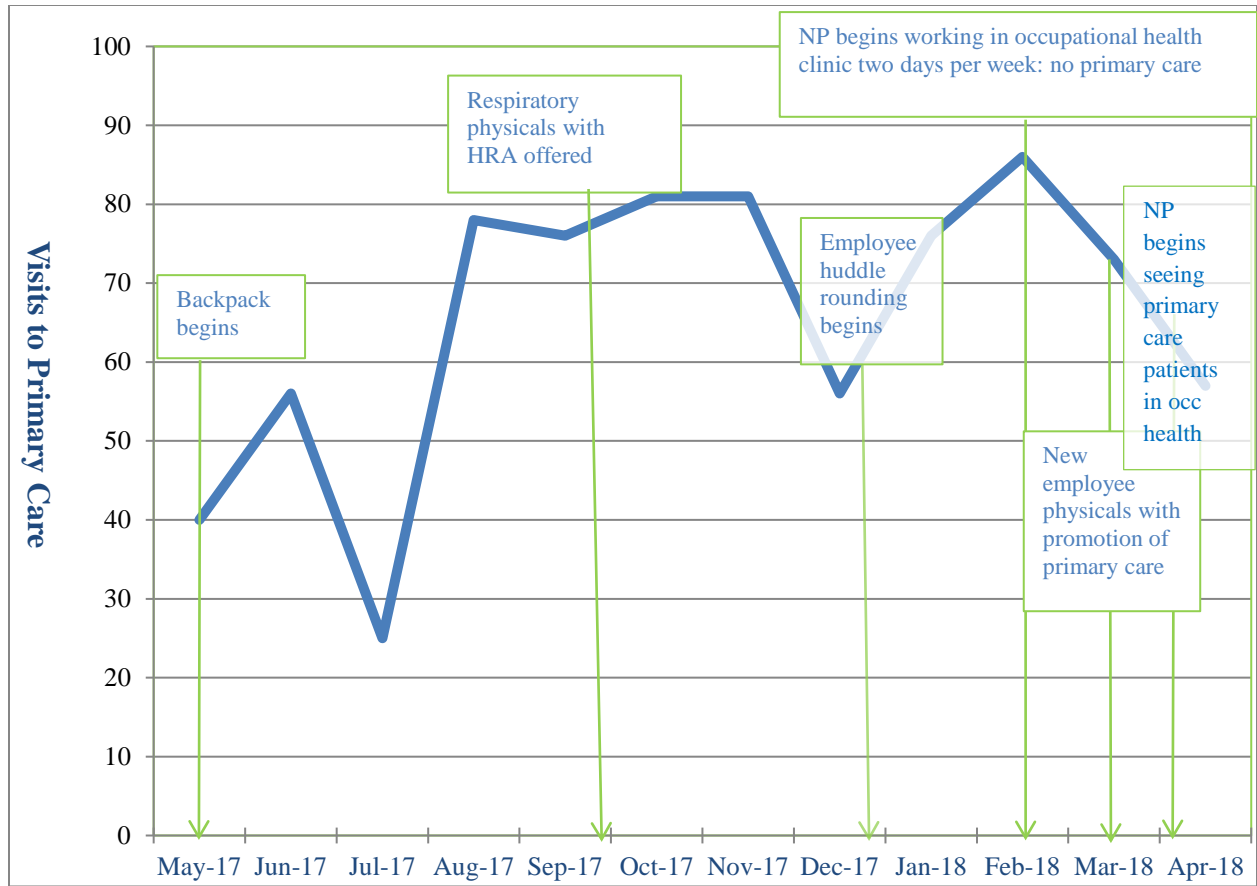


Figure 1 Utilization since beginning of initiative

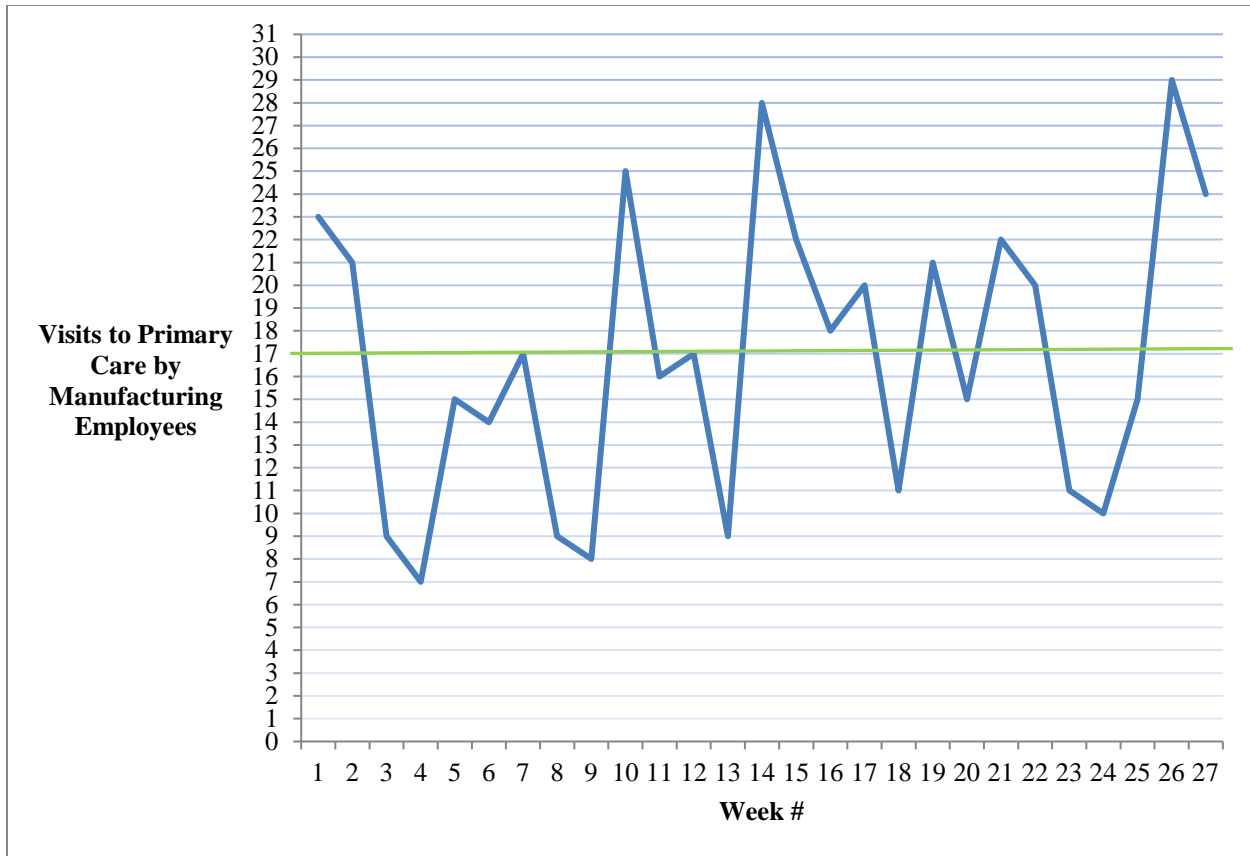


Figure 2 Utilization Since Beginning of QIP

Integration of Primary Care into Occupational Health

Nevertheless, leadership within the healthcare company, the employer and labor supports continuation of the QIP as they have seen benefits beyond increases in utilization. Among these are improvements in health and safety processes in the manufacturing plant. Recently, the safety engineer and union safety representative agreed to meet monthly with the occupational health clinic team to review safety and health concerns brought forward by employees, clinic staff, and management. The goal for this collaborative effort is to identify changes that should be made in standard work and in the work environment as well as the education, training, and support employees need to work safely. Similarly, conducting new employee physicals through the occupational health clinic as well as at the Health and Wellness Center has enabled staff to assist

employees in closing health care gaps for themselves and their families. These proactive approaches to safety, health and wellness result from the collaborative work of the QIP.

Costs

The chief cost directly attributable to the QIP is the eight hours of NP time added to the OHC staffing matrix. The transition from LPN to RN would have occurred regardless of the QIP. A variety of occupational health services previously outsourced including respiratory and new employee physicals have meant an overall reduction in costs to the employer despite an increase in NP hours.

Implications for Practice

The QIP has resulted in a new role for a NP within this healthcare team. With the final PDSA cycle, the NP role formally broadened to include a systems perspective. Organizational and systems leadership is an essential of the Doctor of Nursing Practice (DNP) education but not a skill that is necessarily appreciated in the clinical settings where NPs practice (American Association of Colleges of Nursing, 2006). Similarly, the health and safety and human resources staff in the manufacturing plant had a limited understanding of the scope of practice or skill set of a nurse practitioner beyond the role of physician extender. This QIP has created an opportunity to demonstrate the contributions of a DNP prepared nurse practitioner within this occupational health setting.

Summary and Next Steps

While primary care visits by manufacturing employees did not increase during the QIP, progress was made in the integration of primary care with occupational health. Opportunities to support and improve employee health and safety were identified and occupational health clinic processes were redesigned accordingly. There is still much work to be done but both the

employer and the occupational health clinic staff have expressed satisfaction with the changes to date.

A significant facilitator going forward will be the newly formed occupational health team of two RNs, the NP, physical therapist and the Director of Clinical Services. This will allow for commitment to more substantial and longer-term interventions. Having consistent staff within the occupational health clinic will allow for improved relationship building with employees. Similarly, communication and teamwork with the safety officer and human resources staff will be facilitated. The organizing principle for all these efforts will continue to be a focus on Total Worker Health.

In the future, quality improvement efforts should target more patient-centered outcomes. The Health and Wellness Center currently utilizes a patient survey administered by tablet. A similar survey method could assist the occupational health clinic staff to better understand the health and safety concerns of employees at the plant. As Lax (2016) emphasizes, a successful integrated program should involve workers in the planning and execution. Union leadership was consulted during the execution of the QIP but the occupational health staff would like to work towards a more active partnership with employees.

A central critique of Total Worker Health programs is that they are subject to the conflicting priorities of economics and health (Lax, 2016). The disparate professional mandates for those involved in occupational safety and health illustrate this fundamental conflict. Occupational health broadly concerns itself with health promotion and preventing illness and injury (Guzik, 2013). In contrast, Gatchel (2012) notes that, "Safe and profitable production is the ultimate goal of the safety professional," (p 9). The QIP team in fact found that it was necessary to navigate some conflicts of priorities if not interests. Lax (2016) refers to the sharply

growing interest in worksite wellness as, “commodification of health and wellness,” (p 19). A motivating factor for this QIP team was to prevent the primary care services from becoming simply another product sold to the employer.

Instead, the team envisioned an opportunity, as Plochg, Klazinga, Shoestein and Starfield (2011) propose, to redesign healthcare delivery to respond to the needs of a population. The Total Worker Health approach to wellness suggested that the model move beyond influencing individual health choices. QIP interventions targeted effects of the work environment on worker health as well as those influences traditionally considered non-work related. The occupational health team was reconfigured to include a DNP prepared nurse practitioner in order to expand opportunities to enhance worker health, safety, and wellness. The QIP has set a foundation for continuing to develop an occupational health program that responds to and anticipates the safety, health, and well-being needs of this manufacturing plant population.

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