Effectiveness of Palm Vein Recognition Biometric Technology to Prevent Patient Misidentification Errors

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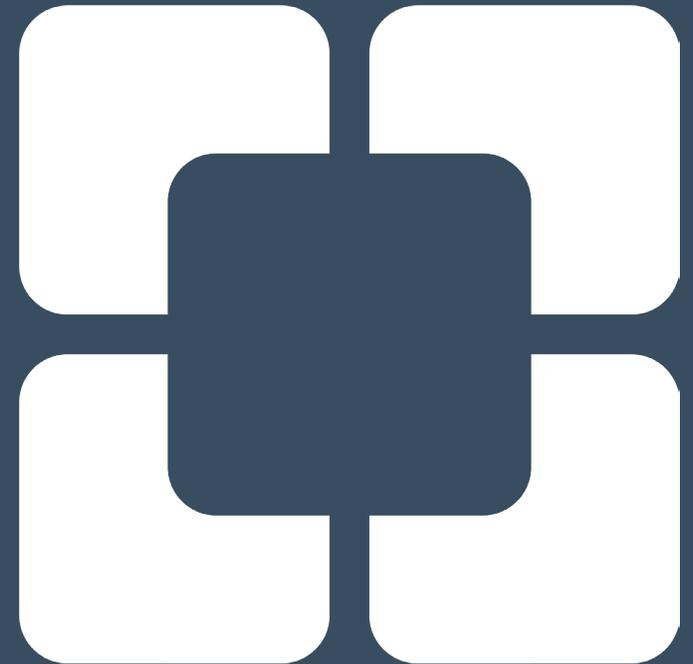
Pilot Parameters

- 4 weeks
- Outpatient imaging only
- Regional hospital
  - Small, controlled environment
  - Quick throughput
  - Cross section of most imaging studies
    - Studies with contrast performed
  - Intermediate volume
  - Patient enrollment & authentication in same encounter

Metrics

Measure	Goal
# Misidentification Errors	0
Consistency a. % enrolled patients not identified when re-scanned b. % patient unable to be enrolled	<2% <3%
Enrollment %	> 80%
Authentication % (Point of Care)	>=90%
Patient experience	Score >=4/5 all questions
Caregiver experience	Score >=4/5 all questions
IT Success Assessment / EMR Integration	Qualitative
Enrollment Time Efficiency: Palm vein recognition device vs Standard process	Observational

Pilot Summary Data

Item	%/Numbers
Total Unique Patients Seen	570
Total Patient Visits (includes repeat visits)	596
Total Exams (8 Unique Modalities)*	759
Total Enrollments (unique patients)	455
Enrollment % (enrolled patients / total unique patients)	80%

*X-ray, CT Scan, MRI, Ultrasound, Mammogram, Bone Density, Nuclear Medicine, Flouroscopy

Pilot Summary Data

Item	Percent/Number
Authentication % (Point of Care)	75% (369)
Percentage of Enrolled Patients who enrolled on 1st Visit	99.6% (453)
% Enrolled Patient with Repeat Encounters	3.5% (16)
% Repeat patients who were re-authenticated at the front desk	88% (14)
% Repeat patients who were re-authenticated at the POC	50% (8)
⭐ % Accurate identification of re-authenticated repeat patients (front desk & POC)	100%

Overall Metric Assessment

Measure	Goal	Actual	Rating
# Misidentification Errors	0	0	🟢
Consistency a. % enrolled patients not identified when re-scanned	<2%	3%	🟡
b. % patient unable to be enrolled	<3%	1.5%	🟢
Enrollment %	> 80%	79%	🟢
% Authentication Point of Care	>=90%	75%	🟠
Patient experience	Score >=4 all questions	4.1	🟢
Caregiver experience	Score >=4 all questions	3.5	🟡
IT Success Assessment / EMR Integration	Qualitative Measures	See Qualitative IT Scorecard	🟢
Enrollment Time Efficiency: Palm vein recognition device vs Standard process	Observational	>Time Palm vein recognition device vs Standard	🟡

Key Takeaways-Quality & Safety

- Safe
- Accurate
- Consistent
- Enrollment % nearly at target
- Authentication % below target

Key Takeaways-Experience

- Excellent to very good overall patient experience scores

- Very Good to good overall caregiver experience scores

- Better scores for "extremely private" & "extremely safe" questions with Palm vein recognition device vs Standard

Key Takeaways-Demographics

- Nearly all who enrolled did on 1st visit
- Females and Males decline at equal %
- Younger age groups declined at a 2X higher % than older
- Majority of declines "not interested"
- Very few declined due to COVID/Health concerns

Key Takeaways-Operations

- Increase time for Palm vein recognition device enrollment
  - Equal or less time at point of care
  - As we enroll more$\rightarrow$ less time at front desk
- "Green light" ease of EMR integration