

were conducted in Stata/MP version 17.0, and we performed multivariable conditional logistic regression with an alpha of 0.05 as threshold for statistical significance. The model was built according to a priori hypotheses and results from bivariate analysis of individual risk factors. **Results:** There were 32 SSI among 1709 cesarean deliveries, and all cases successfully matched with 4 controls for an analytic sample of 128. Bivariate analyses identified 7 relevant variables for inclusion in the multivariable model which narrowed down significant risk factors to 3: operative time (in minutes), post-operative chlorhexidine gluconate (CHG) bathing, and number of people in the operating room. Assessment of fit indices suggested an excellent fit with pseudo R-square of 0.526. **Conclusions:** This study demonstrated the utility of a case-control study design to identify attributable risk factors for relatively rare but significantly trending infection events. Not only is the design more efficient (e.g., time needed to abstract 50 data points for each patient), but it also employs statistical analyses that are often lacking in case-by-case investigations or RCA. It also has the power to narrow down risk factors for focused prevention efforts to get “the most bang for the buck.”

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**Presentation Type:**

Poster Presentation - Poster Presentation

**Subject Category:** Quality Improvement

**Automated Discontinuation of Isolation Precautions with the Use of Electronic Health Record Tools**

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**Background:** At a comprehensive cancer center, hundreds of patients are screened daily for infections requiring the implementation of isolation precautions. Discontinuation of precautions is determined by negative testing, resolution of infection, or other criteria. Determining appropriate discontinuation of isolation precautions is labor intensive for Infection Preventionists (IPs). An unintended consequence of manual discontinuation is that numerous patients remain on isolation indefinitely. This was amplified during the COVID-19 pandemic when thousands of patients were placed on isolation precautions. Using electronic health record (EHR) tools, opportunities for process improvements were developed. Our goal was to establish an automated method to resolve isolation precautions. We aimed to decrease the number of manually resolved precautions by 25% each fiscal year (FY), compared to our baseline of activity in FY 2019 (FY19). Our secondary aim was to automate adding and resolving precautions when testing is initiated for suspected transmissible conditions (rule-out testing features).

**Methods:** Infection Control (IC) collaborated with EHR analysts to build tools to automate a process for appropriate isolation discontinuation. We reviewed our internal data in conjunction with evidence-based guidelines and started with acute, short-term infections that do not require repeat testing or cultures. Expiration dates were established for these infections to resolve automatically after meeting criteria. A secondary review determined that additional infections could be added safely to this process. The secondary aim of establishing rule-out testing was implemented for respiratory viral panels (including SARS-COV-2) and C. difficile testing. When testing was ordered for these conditions, a suspect-infection status and alert for precautions were automatically added to patients’ EHR banners. If the assay resulted negative, the suspect-infection status was automatically removed from their chart. **Results:** Our baseline of active infections in FY19 was approximately 2,700 cases. From FY19 through FY23, 123,115 infections were added to our patients, and 128,422 infections were resolved. In the first year of implementation, there was a 58% decrease in the number of manually resolved cases. From the initiation of our project through the end of FY23, manual discontinuation of precautions has decreased by 88%. **Conclusions:** We successfully implemented a process improvement project to appropriately remove patients from isolation precautions automatically using EHR tools, which resulted in reduced labor on our IPs and patient time spent on isolation restrictions. Additional benefits from this process improvement extend to decreasing unnecessary costs to the patient and the organization, better stewardship of supply/resources, and improving patient satisfaction.

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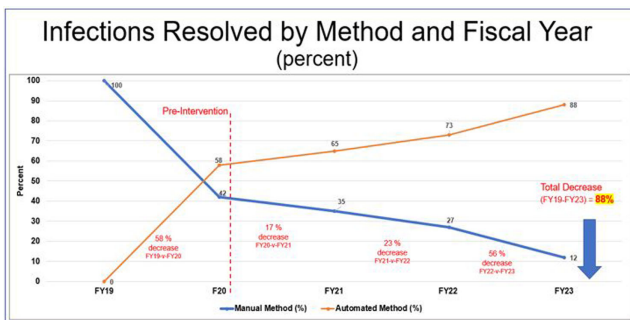
Poster Presentation - Poster Presentation

**Subject Category:** Quality Improvement

**Utilizing Technology to Fill the Ambulatory Care Communicable Disease Practice Gap**

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**Background:** Infection Prevention (IP) practices in ambulatory care are often reactive and many communicable diseases in the community often do not fall onto IP’s radar until the patient becomes ill enough to seek inpatient services. The gap between ambulatory and inpatient care can lead to increased transmission and illness severity. Early identification has substantial impacts on timely implementation of IP mitigation strategies, appropriate handoff upon entry into other care settings, and timely reporting to public health organizations. Current IP processes underutilize electronic health record (EHR) capabilities by relying upon lab driven notifications. This project sought to redesign the IP’s workflows, advancing the health system beyond the acute care setting and into the ambulatory care setting by adding the power of diagnosis codes to close a practice gap. **Method:** Infection Prevention and Information Technology collaborated to build silent best practice advisories (BPAs) in the EHR that utilized

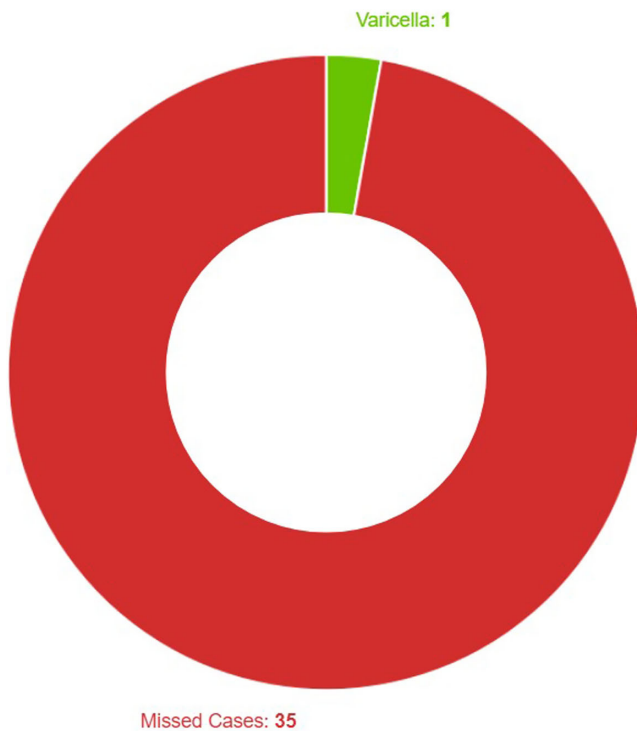


**Figure 1**  
Line graph comparing rates of manual removal (blue line) versus automated EHR removal (orange line) of isolation restrictions over a five-year study period. Following the implementation of automated tools in FY20, there was a significant reduction in the time dedicated by IPs to removing isolation banners with 88% of all isolation statuses being removed automatically by EHR tools.

Build Summary with Summary of Results		
	Pre Intervention	Post Intervention
<b>Lab Orderables</b>	Varicella PCR, Varicella IgM	Varicella PCR, Varicella IgM
<b>Diagnosis Codes Utilized</b>	None	B01, B01.0, B01.1, B01.11, B01.12, B01.2, B01.8, B01.81, B01.89, B01.9
<b>Varicella zoster Cases Captured</b>	3% 36 with Varicella diagnosis 1 case captured by physician call	90% 40 with Varicella diagnosis 32 captured by BPA
<b>HCW Exposure Work Ups Completed</b>	4% 28 cases eligible for exposure 1 case reported for exposure	70% 30 cases eligible for exposure 21 cases reported for exposure
<b>Post BPA Logic Correction: Varicella zoster Cases Captured</b>	N/A	100% 24 with Varicella diagnosis 24 captured by BPA
<b>Post BPA Logic Correction: HCW Exposure Work Ups Completed</b>	N/A	100% 16 cases eligible for exposure 16 cases reported for exposure

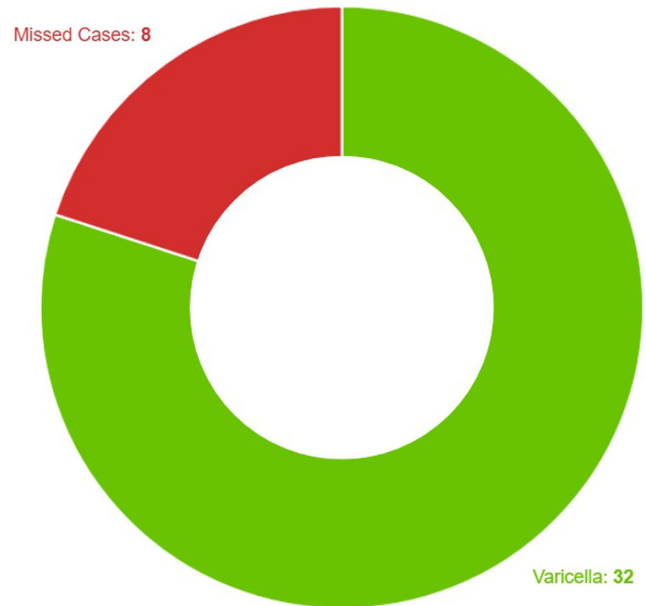
Plan, Do, Study, Act (PDSA) Cycle Summary		
Intervention	Date	Impact
Implemented BPA lookback timeframes of 14 days	November 2022	Reduced erroneous BPA
Correction to logic affecting infection status firing	March 2023	Capture rate 100% after implementation
Excluded problem list diagnosis entries without associated date	March 2023	Reduced erroneous BPA
Creation of provider BPA support for collection, testing and reporting	April 2023	Encourage appropriate testing and reporting

Between 10/24/2021 and 10/23/2022



diagnosis codes related to Varicella zoster (VZV) infection charted by ambulatory care providers. These BPAs function by triggering infection statuses that populate the patient chart and include instructions to front line staff on personal protective equipment (PPE) requirements. These BPAs also trigger real-time notifications to the IP team to determine the validity of the infection status and exposure work-up necessity. Chart reviews of diagnosis codes utilized in pre and post intervention timeframes were completed to understand the impact of the silent BPAs. Percentages of patients captured, and Healthcare Worker (HCW) exposure reviews reported were evaluated to demonstrate effectiveness. Plan, Do, Study, Act (PDSA) was utilized to respond to gaps, increase efficiency, and limit erroneous infection statuses. **Result:** The one-year pre-intervention period revealed 36 total diagnosis codes used for Varicella zoster (VZV) infection; 3% of these infection cases were captured and 4% of eligible cases were reported for HCW exposure review. The one-year post intervention period revealed 40 total diagnosis codes used for VZV infection; 80% of these infection cases were captured and 70% of eligible cases were reported for HCW exposure review. PDSA quality improvement cycles allowed for refinement of the BPA logic that further increased infection cases

Between 10/24/2022 and 10/24/2023



captured to 100% with 100% of eligible cases reported for HCW exposure review. **Conclusion:** Utilizing the EHR, the organization appreciated enhanced identification of patients in real-time with VZV infection that allowed for appropriate mitigation strategies to be implemented. This proactive workflow design helps minimize the risk of transmission between ambulatory and acute settings and facilitated HCW exposure reviews.

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**Diagnosing Pneumonia in the Obese: Are Plain Radiographs Enough?**

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**Introduction:** The obesity pandemic presents numerous challenges in radiography, including patients exceeding the weight limits of imaging equipment, difficulties in palpating anatomical landmarks and inadequate penetration resulting in inaccurate diagnoses and need for repeat imaging resulting in increased radiation exposure. Pneumonia is a common reason for hospitalization, but identifying an infiltrate on the chest radiograph (CXR) in obese patients can be challenging. Conversely, motion artefacts may be misinterpreted as areas of pneumonia resulting in over-diagnosis and consequently the overuse of antibiotics. This study evaluated the diagnostic utility of CXR for identifying pneumonia in obese patients by comparing it with computed tomography (CT scan) performed within 72 hours. We also evaluated the impact on initiation or discontinuation of antibiotics – a very important aspect of antibiotic stewardship. **Methods:** All patients admitted between July 2020 and 2022 with a diagnosis of pneumonia who underwent both CXR and chest CT scan within a 72-hour window were included. Patients were divided into two groups obese and non-obese based on BMI. The results were evaluated to determine the concordance between the two modalities in diagnosing pneumonia, as well as its influence on antibiotic therapy. **Results:** A total of 320