Health Information Management Forum

Best Practice Standards: Pediatric Patient Identification Interoperability and Challenges with Pediatric Patient Matching

Situation

As stated by healthit.gov, "Electronic health information exchange (HIE) allows doctors, nurses, pharmacists, other health care providers and patients to appropriately access vital medical information electronically – improving the speed, quality, safety and cost of patient care."

A 2016 report from the American Health Information Management Association noted that 86% of respondents said they have witnessed or known of a medical error that was the result of patient misidentification. Health care organizations' revenue cycles also face challenges associated with misidentification, costing the average health care facility $17.4 million per year in denied claims and lost revenue.

In other words, errors within the Master Patient Index/Enterprise Patient Index (MPI/EMPI) affect not only the patient but also the financial, administrative, and clinical areas in a health care facility. This recommendation will serve as a guideline for all children's hospitals in the United States and encourage EHR vendors to reference this guidance during system development to promote patient safety and inoperability.

Background

Interoperability is often compromised for the pediatric population and thus, may negatively impact clinical care delivery. Pediatric patient identifiers may be fluid and introduce risks of misidentification. Underlying interoperability is the issue for ensuring patient safety.

Integrity in patient identification begins with how key patient demographic information is entered into an organization's MPI. Integrity of the MPI is subject to several uncontrollable variables including the merging of MPIs, lack of standardized policy and procedures, and EMR technology. To ensure good searching, an organization needs good nationally recognized name conventions at entry.

Risks

In this digital health era, a single and accurate patient identifier has never been so important for patient care. Patient misidentification can result in patient harm, impose a financial strain on the organization, and risk patient privacy. Errors or delays in care can also result in death, unnecessary and duplicate tests being performed, and duplicate medical records created. The primary risk with duplicate medical records caused by patient misidentification is compromised quality of care, but duplicate records also result in a privacy breach, fragmented data, and denied claims.

To prevent misidentification and near misses, The Joint Commission requires at least two patient identifiers for accurate identification of the individual. ID bands and face sheets are sources where patient identification information can be located.

Developments in pediatric safety efforts have lagged behind the adult population in that, to date, most of the work on patient safety has been with adult patients.

Health Information Management Department

The patient's medical record is used for a variety of reasons in any Health Information Management (HIM) department:

- Scanning paper records into the electronic medical record. If the patient's information is inaccurate the scanned documents will route to the incorrect medical record.

- Release of Information: If the patient was registered with incorrect demographic data or clinical information is entered into an incorrect patient's medical record, both the original patient and the overlaid patient may obtain inaccurate information which could result in errors in patient care and a privacy breach.

- Merging: Once it is determined that there are, in fact, duplicate records for the same patient, the records will be merged. It is an HIM operational standard not to merge records while patient is in-house due to the massive impacts on patient care.   Possible known risks to merging records while the patient is in house:
  - Changes face sheet data elements, which can impact the delivery of blood, blood products, ancillary services, milk products, and many other downstream systems.
  - Require a printout of new face sheet with the corrected data.
  - New face sheet will trigger new patient identification bands used that need to be provided to many services in the hospital.
  - Merged records may complicate physician workflow as we must ensure that the entire record is properly merged, including scanned documents.

Assessment

- There are no standardized policies for organizations to follow for when a pediatric patient name can or should be changed.

- There is no current national newborn naming convention for newborns, specifically, patients who have not yet received their legal name and are given a temporary name with the exception for the guidance as provided by the Joint Commission. *(https://www.jointcommission.org/-/media/tjc/idev-imports/topics-assets/new-requirement-for-distinct-identification-for-newborns/new_requirement_for_distinct_identification_for_newbornspdf.pdf?db=web&hash=BBBBCA74AF5EC3254AA5062BB2BCE944)*

- Patients who are the product of multiple birth delivery present multiple challenges for interoperability and successful patient matching.

- Newborns do not have a Social Security Number (SSN) or governmental identification at the time of birth. SSN is often the highest weighted item used in patient matching algorithms but are not as important for weighting as mother's maiden name, telephone number, or address.

- There are no current national standards for searching or prioritizing properties for searching for a pediatric patient who may have multiple names including their newborn names.

Below are scenarios which may inhibit newborn patient matching for the pediatric patient:

A. Newborn patients are often issued a temporary name which may not be updated at the time of discharge.

B. Multiple birth patients are often named similarly

C. Same first name, different middle name – John David Smith, John Daniel Smith

D. Reversal of first and middle name – John David Smith, David John Smith

E. Similar first and/or middle name – Sarah, Sarai

F. Different first name, same middle name – John James Smith, Joshua James Smith

G. When a baby is born, the birth hospital typically assigns a temporary name, such as Baby Boy A or Baby Girl B. When the legal name is decided by the parent, the temporary name is updated, but this update may not occur if the patient is discharged or transferred before the legal name is decided. When the child is later seen at a different healthcare organization and the name is still "baby" vs. the legal name, interoperability without manual intervention, i.e., verify and update the patient name, is compromised.

    a. If the child was the product of a multiple birth delivery, this issue is magnified as it can be difficult to identify which child was Baby Boy A vs. Baby Boy B.

    b. The non-birth organization would need to contact the birth hospital as well as research birth certificate information and diagnoses to prevent an overlay

H. Parents may not know which child was assigned as Baby Boy A or Baby Boy B at the birth hospital and thus would not be able to answer that "John David" is Baby Boy A and "David John" is Baby Boy B. Many baby legal names have combined middle names or multiple last names due to cultural practices. There is currently no national standard for handling multiple names for first, middle and last names.

    a. In some instances, organizations include spaces or dashes between names or combine the multiple names into one larger name.

I. Many healthcare organizations use Social Security Number (SSN) as a unique patient identifier.

    a. In the pediatric population, the parent may not know the SSN. Or the pediatric facility may not capture SSN at all in the patient demographics.

    b. In some cases, although the SSN may be known by the parent and stored as discrete information, the patient's twin could have been issued a SSN with sequential digits, so there is a possibility of an overlay. SSNs may no longer be issued sequentially, but there are still many patients who were the product of multiple births where this could be the case.

J. Pediatric patients do not typically have governmental issued photo identification (ID), whereas adult hospitals leverage a driver's license or other form of photo identification.

K. Hospitals often use insurance ID as a tool to validate patients, but since the number can change or the mother's ID may be used for the newborn patient and if there are multiple births, this increases the opportunity for errors.

Recommendations:

Issue #1: Naming Attributes: *National Best Practice Recommendations*

A. Do no utilize embedded spaces unless before suffixes such as surnames Jr or III.

    Vankemp *not* VAN KEMP
    Delrosario *not* DEL ROSARIO
    Vanallen Jr *not* VAN ALLEN JR

B. Do not enter spaces in the first name.

    Smith, Maryann C *not* SMITH, MARY ANN C
    Picard, Jean-Luc Pierre *not* PICARD, JEAN LUC PIERRE

C. Hyphenate or join compound last names.

    Smith-Jones, Mary or SmithJones, Mary
    not Smith Jones, Mary

D. Suffixes and degrees should have a space following the last name and no use of periods. Enter academic degrees, such as PhD and MD, in the designated fields ("Academic" in Epic).

    Wilson III, Charles
    Watson Jr, Thomas J

E. Always use the patient's legal name, validated by legal paperwork. Never use "common name."

F. Do not use any of the special characters; including but not limited to:

    numbers,
    apostrophes,
    periods,
    or other special characters (except hyphen)

G. Use Sr. or Fr in a title field but not in the name field for the members of Religious Orders. Do not use reference to "Sister" or "Father" in the name field.

Issue #2: Newborn Naming Convention: *National Best Practice Recommendations*

A. Temporary newborn (pre-birth) name convention utilizing the following naming standard:

Smith, Unknown-Katie or Smith, UnknownKatie (middle name field left blank)

If the newborn is transferred from another facility where the naming convention is not the best practice standard or the organization's standard policy, the recommendation is to admit the patient under the organizational standard, and store the transfer name in the "alias" field.

B. **Temporary newborn (after birth) names convention utilizing the following naming standard:**
    Mom's name: ***Katie Smith***
    Mom's maiden name: ***Katie Miller***
    Baby's name if she had a girl: ***Smith, GirlKatie***
    Baby's name if she had a boy: ***Smith, BoyKatie***
    Baby's name if she had an undetermined sex: ***Smith, BabyKatie***

    Formatting single births:

    Last name: ***Smith***
    First name: ***SexMom***
    Middle name: ***blank***

*Do not separate sex from mom's name with a space. Do not separate into first and middle name.

If the mom has twins: Use birth identifiers (1,2 or A,B) in temporary newborn names, putting these identifiers in the patient's first name field. Recommendation is to use 1, 2, 3 etc. if the EMR allows for numbers to be in naming fields, otherwise using A, B, C, etc.

> Baby's name if girl twin is born first: ***Smith, Girl1Katie or Smith, GirlAKatie***
> Baby's name if boy twin is born second: ***Smith, Boy2Katie or Smith, BoyBKatie***

> Formatting multiple births:

> Last name: ***Smith***
> First name: ***Sex(# or letter)Mom***
> Middle name: ***blank***

*Do not separate sex and birth identifier from mom's name with a space. Do not separate into first and middle name.

If mother has a hyphenate last name (Katie Miller-Smith), the newborn's name would be ***MillerSmith, BoyKatie; MillerSmith, Boy2Katie*

> Last name: ***MillerSmith***
> First name: ***BoyKatie***
> No middle name

C. If the legal name of the newborn is known, the patient's full name should be entered into the alias while the patient is an inpatient.

D. Temporary newborn name as an "alias" for use in matching with high weight of consideration.

E. Capture and utilize mother's legal last name, multiple birth designation and multiple birth order in patient matching and linking of records increasing the data available for algorithms or visual matching.

F. Utilize Health Level 7, version 2.6 standards
   a. Mother's Maiden Name: family name under which the mother was born, PID -6.
   b. Multiple Birth designation: Yes, No or Unknown, PID -24
   c. Birth Order: 0 – 9, PID -25

Issue #3: Name changes: *National Best Practice Recommendations*

A. Newborn Name Changes: Last name changes should never occur during a newborn's inpatient stay. The legal guardian may request a legal name change at discharge. However, it is safe to allow the parent to change the `newborn's first name, and we recommend that parents be given the courtesy to do this at least **once** during the inpatient stay.

B. Inpatient/Outpatient Name Changes: The first and or last name of a child should never be changed during the hospital inpatient stay or during a clinic visit. The parent(s)/legal guardian or patient ≥18 years of age, may request a first and/or last name change at discharge or the end of their visit.

C. Unknown/Trauma Patient: Follow hospital protocols for updating of patient identifying data when transferring to a new unit, otherwise wait to make the name change upon discharge.

Issue #4: Patient Searching: *National Best Practice Recommendations*

A. Best practice in patient searching (non-newborn) will involve a match on the following key patient demographics:
   a. Exact patient last name and first name
   b. Exact date of birth
   c. Exact sex
   d. Exact phone number
   e. Exact Social Security Number
   f. Exact email address

B. For a newborn under the age of 1-year, best practices in search (newborn) will involve a match on the following patient demographics:
   a. Exact date of birth
   b. Exact address
   c. Exact telephone number
   d. Exact email address
   e. Exact sex

C. Searching should always occur with the entry of the complete exact values for the preferred patient matching.

D. If the exact information is not available and/or does not match, the following grid represents the recommended weight recommendations/standards for the various patient demographics in searching – for patient searching it is recommended that patient matching be considered high when at least 3 of the high properties are met and at least 2 of the medium properties are met.

E. This recommendation appreciates that EMRs may handle patient demographic properties differently. This grid is designed to give recommendations on identification priorities. recommending minimum or standard thresholds for the properties that assist user is search and identification.

Property	Value	Priority/Threshold	Weight (Epic)
Patient Name			
Last Name, First Name (No Spaces or Punctuation)	Exact	High	29
Last name without Suffix (No Spaces or Punctuation)	Exact	High	28.5
Last Name, First Name (Partial or Compound Last Name)	Partial Match	High	27
Name Without Middle Initial (No Spaces or Punctuation)	Exact	High	28.5
Last name, First name Alias (No Spaces or Punctuation)	Exact	High	28

Other Key Demographic Information			
Date of Birth	Exact	High	
Sex	Exact	High	
Social Security Number	Exact	Medium	
Email Address	Exact	Medium	
Telephone Number	Exact	Medium	
Mother First Name	Exact	Medium	
Mother Maiden Last Name	Exact	Medium	

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