Quality and Safety Project

Error-Prone Abbreviations
Abbreviations lead to errors.

- According to Burke (2009), since January 1995, abbreviation errors have made up 9.5 percent of all sentinel events.
  - Sentinel event = an unexpected event that involves death or serious injury; or the risk of serious injury or death.
Top 3 Errors

- SC
- D/C
- QHS
Intended meaning: Subcutaneous

- Misinterpreted as:
  - SC mistaken for SL (sublingual)
  - SQ mistaken as 5 every (the q has been mistaken as “every”)
Ex: a heparin dose ordered “SQ 2 hours before surgery” misunderstood as every 2 hours before surgery

Accepted Use/Correct use:

- Subcutaneous (written out)
- Correctly written out:
  1) Heparin 5000 units=1mL, injections, subcutaneously, q12hours
  2) Lovenox 40mg, subcutaneous, daily
Possible outcomes?
1) Wrong route (sublingually)
2) Excessive dosing error: too frequent (every x hours)

- Normal limits of medication and implied possible patient outcomes:
  - Insulin:
    administration only through subcutaneous route, otherwise insulin destroyed in GI tract before it can be used; insulin rendered useless. Pt does not receive drug therapy.
    - Possible lethal outcome: hypoglycemic, death
  - Lovenox:
    administration only through subcutaneous route, otherwise Lovenox destroyed in GI tract before it can be used; drug rendered useless. Pt does not receive drug therapy.
    - Possible lethal outcome: bleeding complications = local ecchymoses to major hemorrhage
D/C: Discharge versus discontinue

~Medication~
- Discontinue a medication or discharge medications
- Could cause major underdosing or overdosing when patient is discharged

~Appliances~
- Discontinue a hemovac or discharge with the hemovac
- Increased risk of infection if hemovac is discontinued too early
Altered Outcomes

- Discharged with a hemovac or sutures, leaving them open to infection
- Pain medication discontinued while patient is still in pain
- Patient discharged on a medication that needed close monitoring
• QHS means ... Nightly at bedtime
• Misinterpreted as ... QHR ... every hour
• Should be written as ...Nightly
• Found 39 errors of QHS - #1 error found
Outcomes...
- Patient would receive medication every hour instead of just at night.

Dosage calculation...
- Patient could get up to 8X more medication than they really prescribed
Possible Outcomes - QHS

- **Disaster...**
  - Patient could get lethal doses of the medication. Depending on medication it could kill the patient very quickly.
    - Cardiac/ Blood pressure medications
    - Diuretics
    - Pain medications

- **Nursing care ...**
  - Seem incompetent
  - Loss of RN License/ criminal charges
  - Could kill the patient or seriously injure the patient
  - Emotional stress
Summary of Data

ERROR-PRONE ABBREVIATIONS FOUND IN CHARTS

- QHS
- SC, SUB Q
- QDB
- D/C
- CC
- HS
- @
- U
- /
Possible System Breakdowns

- PHYSICIAN and NURSE
  - Decreased time so the order is written quickly with an error-prone abbreviation.
  - There is a resistance to change from the way “things have always been done”.
UNIT CLERK
- Transcription.
- Illegible writing from physician/nurse.

* Difficult to identify specific individuals who used risky abbreviations due to the large amount found in the computer charting.
Fishbone Diagram

NURSE
- Resistance to Change
- Decreased Time
  - Transcription
    - Illegible handwriting from physician/nurse
 UNIT CLERK

PHYSICIAN
- Resistance to change
  - Decreased time
    - Crowded, busy, easily "sidetracked"
 NURSES STATION

USE OF ERROR PRONE ABBREVIATIONS
Healthcare members to work on problem

- Doctors
- Nurses
- Unit Clerks
- Pharmacy
- MD Supervisors, CEO
- IT
Location of Errors

- Medication errors were about 50/50 between paper chart and M.A.R (computer)

- Vicious cycle
  - Doctor’s notes in paper chart... transcribed to computer... entered into M.A.R

- Measure systems with the most error by...
  - Checking Doctor’s prescriptions prior to entering them into computer
  - Count the number of errors in M.A.R vs. number in chart and run statistics on results
Plan

- **Structure (interventions):** Education, computer-based training and visual exposure

- **Process steps:** physicians orders, transcription into computer, nurse reading and understanding, patient care!

- **Outcome:** patient satisfaction & safety
• Mandatory in-service education

• Ways to implement education (auditory & repetition)

• Present data in an organized manner to staff
Plan For Success

- Positive reinforcement
  - raffle tickets, gift cards, etc...

- Consequences for not attending in-service education
  - badge access
Plan for success

- Repetition in education (Implementation)
- Continuing education
- Not dropping the ball
- Eventual assimilation
Every year (annual review), employees must complete CBTs educating them about the dangers of error prone abbreviations.

A post-test is provided to ensure understanding/competency.

Plan: Computer Based Training (CBTs) = training modules

Concept based on: Education

Benefits:
* Easy to use interfaces
* Modular training, performed at one’s pace
* Interactive
• Information boards around unit.
  ◦ Post lists of error abbreviations and reasons to avoid their use.
  ◦ Continual reminders in a non-threatening way.
  ◦ Can work as a team to combat issue.

Plan: LISTS AND POSTERS
Abbreviations to Avoid:
• SC
• D/C
• QHS
• QDB
• cc
• u

Don’t Drop the Ball
Write It All

Keep your patient safe!!

Abbreviations can cause:
• Overdose
• Uncontrolled pain
• Pt injury
• DEATH

Reduce Medication Errors

TEAMWORK
Plan for success

- Possible competition (bar graph)
- Group doctors, nurses and unit clerks (least mistakes)
- Positive reinforcement
• Implement education to decrease errors by holding mandatory staff in-services, training modules, and exposure to proposed material (posters, lists, etc.).
Check= Computer Audit

- Measure improvement
- Computer program
- Two column list (employee, error)
- Employee asked to visit charge nurse
• Positive reinforcement
• Three strike consequences
• Reminder’s for actions (bulletin board)
• Decrease in abbreviation errors
- Training upon hire
- Keep posters, banners etc up-to-date
- Continue in-service
- quarterly or yearly seminars
- Continue positive reward system
- Continue consequences if not implemented
References