Computerized provider order entry (CPOE) for prostate MRI segmentation can provide standardization when compared to email or verbal-based orders.

The aim of the project is to implement and improve the prostate MRI segmentation orders placed through CPOE in OneConnect from the current state of 0% to 50% within 6 months of implementation.

**Aim Statement**
- Computerized provider order entry (CPOE) for prostate MRI segmentation orders placed through CPOE system vs. email/phone orders at baseline and at defined intervals (monthly/quarterly) post-implementation.
- Apart from the primary process metric of adoption rate, we will monitor order accuracy, clinician satisfaction score, clinician usage rate, turnaround time, regulatory compliance, and revenue capture (monthly/quarterly) post-implementation.

**Measure of Success**
- Adoption Rate - Percentage of prostate MRI segmentation orders placed through CPOE vs. email/phone orders at baseline and at defined intervals (monthly/quarterly) post-implementation.

**Process Analysis Tools**
- Process mapping – to create visual flowcharts of the current and future state processes.
- GEMBA walk to directly observe and follow staff and faculty to gain insights into the actual workflow.
- Cycle time analysis to measure total cycle time from start to end of the process and assess overall efficiency.
- Fishbone diagram to analyze factors influencing the implementation of CPOE for prostate MRI orders.
- Failure modes and effects analysis (FMEA) to systematically evaluate where and how the process can fail and assess the effects.
- Control charts to track key process metrics.

**Data Analysis and Decision Making Tools**
- Trends in fusion biopsies after implementation.

**Interventions**
- Worked with EHR Clinical Ancillaries team to build segmentation order set in Epic for providers. This eliminated the paper-based orders.
- Teamed up with clinical leaders to identify CPT Codes for MR Segmentation. These were then integrated with the billing workflow.
- Coordinated with Revenue Operations and Coding team to build billing processes to capture revenue on the new procedures.
- Educated and trained the APPs, Nurse Practitioners, Urologists, and Radiologists on how to utilize the order set.
- Created a workflow for DI Coordinators on how to process the order and created an order escalation pathway.

**Revenue Enhancement / Cost Avoidance**

<table>
<thead>
<tr>
<th>FISCAL YEAR</th>
<th>TECHNICAL REIMBURSEMENT</th>
<th>PROFESSIONAL REIMBURSEMENT</th>
<th>TOTAL REIMBURSEMENT</th>
<th>OVERALL REIMBURSEMENT RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY20</td>
<td>$48,641.49</td>
<td>$22,506.68</td>
<td>$71,148.17</td>
<td>94.51%</td>
</tr>
<tr>
<td>FY21</td>
<td>$518,995.80</td>
<td>$156,711.28</td>
<td>$675,707.08</td>
<td>97.45%</td>
</tr>
<tr>
<td>FY22</td>
<td>$610,262.01</td>
<td>$186,355.00</td>
<td>$796,617.01</td>
<td>100.00%</td>
</tr>
<tr>
<td>FY23</td>
<td>$547,437.18</td>
<td>$165,242.00</td>
<td>$712,679.18</td>
<td>100.00%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>$1,725,336.48</td>
<td>$530,814.96</td>
<td>$2,256,151.44</td>
<td>97.86%</td>
</tr>
</tbody>
</table>

The revenue generated by the prostate segmentation procedures (Uronav and Artemis) has generated additional revenue from FY20 to FY23, resulting in $2,256,151 dollars of revenue. The overall FY22 and FY23 reimbursement percentage for prostate MRI segmentations lies at 100%. This is an increase from the FY20 reimbursement rate of 94.01%. This is an increase of 6% from FY20. After these methods were implemented, a noticeable rise in revenue was seen. The modification to the workflow has improved revenue earnings and resource use, ultimately reducing delays in the interpretation of MRI data.

**Results**

From June of 2019 to June of 2021 the prostate MRI segmentation orders placed through CPOE in OneConnect increased from 0% to an average of 91.6% (6 month running average). This significantly surpassed the original goal of 50%.

**Conclusion**
- Implementation of CPOE for segmentation of prostate MRI has the potential to standardize and improve quality of care for patients undergoing diagnostic imaging for suspected prostate cancer.
- This project piloted targeted interventions, including optimized order sets, training, and adoption tracking, to successfully integrate CPOE into the clinical workflow and revenue capture.
- Advantages of CPOE over email communication for segmentation of prostate MRI:
  1. Standardization of care
  2. Improved quality and safety
  3. Enhanced communication
  4. Improved efficiency
  5. Better analytics
  6. Higher clinician satisfaction
- Lessons learned informed other institutions seeking to implement CPOE and emerging technologies like AI in medical imaging to optimize the delivery of patient care.