Positive Patient Identification for Healthcare

The Future of Patient Identification is Here Today

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VP-Sales, PatientSecure
Agenda

• Introduction

• Accurate Patient Identification – How hard can it be?

• Biometric Primer

• The Science Behind Palm Vein Biometrics

• Demonstration

• Tales from the Front Lines – Successful Hospital Use Cases

• Q & A
Who is Imprivata & What is PatientSecure?

• Lexington, MA – (OneSign SSO; ConfirmID-EPCS, Cortext)
• PatientSecure Division - Tampa, FL
• Leading healthcare technology company
  - PS Founders have extensive experience (75+ years) in Healthcare Revenue Cycle
  - Industry leader in biometric Positive Patient Identification Management Systems (PPIMS)
• HIS/PMS platform agnostic
• Fujitsu’s exclusive PPID partner in North America
Bon Secours Health System
Bon Secours – Greenville, SC Publicity (2/2014)

- Bon Secours Health System & Imprivata PatientSecure featured ABC & Fox in Greenville, SC
- Bon Secours Health System sharing front page headlines with the Super Bowl results
Patient Identification
How Hard Can it Be?
Why can patient identification be so difficult?

- **3,428,925**: Number of patients in the Harris Health System’s database
- **249,213**: Number of times when two or more patients share the same last and first names
- **69,807**: Number of times when two or more patients share the same last and first names, and date of birth
- **2,488**: Number of patients named Maria Garcia
- **231**: Number of Maria Garcia’s with the same DOB

Source: Harris Health System Press Release
Industry Benchmarks for Hospitals

- RAND Study - 7-10% of patients are misidentified during health record searches and that 6% of identification errors result in an adverse event.

- AHIMA Study - Average duplicate health record rate is between 8 – 12%. 40% of all records have blank or default values in one of the key data fields of first name, last name, date of birth, gender, or Social Security Number.

- Johns Hopkins Study - 92% of the patient identification errors resulting in duplicate health records were caused by inpatient registration mistakes.

- The Advisory Board report that the average 250-bed hospital lost more than $7M in 2013 because of inaccurate and incomplete documentation.

- An estimated 2.3 million individuals were impacted by medical identity theft in 2014. The average out-of-pocket cost of a single identity theft incident is $13,450.

Six Sigma is < 3.5 errors per 1,000,000 cases.

Healthcare is currently experiencing approx. 4,000-6,000 patient safety errors per 1,000,000 cases.
## Medical Errors from Misidentification

<table>
<thead>
<tr>
<th>Type of Event</th>
<th>Total Medical Errors from Misidentification</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrong-Patient Wrong Site/Procedure</td>
<td>5% of all wrong patient/wrong site/procedure surgery results from misidentification</td>
<td>US Dept of Health &amp; Human Services</td>
</tr>
<tr>
<td>Medication Errors</td>
<td>29% of medication errors result from misidentification</td>
<td>Patient Safety Authority &amp; NCBI</td>
</tr>
<tr>
<td>Radiation Overdose</td>
<td>27% of all radiation errors result from misidentification</td>
<td>PA Dept of Env. Protection, NY Times</td>
</tr>
<tr>
<td>Transfusion Errors</td>
<td>850 medical errors &amp; 20 deaths from misidentification</td>
<td>Clinical Journal of Nursing &amp; AP Press</td>
</tr>
<tr>
<td>Radiology Errors</td>
<td>30% of radiology errors result from misidentification</td>
<td>PA Safety Authority</td>
</tr>
<tr>
<td>Laboratory Errors</td>
<td>69% of all laboratory errors result from misidentification</td>
<td>VA Study &amp; BBI Study</td>
</tr>
<tr>
<td>Infant Discharge to Wrong family</td>
<td>100% resulted from misidentification</td>
<td>Joint Commission</td>
</tr>
</tbody>
</table>
Manual patient identification results in:

- Duplicate medical records
- Medical record Overlay
- Identity theft & insurance fraud
Misidentification creates clinical and financial risk

Patient Harm

Loss of revenue

Unhappy patients

Improving patient identification is the Joint Commission’s & National Patient Safety Foundation’s #1 goal for hospitals
The Accuracy of Biometric Technologies

Biometric Technologies are 100% accurate.

True or False
The Accuracy of Biometric Technologies

Biometric Technologies are 100% accurate.

False
Biometric Accuracy Measurement

**F.A.R. – False Acceptance Rate**

the probability that the system incorrectly matches the input pattern to a non-matching template in the database

**F.R.R. – False Rejection Rate**

the probability that the system fails to detect a match between the input pattern and a matching template in the database
Other Biometric Terminology

F.T.E. – Failure to Enroll Rate
the rate at which attempts to create a template from an input is unsuccessful

Template Capacity
the maximum number of sets of data that can be stored in the system
Biometric Modalities – Accuracy vs. Usability

- Voice Pattern: High Usability, Low Accuracy
- Palm Vein: High Usability, High Accuracy
- Iris/Retina: High Usability, High Accuracy
- Facial Configuration: High Usability, High Accuracy
- Signature: Low Usability, High Accuracy
- Hand Geometry: Low Usability, High Accuracy
- Hand of the hand / Finger Vein: Low Usability, Low Accuracy
- Fingerprint: High Usability, Low Accuracy

Accuracy vs. Usability Graph
Other Biometric Terminology

Enrollment (Add a Patient)
- confirm identity through best available means
- select unique identifier(s)
- capture unique biometric template

Authentication (Identify Patient)
- employ biometric sensor with dual factor
- acquire real-time biometric template from patient
- Compare template to enrollment information stored in database
Assuring Biometric Accuracy

2-Factor Authentication

• the healthcare environment demands the highest level of accuracy to maximize patient safety
• recommended by JCAHO, NPSF, Red Flag, etc.
• easy to acquire, non-obtrusive (ex. DOB)

Targeted Search Algorithm

• Example – finding a book in a library via sequential search vs. Dewey Decimal System
Targeted Search Algorithm
Imprivata PatientSecure

Palm Vein Biometrics
Did you know that the vein pattern in the palm of your hand is over 100x more unique than your fingerprint?
Uniqueness of Palm Vein Biometrics

Visible light

Near-infrared light

Extracted vein pattern
Palm vein recognition biometrics

The most adopted biometrics for positive patient identification in the U.S.

Highly accurate, unique, and stable

Virtually 100% of the patient population can use the technology

High patient adoption; non-intrusive, easy-to-use, and stigma-free
Identify John / Jane Doe’s in the ED

The system is totally portable and can be used on mobile carts (WOWs) in the Emergency Department.
Imprivata PatientSecure

Product Demonstration
Biometric patient identification platform

Biometric enrollment creates a 1:1 link to Patient’s Medical Record

Securely and accurately identifies patients through biometrics

Retrieves the correct record from appropriate clinical systems

Imprivata PatientSecure is embedded in hospital information system’s workflow
Strongest Integrations on Market

- Epic
- Imprivata
- Cerner
- McKesson
  - HealthQuest, STAR, Paragon, Practice Plus
Imprivata PatientSecure PVS units

1. Ease of use by patients in healthcare environment (registration, patients in wheelchair, bedside, triage, etc.)

2. Designed to assist patients with consistence hand placement
Imprivata PatientSecure PVS units

1. Make a five with your right hand and place it flat with your fingers apart on the palm vein scanner.

2. Move your hand all the way forward until your hand is stopped by the finger divider posts.
Imprivata PatientSecure Demonstration
Imprivata PatientSecure

Hospital Tales from the Front Lines
Market leader – trusted by millions

- Market leader in positive patient identification using biometrics since 2008

65 health systems
350+ hospitals
2,500+ clinics
10k+ palm vein scanners deployed
8m+ patient identities

50k+ patient identifications per day

every 2 seconds there’s a successful patient identification with Imprivata PatientSecure
Imprivata PatientSecure manages 9 million+ patient identities
# Health system questionnaire

Every hospital has concerns of varying degrees with some or all of the following issues. Could you please rank the importance of improving each:

<table>
<thead>
<tr>
<th>Issue</th>
<th>High</th>
<th>Med</th>
<th>Low</th>
<th>NA</th>
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<tbody>
<tr>
<td>Patient safety</td>
<td>☐</td>
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<td>EMR chart accuracy</td>
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<td>Duplicate / Overlaid medical records</td>
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<tr>
<td>Medical identity theft</td>
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<td>Insurance card sharing / fraud</td>
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<tr>
<td>Expediting patient access</td>
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<tr>
<td>Improving patient experience</td>
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<td>Simplifying patient check-in (kiosk)</td>
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<tr>
<td>Competitive differentiation</td>
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<tr>
<td>Technology leader</td>
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Patient Safety is #1 for the CEO

Marcy Feit
Chief Executive Officer

“Improper patient identification can have tragic consequences. Conversely, a dependable patient identification method such as Imprivata PatientSecure has the reverse effect. Patients feel much safer and fraud and identity theft are averted.”
Dr. Roger Ray  
Chief Medical Officer  

“There is great importance in properly identifying the patient. If there is a main benefit from the [Imprivata PatientSecure] system, it will be in helping us avoid patient errors. Carolinas HealthCare Systems uses this technology to ensure that the right care is provided to the right person.”
Customer – Carolinas Healthcare System

Duplicate medical record rate reduced from 4% to:

0.11% of their patient census

Better than national average by:

50+x

Source: Craig Richardville's testimony before the Senate Committee on Health, Education, Labor and Pensions on June 10, 2015.
The real cost of chart overlays

FY13 time/cost study - EHR Correction team completed 51 chart corrections

- Staff involved in chart corrections include: HIM, Epic, Interface analysts, EHR Policy Committee members and clinical operations.
- Potential hours/dollars (based on averages) saved by proper patient identification: FTE’s - 3.38; Hours – 7,038;
- Annual Cost/Salary - $348,694; Salary + Benefits - $435,868

Average of 138 hours per case
Average of $8,546 per case
Customer – BayCare Health System

Achieved virtually **zero** overlays

improved patient satisfaction
Benefits for BayCare Health System

Lindsey Jarrell
Chief Information Officer

• “In addition to patient safety, our principal drive [in implementing Imprivata PatientSecure] was cost avoidance [from lawsuits] by eliminating duplicate records and the potential for medical record overlays. One negative outcome for one patient due to a medical record overlay can easily cost our health system millions of dollars.”
Duplicate Medical Record Reduction

**BayCare Health System**

- Experienced a 42% reduction in Duplicate Medical Records!
- $30,300 - 17,633 = 12,667$ less duplicate records
- Full Cost of FTE = $18.75/hour
- Time needed to research and merge = 40 minutes/record
- Cost to correct = $12.50/record
- **Total Cost savings in 1st year = $168,337.60**
- **Total Cost savings since June, 2008 = $500,000.00+**

**University Medical Center – El Paso**

- Duplicates / July 2008 – 3,213
- Duplicates / April 2011 – 4,346
- Duplicates / July 2011 – 7,963
- UMC-EP FTE – $16.30/hour totally dedicated to clean-up
- Contract FTE – $9.00/hr. for 4 months = $5,760
- Total Expense – $43,732
- 58 minutes / Dup MR merge
- $17.65 / correction
- **Total cost of correcting 7,963 records = $140,647 in 1 month**
Improve chart accuracy and fraud prevention

“The impact has been lower fraud and abuse, although it’s not something we can really quantify. Our duplicate records have plummeted to near zero.”

Tim Tindle
Corporate, CIO

• 3,428,925: # of patients in the database
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• 76,354: # of times when five or more patients share the same first and last name
• 69,807: # of times when two or more patients share the same first and last name and date of birth
• 2,488: # of patients named Maria Garcia
• 231: # of Maria Garcia’s sharing the same date of birth

Source: Harris Health System Press Release
Enhanced patient experience

“The feedback from the patients about Imprivata PatientSecure has been extremely positive. The compliance rate of our patients has been 99%. They love it! They think this is the greatest thing we have ever done. They really appreciate not having to give all that personal information each time that they come into the hospital.”

Jim Schwamb
VP – Patient Financial Services

BayCare Health System
Biometric Workflow in Radiation Oncology

ARIA® Oncology Information System

MOSAIQ® Radiation Oncology Information System
Radiation Oncology Check-in
PatientSecure Reader at Treatment Machine with custom made platform

Queue at Treatment Machine with cursor placement for MRN feed

Appointment Tracker view for patient identification
Results for Montefiore the University Hospital

- In clinical use since December 2013
- The accuracy for the match is 100%
  - We have not had a single patient misidentified
- Over 95% of the patients learn the correct methodology (hand placement) on the first try
- Our test patient QA procedures have proved that the correct patient is identified each and every time
Positive publicity

Imprivata PatientSecure & NYU-Langone Hospital highlighted on ABC, CBS, and over 200 websites
“When a simple biometric device can ensure patient safety, prevent fraud and improve billing, it’s absolutely worth considering.”

Michael McBride, Editor in Chief
Health Management Technology
Thank you!

Questions?

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ACT

Securely and conveniently