LEAPFROG HOSPITAL SURVEY TOWN HALL CALL ON SECTION 8: BAR CODE MEDICATION ADMINISTRATION (BCMA)

May 13, 2016

Outline for Call

- Impact of Medication Errors
- Bar Code Medication Administration (BCMA) Overview
    - What is BCMA?
    - How BCMA is Used in Hospitals
    - Benefits of BCMA Use
    - Challenges to BCMA Implementation
    - Leapfrog's Interest in BCMA
- Developing Leapfrog's BCMA Standard
- Overview of Leapfrog's BCMA Standard
- Guidance on FAQs
- Audience Questions

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Impact of Medication Errors

□ Medication errors in the U.S. healthcare system contribute to 7,000 deaths annually[1]

□ Adverse drug events (ADEs) caused by medication errors add more than $7.5 billion per year nationwide in hospital costs[2]

□ Over 30% of medication errors are committed at the point of administration[3]

1. Kohn LT, Corrigan JM, Donaldson MS. To err is human: Building a safer health system. Committee on heath care in America. Institute of Medicine. 1999.
2. Bates DW, Spell N, Cullen DJ, et al. The costs of adverse drug events in hospitalized patients. *JAMA*. 1997;277(4):307-311.
3. Bates DW, Cullen DJ, Laird N, et al. Incidence of adverse drug events and potential adverse drug events: Implications for prevention. *JAMA*. 1997;274(1):29-34.

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What is Bar Code Medication Administration (BCMA)?

- Electronic scanning systems that intercept medication errors at the point of administration
- When administering medications with BCMA, caregiver scans bar code on patient's wristband, then bar code on medication
- These scans confirm the five "rights:"
  - Right patient
  - Right medication
  - Right dose
  - Right time
  - Right route

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How BCMA is Used in Hospitals

- Typically used in conjunction with electronic medication administration record (eMAR) systems
- Also used for pharmacy stocking and retrieval processes to help avoid medication dispensing errors
- Used to scan medication and patient bar codes at bedside, preventing medication errors at the point of administration

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Benefits of BCMA Use

- BCMA implementation can be remarkably effective in reducing medication administration errors
  - 40% relative reduction in non-timing errors in medication administration[4]
  - 50% relative reduction in potential adverse drug events (ADEs)[4]
- Financial benefits
  - Approximate cost of harmful error: $3,100 to $7,400 per harmful medication error[5]
  - Approximate cost of BCMA implementation: $2,000 per harmful medication error averted[5]

4. Poon EG, Keohane CA, Yoon CS, et al. Effect of bar-code technology on the safety of medication administration. N Engl J Med. 2010;362(18):1698-1707.
5. Sakowski JA, Ketchel A. The cost of implementing inpatient bar code medication administration. Am J Manag Care. 2013;19(2)e38-45.

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Challenges to BCMA Implementation

- Challenges to BCMA Implementation
  - Requires significant efforts to redefine caregiver responsibilities and workflows
  - Cultural obstacles may inhibit implementation
  - Cost of implementation can be high for some hospitals

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Leapfrog's Interest in BCMA

- Leapfrog has always recognized the significant impact of harms caused by medication errors

- Since its inception, Leapfrog has measured hospitals' use of computerized physician order entry (CPOE) systems to order medications

- To enhance the measurement of hospitals' efforts to prevent medication errors, Leapfrog is expanding its focus to include medication administration

- Leapfrog believes that expanding its focus to BCMA use is the next important step in driving hospitals to reduce medication errors

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Developing Leapfrog's BCMA Standard

- Leapfrog convened an expert panel to develop the BCMA standard and related survey questions

- The panel was composed of BCMA experts with diverse backgrounds. Nurses, doctors, engineers, and researchers were all included.

- The panel members work in various healthcare organizations such as hospitals, universities, and non-profit organizations

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Leapfrog's BCMA Expert Panel

- Chair: Tejal Gandhi, MD, MPH, CPPS
- Anne Bane, RN
- Jane Englebright, PhD, RN, CENP, FAAN
- Valerie Gooder, PhD, RN
- Richard J. Holden, PhD
- Christina Michalek, RPh, FA SHP
- Marisa Wilson, DNSc, MHSc, CPHIMS, RN-BC

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Developing Leapfrog's BCMA Standard

- ☐ Questions about BCMA were introduced to the 2015 Leapfrog Hospital Survey

- ☐ The results of the 2015 survey and a supplemental SurveyMonkey poll were used to inform the creation of Leapfrog's BCMA standard

- ☐ The expert panel held multiple calls to discuss the development of BCMA standards and survey questions

- ☐ Expert panel addressed:
  - ◘ Scope of the standard
  - ◘ What units to include in standard
  - ◘ What decision support hospitals should have in place
  - ◘ What hospitals should do to reduce workarounds

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Overview of Leapfrog's BCMA Standard

Hospitals are scored on four components of BCMA use:

1. Percentage of Units with BCMA Implemented
2. Percent Compliance with Scanning
3. Decision Support
4. Structures to Address Workarounds

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Overview of Leapfrog's BCMA Standard

1. Percentage of Units with BCMA Implemented

   - A hospital's implementation of BCMA throughout the hospital, as measured by the percentage of units. The initial focus is on medical and/or surgical units (adult and pediatric) and intensive care units (adult, pediatric, and neonatal).

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Overview of Leapfrog's BCMA Standard

2. Percent Compliance with Scanning

- A hospital's compliance with scanning both the patient and medication during administration

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Overview of Leapfrog's BCMA Standard

3. Decision Support: The types of decision support that the hospital's BCMA system offers, including:

1. Wrong patient
2. Wrong medication
3. Wrong dose
4. Wrong time (e.g., early/late warning)
5. Vital sign check
6. Patient-specific allergy check
7. Second nurse check needed

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Overview of Leapfrog's BCMA Standard

4. Structures to Address Workarounds: A hospital's structures to monitor and reduce workarounds, including:

1. Has a formal committee that meets routinely to review data reports on BCMA system use

2. Has back-up systems for hardware failures

3. Has a help desk that provides timely responses to urgent BCMA issues in real-time

4. Conducts real-time observations of users using the BCMA system

5. Engages nursing leadership at the unit level on BCMA use

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2016 Leapfrog BCMA Standard

BCMA Score (Performance Category)	% Units	% Compliance	Decision Support	Processes & Structures to Prevent Workarounds
Fully Meets the Standard	100%	95%	7 out of 7	5 out of 5
Substantial Progress	Hospital meets 3 of the 4 standards			
Some Progress	Hospital meets 2 out of 4 standards			
Willing to Report	Hospital meets 1 or 0 out of 4 standards			
Declined to Respond	Means the hospital did not respond to the questions in this section of the survey or did not submit a survey.			
Does Not Apply	Means the hospital does not operate an ICU or medical/surgical unit.			

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Guidance on FAQs

□ *What is considered to be a medical or surgical unit?*

   ▪ Because each has a unique layout, it is difficult to provide an exact definition on which units would be categorized as general medical, surgical, or medical/surgical units. The CDC has provided definitions for each of these unit types, and we recommend using those definitions for categorization. Hospitals should not include units for patients from a specific service type (e.g., burn, cardiac)

Guidance on FAQs

- *What is considered a "scannable" medication?*
  - Any medication that has a bar code and can be scanned if BCMA were in use would be considered "scannable." Medications with a bar code are still "scannable" even if they are administered in a unit that has not implemented BCMA.

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Guidance on FAQs

☐ *If an alert (e.g., allergy check alert) is part of the eMar but not the BCMA system, should the hospital take credit for the alert?*

  ◻ If the caregiver does not receive the alert at the point of administration at the bedside, the hospital cannot take credit for the alert. Leapfrog's current BCMA standard applies to BCMA use at the bedside. Therefore, all alerts and checks referenced in the survey questions pertain to the bedside, only.

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Guidance on FAQs

☐ *Must a hospital have all examples for wrong time alerts (e.g., early/late warning, medication cannot be administered twice within a given window)?*

   ◘ Hospitals do not need all examples of wrong time alerts. Best practice is to include all examples; however, for purposes of answering the Leapfrog Hospital Survey BCMA questions, hospitals are indicating whether or not they have <u>any</u> wrong time alerts.

AUDIENCE QUESTIONS