Improving Patient Care by Effective Communication of PICC Line Placement

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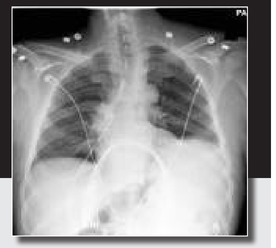


INTRODUCTION:

Patients and referring physicians need quick response times to document that PICC lines are positioned properly so that patients can be discharged home or to a nursing home/rehabilitation facility, or admitted to the hospital.

PURPOSE:

To improve quality and rapidity of interpretations of PICC line placement with minimal disruption of work flow for chest radiologists and venous access nurses.

METHODS:

At an initial meeting among the chest radiologists, radiology residents, and representative of the PICC team, no one was satisfied with the current system in use for communicating this information:

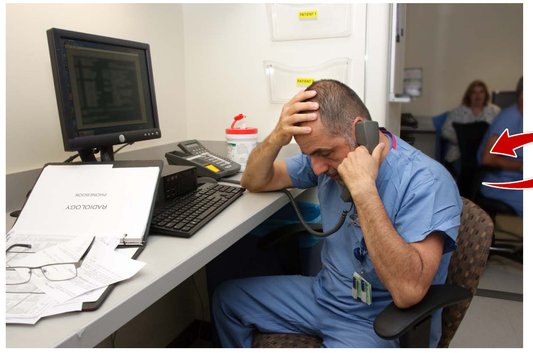
The procedure entailed multiple telephone calls –

1. First, by the technologist taking the radiograph to the radiologist, indicating that the PICC placement examination had been performed, and
2. Second, by the radiologist to the PICC nurse describing the position of the tip. Frequently, the PICC nurse was performing another line placement, making it inconvenient to receive and act on this information.
3. Third, this often required that the PICC nurse telephone the radiologist to obtain this information, disrupting the workflow in the radiology department.

Three subsequent meetings were held in which a new procedure was developed and refined. There was agreement that the radiologist would immediately dictate and sign an interpretation for all PICC placements within 50 minutes (30 minutes, if possible), while the PICC nurse would consult the dictated reports **to** receive the information.

Residents reading a PICC placement study would immediately consult with the attending radiologist so that a final report could be dictated promptly and signed.

To speed up the process, members of the committee decided that a special code be used so that radiologists would recognize that a post-PICC placement examination had been performed and promptly report it.



In addition, to meet the need for the PICC nurses to have a uniform method for describing PICC line placement, the radiologists developed a standard protocol which includes a description of the position of the tip of the PICC line (upper, middle, or lower superior vena cava) and precisely how far it is above or below the desired position at the cavoatrial junction.

RESULTS:

Prior to the intervention, there was a daily average of 15 telephone calls (range, 9-20) concerning PICC line placement. After the new process was implemented, this number dropped to an average of less than 5 per week.

During regular work hours, all PICC placements were reported within the 50-minute time limit. At a follow-up meeting one month after implementation, all stakeholders (PICC nurses, radiology residents, and staff radiologists) reported that they were extremely pleased with the new procedure.

CONCLUSION:

- Identifying cases of PICC placements
- Using a standard reporting protocol, and
- Prioritizing interpretation of these studies

resulted in a dramatic decrease in telephone calls that disrupted the workflow of both radiologists and PICC nurses. All parties agreed that the new procedure was a great success and ultimately led to improvements in patient care.

Prior to the intervention, the following was the procedure for PICC lines:

1. Nurse would insert the PICC line and enter an electronic request for a portable chest x-ray (to determine whether the tip was in the correct place).
2. Radiology technologist would go up to the patient floor and obtain the image.
3. When the image was developed, the radiology technologist would call the radiology resident, saying that there was a PICC line study for a wet reading.
4. The radiology resident would read the study (often not immediately) and page the PICC nurse, giving the nurse a callback number.
   a. If available at the time, the PICC nurse would telephone the radiology resident for the result
   b. If attending to another patient, the PICC nurse would hear the beeper (indicating a message) but could not call back until the new procedure was over
   c. If the resident took too long to interpret the study, the PICC nurse would call the resident (often disrupting the reading session with an attending).

Results: In the best of cases, the resident would get two telephone calls and have to make one page for each PICC line insertion.

In many instances, added to this would be disruption of a reading session (frustrating to both the resident and the attending).

The PICC nurse received a page from the resident and had to call the resident back. In many instances, the page from the resident disrupted the PICC nurse's next case.
If the resident had not interpreted the study and paged the PICC nurse, the PICC nurse would have to call the resident and wait on the phone until the resident read the case (and ideally had it checked by an attending).

Current system:

No one calls anyone. The rule is that an official final reading (resident + attending, or attending alone) is issued and signed within 50 minutes (with no disruption of read-outs with attending).

The PICC nurse reads the final report on OMR at a convenient time (with no disruption in work flow).

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