2016 National Patient Misidentification Report

Independently conducted by Ponemon Institute LLC

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2016 National Patient Misidentification Report

Ponemon Institute, December 2016

Part 1. Introduction

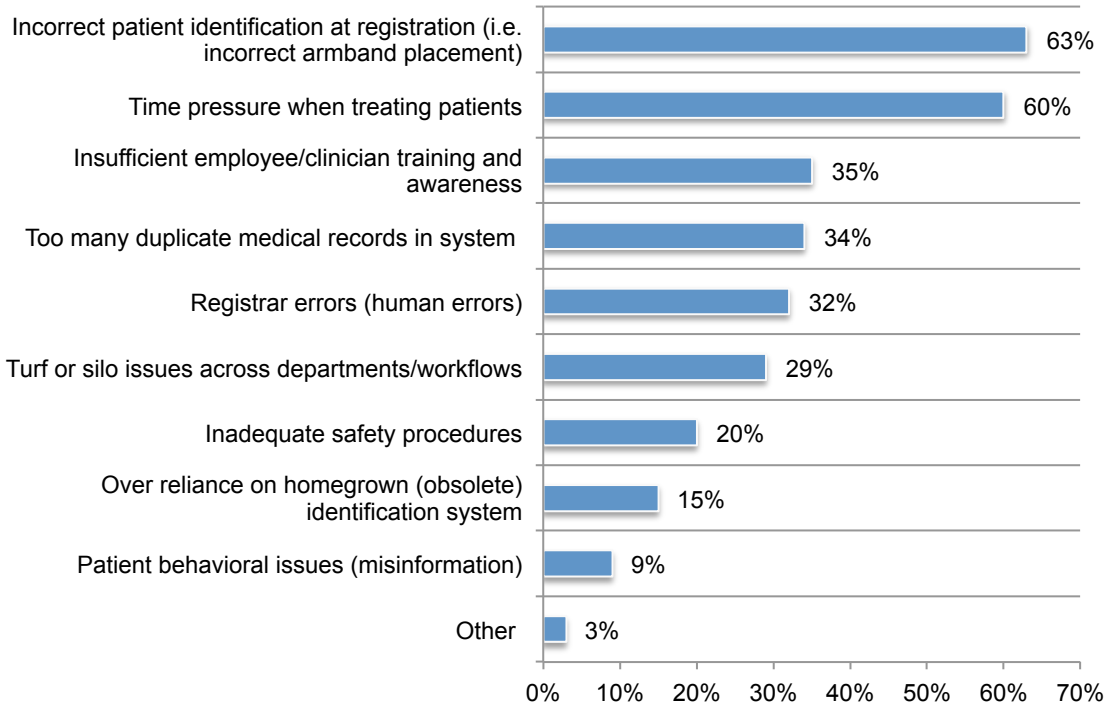
A serious problem in healthcare organizations is patient misidentification, which results in medical errors, financial loss, loss in clinical productivity and a negative impact on the patient experience.

In the *2016 National Patient Misidentification Report* of nurses, physicians, and IT practitioners[1], we examine the frequency and root causes of patient misidentification and its impact on patient safety and experience[2]. We also surveyed CFOs and others in financial operations to determine the financial consequences of denied claims due to patient misidentification. A total of 503 individuals participated in this research from a range of facilities across the U.S.

Patient misidentification is far too common. The primary root cause of patient misidentification is incorrect identification of patients at registration, according to 63 percent of respondents. As a result, hospitals and patients suffer significant consequences.

Figure 1. The primary root causes of patient misidentification

Three responses permitted



[1] The roles and function of respondents is shown in the Appendix of the full report.

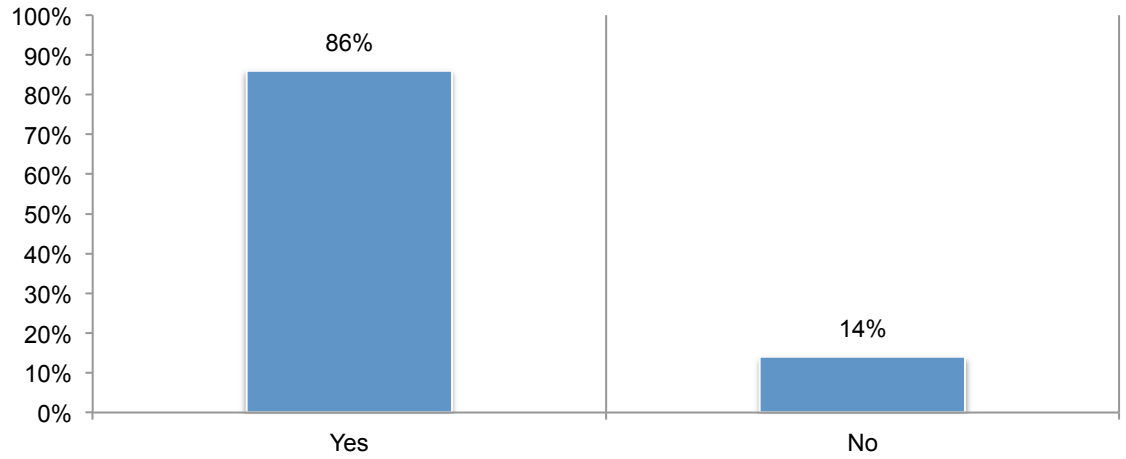
[2] A *near miss* is an incident or condition that could have resulted in harm to a patient, an *adverse event* is an undesirable experience that may have led or could have resulted in harm to a patient; and *sentinel event* is an unexpected occurrence involving death or serious physical or psychological injury and requires immediate investigation.

How serious is the clinical impact?

Eighty-six percent of respondents say they have witnessed or know of a medical error that was the result of patient misidentification. Difficulty finding charts or medical records and finding duplicate medical records for a patient contributes to errors. Sixty-seven percent of respondents say that when searching for information about a patient, they find duplicate medical records for that patient almost all the time.

Seventy-seven percent of respondents agree that positive patient identification through biometrics could reduce overall medical errors by reducing patient misidentification.

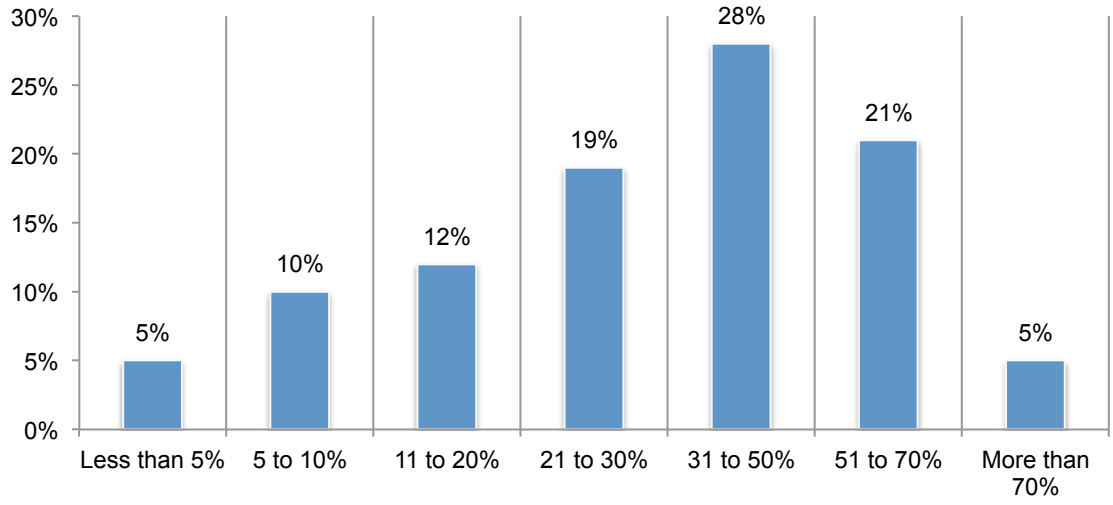
Figure 2. Have you ever witnessed or known of a medical error that was the result of patient misidentification?



How serious is the financial impact?

In addition to patient safety and experience risks from making mistakes, healthcare organizations are losing money because of denied claims connected with patient misidentification. An analysis of costs associated with the denial of claims due to patient misidentification is provided in Appendix 2 of this report. On average, respondents say that 35 percent of all denied claims result directly from inaccurate patient identification or inaccurate/incomplete patient information, costing the average healthcare facility $1.2M/year. Seventy-six percent of respondents say that positively identifying a patient at registration through biometrics could reduce denied claims.

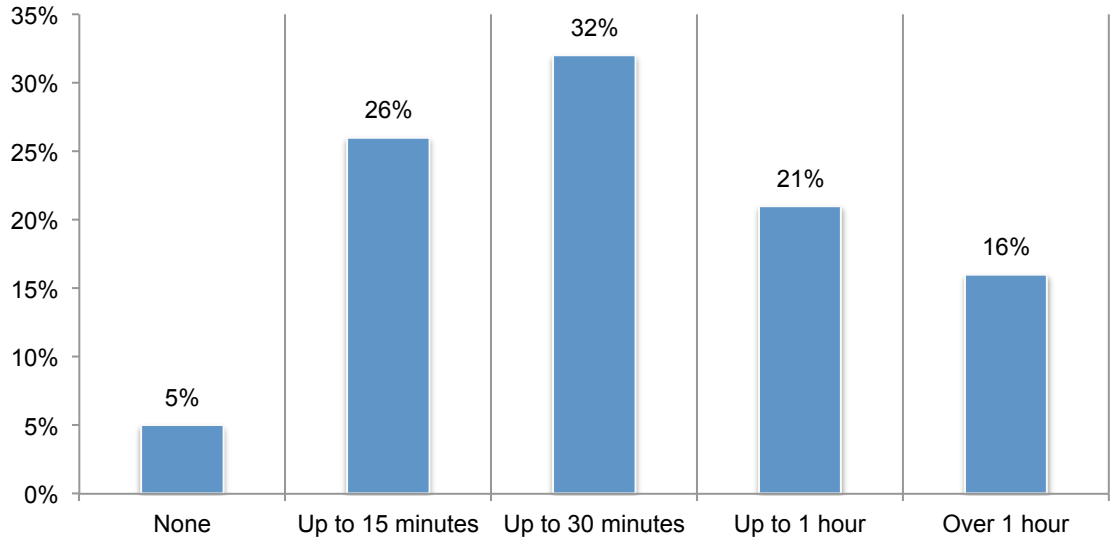
Figure 3. Denied claims due to inaccurate patient identification or inaccurate/incomplete patient information?



What is the impact on the patient experience?

Lastly, the patient care experience is also impacted through misidentification as it results in delays of care and other negative consequences. Sixty-nine percent of respondents agree that up to or more than 30 minutes per shift are spent contacting the medical records or HIM department to get critical information about their patients. This is a productivity hit for healthcare, which also impacts the speed with which patient care is provided.

Figure 4. Total time spent contacting the medical records department or HIM department to get missing or incomplete records



Key takeaways from this study include the following.

Misidentification starts at the beginning of the patient's experience, at registration. Most misidentification occurs during patient registration for a procedure (63 percent of respondents).

Patient misidentification can lead to medical errors and patient safety risks. Eighty-four percent of respondents strongly agree or agree that misidentifying a patient can lead to medical errors or adverse events.

What leads to patient misidentification? According to 64 percent of respondents, a patient is misidentified in a "typical" healthcare facility very frequently or all the time. The following errors are very common in most healthcare facilities.

- Inability to find a patient's chart or medical record (68 percent of respondents)
- A search or query resulting in multiple or duplicate medical records for that patient (67 percent of respondents)
- A patient is associated with an incorrect record because of the same name and/or date of birth (56 percent of respondents)
- The wrong record is pulled up for a patient because another record in the registration system or EMR has the same name and/or date of birth (61 percent of respondents)

Correcting or getting additional patient information contributes to delays in patient care. Also putting patients at risk is the inability to quickly get information that is missing from, or incomplete in, patient records. According to 37 percent of respondents, an hour or more is spent contacting the medical records or HIM department to get critical information about their patients.

Misidentification leads to denied medical claims and lost revenue. The process of patient identification during registration can be cumbersome and challenging and can result in unintended duplicate medical records, overlays caused by typing errors or miscommunication or incomplete patient information. Such errors can result in denied claims**.**

On average, hospitals have 30 percent of all claims denied and an average of 35 percent of these denied claims are attributed to inaccurate patient identification or inaccurate/incomplete patient information.

The most common root cause is incorrect patient identification at registration such as an incorrect armband placement followed by reliance on homegrown or obsolete identification systems.

Part 2. Key findings

In this section, we provide an analysis of the research. The complete audited findings are presented in the Appendix of the report. We have organized the report according to the following topics.

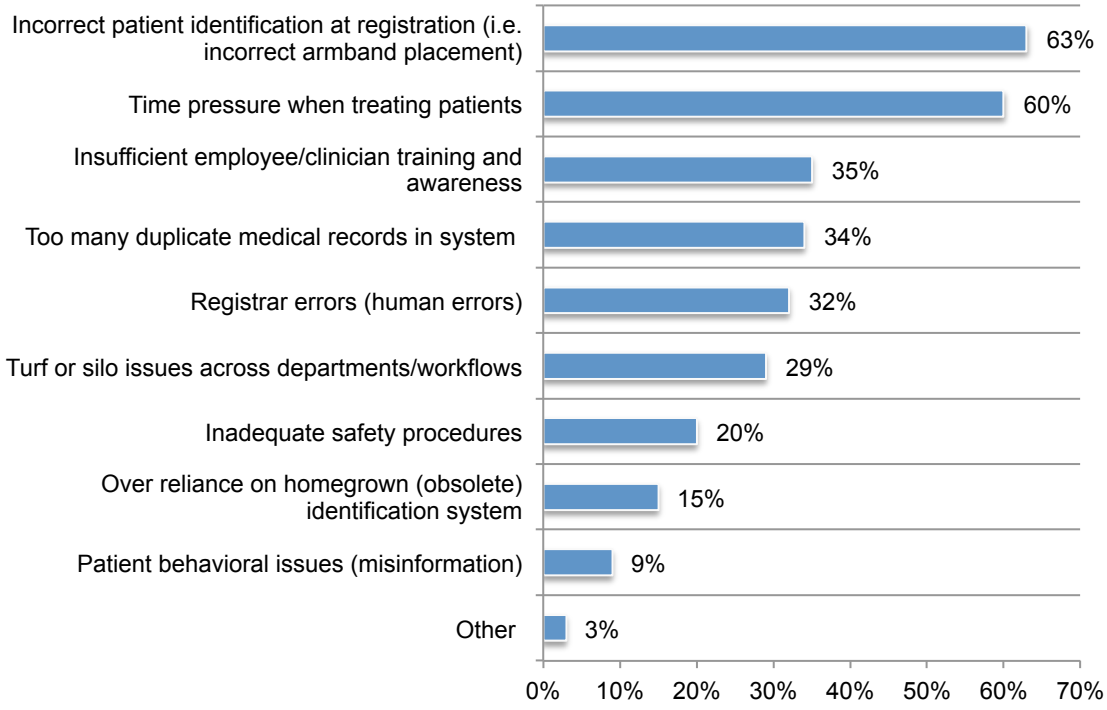
- The causes and consequences of patient misidentification
- The financial consequences of patient misidentification
- Solutions to the risk of patient misidentification

The causes and consequences of patient misidentification

Most patient misidentification starts at registration. Eighty-four percent of respondents strongly agree or agree that misidentifying a patient can lead to medical errors or adverse events. These include a near miss, sentinel event or even death.

Figure 5 shows the common causes of patient misidentification. Most misidentification occurs when the patient is being registered for a procedure (63 percent of respondents). Another primary cause for errors is the time pressure faced by nurses, physicians and physicians assistants experience when treating patients (60 percent of respondents).

Figure 5. The primary root causes of patient misidentification
Three responses permitted

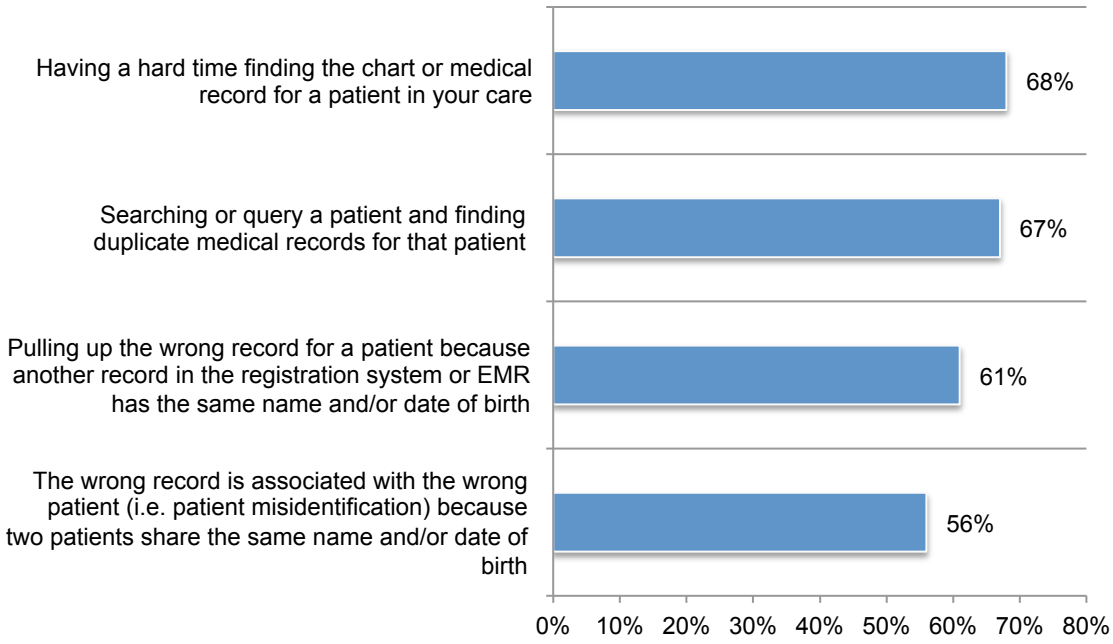


What leads to patient misidentification? According to 64 percent of respondents, a patient is misidentified in the "typical" healthcare facility very frequently or all the time. As shown in Figure 6, the following errors are very common in most healthcare facilities.

- Inability to find a patient's chart or medical record (68 percent of respondents)
- A search or query that results in multiple or duplicate medical records for that patient (67 percent of respondents)
- A patient is associated with an incorrect record because of the same name and/or date of birth (56 percent of respondents)
- The wrong record is pulled up for a patient because another record in the registration system or EMR has the same name and/or date of birth (61 percent of respondents)

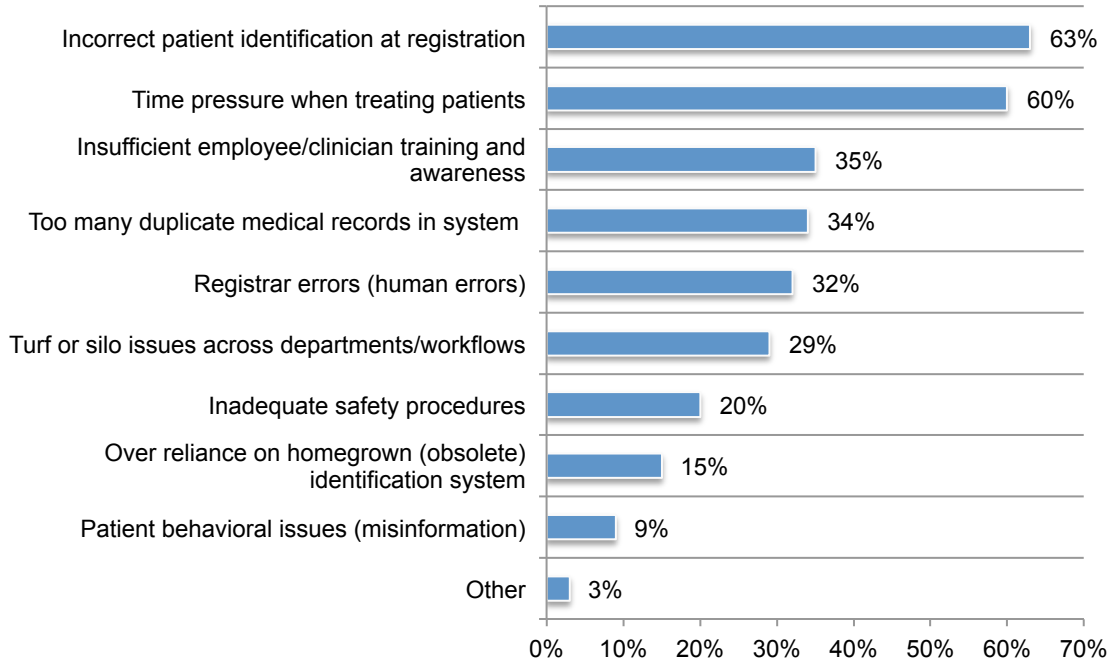
Also putting patients at risk is the inability to quickly get information that is missing from, or incomplete in, patient records. According to 37 percent of respondents, up to an hour or more than one hour is spent contacting medical records or HIM department to get critical information about their patients.

Figure 6. What leads to patient misidentification?
On a scale of 1 = never happens to 10 = happens all the time (7+ responses reported)



Research points to the need to improve the accuracy of patient registration. As part of this research, we surveyed CFOs and individuals involved in healthcare facilities' revenue cycles. As in the case of clinicians, the most common root cause is considered incorrect patient identification at registration, such as an incorrect armband placement followed by reliance on homegrown or obsolete identification systems, according to Figure 7.

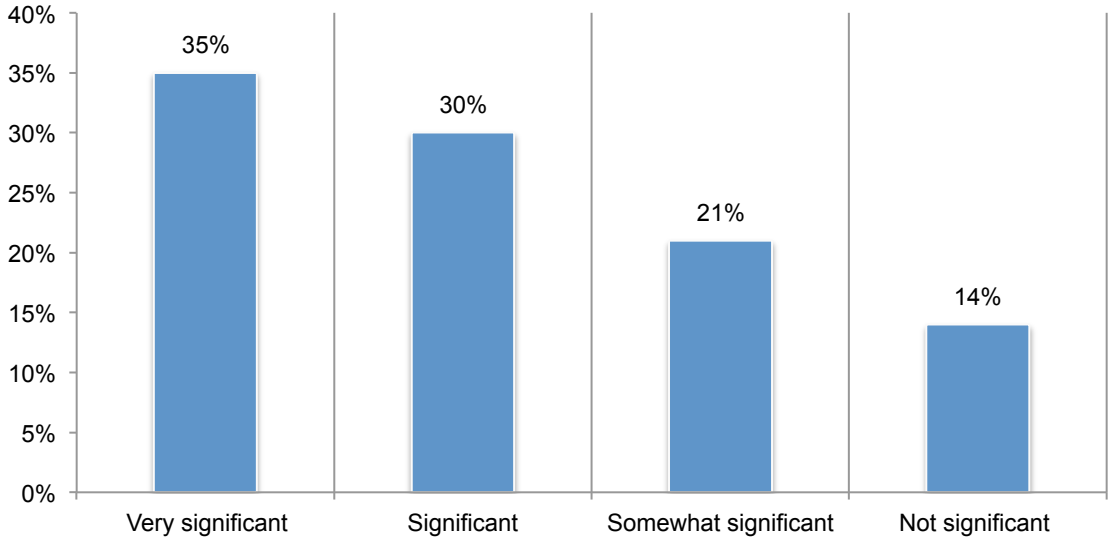
Figure 7. The primary root causes of patient misidentification
Three choices permitted



Denied claims from providing wrong patient information cost healthcare organizations. The patient identification process at registration can be cumbersome and challenging and can result in unintended duplicate medical records and overlays caused by typing errors or miscommunication. Such errors may lead to denied claims**.**

According to Figure 8, 65 percent of respondents involved in the financial aspects of healthcare organizations believe denied claims have a very significant or significant impact on accounts receivable. On average, hospitals have 30 percent of all claims denied and an average of 35 percent of these denied claims are attributed to inaccurate patient identification or inaccurate/incomplete patient information.

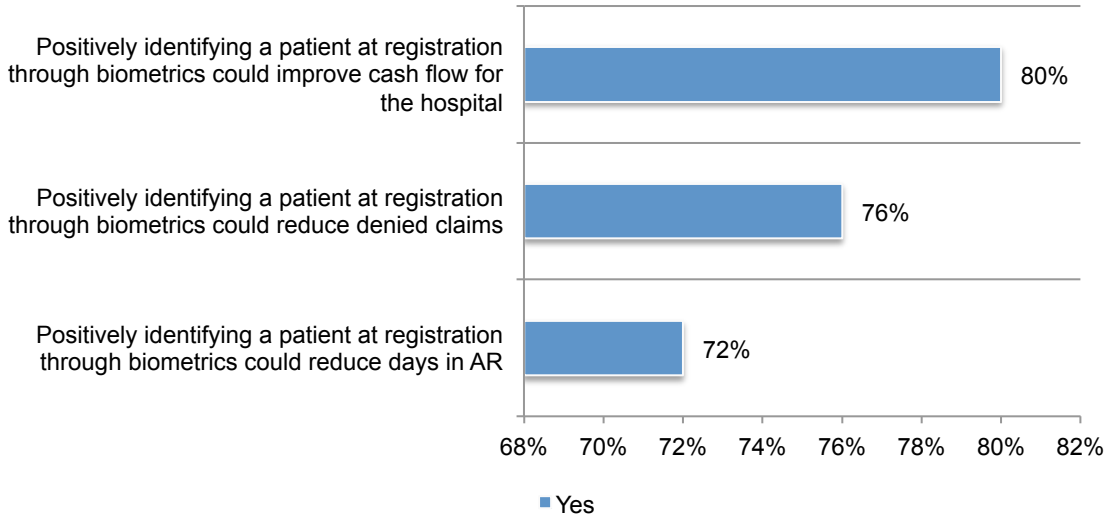
Figure 8. How significant do you believe denied claims from patient misidentification have on the hospital's accounts receivable?



The use of biometrics can ensure proper patient identification. Seventy-two percent of respondents believe positively identifying a patient at registration through biometrics could improve cash flow for their hospitals, as shown in Figure 9.

Using biometrics to positively identify a patient at registration could reduce denied claims (76 percent of respondents) by an average of 25 percent. Moreover, it could also reduce the average number of days in accounts receivable by an average of 22 percent. As a result of reducing denied claims, 80 percent of respondents say their hospital's cash flow could improve by an average of 25 percent.

Figure 9. The financial benefits of positive patient identification
Yes responses



Addressing the weakest links in patient identification. This unique study of more than 500 top-level healthcare executives and care providers in the United States reveals the weakest links in the patient identification process and its impact on patient safety and the bottom line of hospitals.

In addition to the problem of misidentification during the registration process, healthcare providers face the challenge of finding a chart or encountering multiple, conflicting records for a single patient.

Following are recommendations for addressing these problems.

- If the healthcare facility is overly reliant on homegrown identification, the business case can be made of the need to invest in technologies, such as biometrics, to increase the accuracy of patient information. As revealed in this study, the savings that can be realized will justify such investments.
- Assess and analyze the vulnerabilities in the patient registration process. Based on the assessment, implement procedures that will reduce these vulnerabilities
- Conduct clinician and administrator training and awareness programs that address the common errors made in patient registration and other tasks related to ensure the correct care is delivered to the right patient.

Part 3. Methods

A sampling frame composed of 9,760 nurses, physicians and IT practitioners was selected for participation in this survey. As Table 1 shows, 598 respondents completed the survey. Screening removed 95 respondent surveys. The final sample included 503 respondent surveys (for a 5.2 percent response rate).

Table 1. Sample response	Freq	Pct%
Total sampling frame	9760	100.0%
Total returns	598	6.1%
Rejected surveys	95	1.0%
Final sample	503	5.2%

As shown in Figure 10, almost half of the respondents (49 percent) described the organization they work at as a large integrated health system. Twenty-four percent of respondents reported working at a standalone hospital followed by 19 percent of respondents who reported working at an office practice or clinic.

Figure 10. Type of organization where respondents work

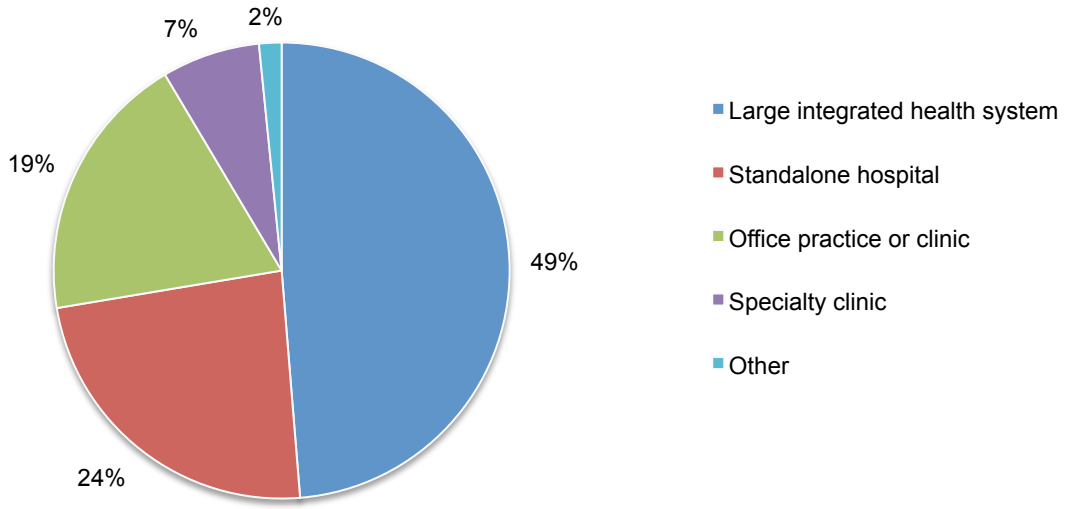
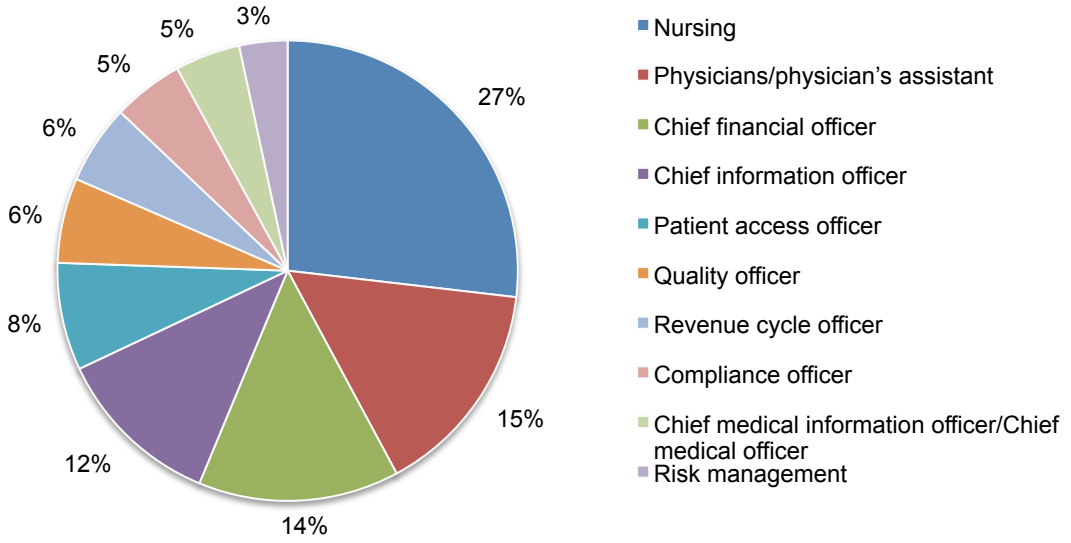


Figure 11 displays the survey respondents' functional area or role within their respective organizations. As can be seen, 27 percent of respondents described their position or role as nursing, which includes chief nursing officer, nurse practitioner and registered nurse. Fifteen percent of respondents indicated their position as physician or physician's assistant. Fourteen percent of respondents described their role as a chief financial officer or finance and accounting leadership team member. Finally, 12 percent referred to their role as chief information officer or IT operations leadership team member.

Figure 11. Functional area best describes the respondents' position or role within the organization



Part 4. Caveats

There are inherent limitations to survey research that need to be carefully considered before drawing inferences from findings. The following items are specific limitations that are germane to most web-based surveys.

Non-response bias: The current findings are based on a sample of survey returns. We sent surveys to a representative sample of individuals, resulting in a large number of usable returned responses. Despite non-response tests, it is always possible that individuals who did not participate are substantially different in terms of underlying beliefs from those who completed the instrument.

Sampling frame bias: The accuracy is based on contact information and the degree to which the list is representative of individuals who are nurses, physicians or IT practitioners. We also acknowledge that the results may be biased by external events such as media coverage. We also acknowledge bias caused by compensating subjects to complete this research within a specified time period.

Self-reported results: The quality of survey research is based on the integrity of confidential responses received from subjects. While certain checks and balances can be incorporated into the survey process, there is always the possibility that a subject did not provide accurate responses.

Appendix 1: Detailed Survey Results

The following tables provide the frequency or percentage frequency of responses to all survey questions contained in this study. All survey responses were captured in August and September of 2016.

Survey response	Freq	Pct%
Total sampling frame	9760	100.0%
Total returns	598	6.1%
Rejected surveys	95	1.0%
Final sample	503	5.2%

Part 1. Screening questions

S1. What best describes the organization(s) at which you work? Please select all that apply.	Freq	Pct%
Large integrated health system	245	49%
Standalone hospital	119	24%
Office practice or clinic	96	19%
Specialty clinic	35	7%
Other (please specify)	8	2%
None of the above (stop)	0	0%
Total	503	100%

S2. What one functional area best describes your position or role within the organization?	Freq	Pct%
Chief medical information officer (CMIO)/Chief medical officer (CMO)	23	5%
Physicians/physician's assistant	77	15%
Nursing (chief nursing officer, nurse practitioner, registered nurse)	135	27%
Risk management	17	3%
Quality officer	30	6%
Compliance officer	25	5%
Patient access office	38	8%
Chief information officer (IT operations leadership team)	59	12%
Revenue cycle office [Go to Part 3]	28	6%
Chief financial officer (finance and accounting leadership team) [Go to Part 3]	71	14%
None of the above [Stop]	0	0%
Total	503	100%

Part 2: Adverse Events during Patient Encounters

Q1. Misidentifying a patient can lead to medical errors or adverse events.	Pct%
Strongly agree	45%
Agree	39%
Unsure	11%
Disagree	5%
Strongly disagree	0%
Total	100%

Q2. How frequently do you care for a patient and have a hard time finding their chart or medical record?	Pct%	
1 or 2 Never happens	2%	
3 or 4	10%	
5 or 6	20%	
7 or 8	26%	
9 or 10 Happens all the time	42%	
Total	100%	7+ response
Extrapolated average	7.42	68%

Q3. How frequently do you search or query for a patient and find multiple (duplicate) medical records for that patient?	Pct%	
1 or 2 Never happens	5%	
3 or 4	12%	
5 or 6	16%	
7 or 8	33%	
9 or 10 Happens all the time	34%	
Total	100%	7+ response
Extrapolated average	7.08	67%

Q4. During an average shift, what is the **total** time you spend contacting the medical records department or HIM department to get missing or incomplete records for your patient(s)?	Pct%
None	5%
Up to 15 minutes	26%
Up to 30 minutes	32%
Up to 1 hour	21%
Over 1 hour	16%
Total	100%

Q5. What is the likelihood that the wrong record is associated with the wrong patient (i.e. patient misidentification) because two patients share the same name and/or date of birth?	Pct%	
1 or 2 Never happens	3%	
3 or 4	9%	
5 or 6	32%	
7 or 8	25%	
9 or 10 Happens all the time	31%	
Total	100%	7+ response
Extrapolated average	6.94	56%

Q6. How often do you believe the wrong record may be pulled up for a patient because another record in the registration system or EMR has the same name and/or date of birth?	Pct%	
1 or 2 Never happens	3%	
3 or 4	15%	
5 or 6	21%	
7 or 8	29%	
9 or 10 Happens all the time	32%	
Total	100%	7+ response
Extrapolated average	6.94	61%

Q7. How frequently do you believe a patient is misidentified in the "typical" healthcare facility?	Pct%	
1 or 2 Never happens	3%	
3 or 4	9%	
5 or 6	24%	
7 or 8	31%	
9 or 10 Happens all the time	33%	
Total	100%	7+ response
Extrapolated average	7.14	64%

Q8. Have you ever witnessed or known of a medical error occur that was the result of patient misidentification?	Pct%
Yes	86%
No	14%
Total	100%

For questions Q12, 13a, Q14a and Q15a, please use the following likelihood scale:

1 = 1 in more than 100,000 patients
2 = 1 in 100,000 patients
3 = 1 in 10,000 patients
4 = 1 in 1,000 patients
5 = 1 in 100 patients
6 = 1 in 10 patients
7 = 1 in 5 patients
8 = 1 in less than 5 patients

Q9. What percentage of **patient encounters** do you estimate result in the following unexpected events?	Mean likelihood
Near miss	7.08%
Adverse event	3.07%
Sentinel event	2.95%
Death	0.14%

Q10a. What percentage of **radiation errors** do you estimate result in the following unexpected events?	Mean likelihood
Near miss	3.56%
Adverse event	1.86%
Sentinel event	1.09%
Death	0.12%

Q10b. If a patient is misidentified and encounters **radiation error**, what could be the most severe unexpected event that could occur?	Pct%
Near miss	5%
Adverse event	6%
Sentinel event	9%
Death	80%

Q11a. What percentage of **medication errors** do you estimate result in the following unexpected events?	Mean likelihood
Near miss	5.59%
Adverse event	4.34%
Sentinel event	2.93%
Death	0.15%

Q11b. If a patient is misidentified and encounters a **medication error**, what could be the most severe unexpected event that could occur?	Pct%
Near miss	3%
Adverse event	3%
Sentinel event	4%
Death	90%

Q12a. What percentage of blood **transfusion errors** do you estimate result in the following unexpected events?	Mean likelihood
Near miss	3.78%
Adverse event	1.65%
Sentinel event	1.25%
Death	0.02%

Q12b. If a patient is misidentified and encounters a blood **transfusion error**, what could be the most severe unexpected event that could occur?	Pct%
Near miss	3%
Adverse event	5%
Sentinel event	10%
Death	82%

Q13. What do you believe are the primary root causes of patient misidentification? Please provide your top 3 choices.	Pct%
Incorrect patient identification at registration (i.e. incorrect armband placement)	63%
Too many duplicate medical records in system	34%
Inadequate safety procedures	20%
Insufficient employee/clinician training and awareness	35%
Time pressure when treating patients	60%
Over reliance on homegrown (obsolete) identification system	15%
Patient behavioral issues (misinformation)	9%
Turf or silo issues across departments/workflows	29%
Registrar errors (human errors)	32%
Other (please specify)	3%
Total	300%

Q14. What percentage of the following events could be eliminated with a positive (biometric) patient identification?	Pct%
Near miss	66%
Adverse event	61%
Sentinel event	58%

Q15. Positive (biometric) patient identification can reduce overall medical errors and adverse events.	Pct%
Strongly agree	50%
Agree	27%
Unsure	10%
Disagree	8%
Strongly disagree	5%
Total	100%

Part 3. Revenue Cycle Questions (complete **only** if screen S2 = CFO + Revenue cycle).

Q16. [Q16 in Part 2] What do you believe are the primary root causes of patient misidentification? Please provide your top 3 choices.	Pct%
Incorrect patient identification at registration (i.e. incorrect armband placement)	65%
Too many duplicate medical records in system	41%
Inadequate safety procedures	12%
Insufficient employee/clinician training and awareness	23%
Time pressure when treating patients	39%
Over reliance on homegrown (obsolete) identification system	43%
Patient behavioral issues (misinformation)	8%
Turf or silo issues across departments/workflows	38%
Registrar errors (human errors)	26%
Other (please specify)	5%
Total	300%

Q17. What do you believe is your hospitals annual claim denial rate?	Pct%
Less than 10%	15%
10 to 20%	21%
21 to 30%	33%
31 to 50%	13%
51 to 75%	12%
Over 75%	6%
Total	100%
Extrapolated value	30%

Q18. What percent of your denied claims do you attribute to inaccurate patient identification or inaccurate/incomplete patient information?	Pct%
Less than 5%	5%
5 to 10%	10%
11 to 20%	12%
21 to 30%	19%
31 to 50%	28%
51 to 70%	21%
More than 70%	5%
Total	100%
Extrapolated value	35%

Q19. What is your hospital's average days in accounts receivables (AR)?	Pct%
Less than 20 days	6%
21 to 50 days	12%
51 to 90 days	21%
91 to 120 days	35%
121 to 180 days	14%
Over 180 days	12%
Total	100%
Extrapolated value	104.1

Q20. How significant do you believe denied claims from patient misidentification (e.g., wrong information) have on your hospital's AR?	Pct%
Very significant	35%
Significant	30%
Somewhat significant	21%
Not significant	14%
Total	100%

Q21a. Do you believe that positively identifying a patient at registration through biometrics could reduce denied claims?	Pct%
Yes	76%
No	24%
Total	100%

Q21b. If Yes, by how much?	Pct%
Less than 10%	31%
10 to 25%	34%
26 to 50%	22%
51 to 75%	10%
76 to 100%	3%
Total	100%
Extrapolated value	25%

Q22a. Do you believe that positively identifying a patient at registration through biometrics could reduce days in AR?	Pct%
Yes	72%
No	28%
Total	100%

Q22b. If Yes, by how much?	Pct%
Less than 10%	36%
10% to 25%	34%
26% to 50%	19%
51% to 75%	9%
76% to 100%	2%
Total	100%
Extrapolated value	22%

Q23a. Do you believe that positively identifying a patient at registration through biometrics could improve cash flow for the hospital?	Pct%
Yes	80%
No	20%
Total	100%

Q23b. If Yes, by how much?	Pct%
Less than 10%	36%
10% to 25%	31%
26% to 50%	17%
51% to 75%	11%
76% to 100%	5%
Total	100%
Extrapolated value	25%

Appendix 2: Detailed Cost Calculations

The following tables provide the cost calculations for failed claims and reworking claims.

Cost of reworking claims resulting from patient misidentification			
Step	Cost categories	Source	Average value*
A	Total number of claims (per year)	Ponemon Institute benchmark	22,248
B	Percentage of denied claims	Ponemon Institute survey	30.1%
C	Denied claims per year	Calculation (A X B)	6,674
D	Time to rework claim (hours)	Ponemon Institute benchmark	0.83
E	Cost per fully loaded labor hour (medical billing personnel)	Ponemon Institute benchmark	$36.50
F	Cost to rework one denied claim	Calculation (D X E)	$30.40
G	Total cost to rework denied claims (per year)	Calculation (C X F)	$202,928
H	Percentage of denied claims due to patient misidentification	Ponemon Institute survey	35.23%
I	Total rework cost due to patient misidentification (per year)	Calculation (G X H)	$71,492
*The amounts presented pertain to the average-sized registered hospital in the United States with 169 bed capacity.			

Cost of failed claims resulting from patient misidentification			
Step	Cost categories	Source	Average value*
A	Total billings (gross revenue) per year	AHA Financial Facts 2015	$164,300,000
B	Percentage of denied clams	Ponemon Institute survey	30.10%
C	Estimated value of denied claims per year	Calculation (A X B)	$49,454,300
D	Percentage of denied claims resulting from patient misidentification	Ponemon Institute survey	35.23%
E	Estimated value of denied claims resulting from patient misidentification	Calculation (C X D)	$17,422,750
F	Percentage of denials resulting from patient misidentification that are successfully appealed	Ponemon Institute benchmark	93.0%
G	Estimated value of denials resulting from patient misidentification that were not successfully appealed (or dropped)	Calculation (E X (1-F))	$1,219,592
*The amounts presented pertain to the average-sized registered hospital in the United States with 169 bed capacity.			

For more information about this study, please contact Ponemon Institute by sending an email to research@ponemon.org or calling us at 1.800.887.3118.

Ponemon Institute

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