Patient Safety Tip of the Week

January 16, 2018 Just the Fax, Ma'am

We'll bet the majority of our readers are not old enough to remember Sgt. Joe Friday's catchphrase "Just the facts, ma'am" on the TV show "Dragnet". And those same readers probably recognize fax machines as an anachronism. That is, unless they work in a doctor's office or a hospital! We were shocked to see and hear the recent disclosures about how rampant use of fax machines continues to be in doctors' offices (Kliff 2017, Hill 2017).

Sarah Kliff and colleagues did a podcast on faxing in doctors' offices on Vox's "The Impact" series (Kliff 2017). In Adriene Hill's interview with Vox's Sarah Kliff (Hill 2017) it was noted that "Kliff found that it was a combination of culture and well-intended policy that's lead to the fax machine being a staple in doctors' offices." Kliff had spent a lot of time in backrooms of physician offices and found fax machines "buzzing all the time". In fact, it appeared that most communication between hospitals and physician offices was via fax rather than, for example, email. Kliff noted that use of faxing has persisted despite 90+% of physician offices now using electronic medical records. Of course, the crux of the problem is lack of interoperability. Simply put, many electronic medical record systems are not interconnected to each other. Kliff describes the situation now as "doctors are printing out their own electronic records, faxing it to another doctor office, and then that doctor uploads the printout of the record into their own electronic record."

The actual podcast (Kliff 2017) runs about 24 minutes and is quite entertaining and points out the most salient root cause of the problem: business competition. The podcast starts out in a backoffice setting where the fax machine is busy sending or receiving faxes. Sometimes the machine is busy when attempting to send out a fax. A staff member notes that sometimes the faxes are blurry and she has to start the whole process over again. And sometimes the faxes "just don't show up at all". It "means calling them and asking them to send records". Practices often keep thick folders of records they are still waiting to receive. One staff member "estimates that 80% of the faxes she sends need some sort of human intervention".

Kliff interviewed staff and physicians in several practices. They noted how patients lose time off work because records never came. Often weeks of phone calls and badgering are required to get records and they often have to reschedule appointments because records had not been received. Highlighted were instances where the only way to communicate records from one floor or department of a hospital to another was via fax (because the electronic medical record systems were not capable of interoperability). Staff felt they could do so much more if they didn't waste time with faxes.

Kliff then goes on to discuss why faxing, variously described as "the cockroach of American medicine" or "clunky" refuses to die. Some office staff say "oh, it's a HIPAA thing". Kliff appropriately points out that faxing is not very secure and that HIPAA-secure email is an alternative that is available. She then discusses how the HITECH Act of 2009 "set out to kill the fax". That act, of course, provided the financial stimulus for widespread adoption of electronic medical records. But there was a fatal flaw: competing businesses guard their info. And that proclivity to hoard information applied both to EMR vendors and to hospitals/practices that were competing for "customers". EMR vendors did not want to share their secrets with their competitors by allowing sharing of data. And hospitals "down the street" from each other are competing for the same patients and don't want to share information about those patients.

She interviewed David Blumenthal (former National Coordinator for Health Information Technology), who noted talk is often about "private sector, competition, and choice" as key principles by which our healthcare system should operate but that raises problems for patient care. Kliff quotes another former ONC director, Farzad Mostishari, "the only way to kill fax is to outlaw it". But the podcast goes on to discuss that the current administration thinks otherwise, that we need fewer mandates and wants to turn more over to the private sector and "get government out of the way".

It's a fascinating podcast and shows that the fax has not died. Rather it seems to still be a major, if not **the** major, mode of transmitting patient information today. It estimates that billions of patient care-related documents are still transmitted by fax today.

Actually, we are not so surprised. Sometimes when we come to a hospital we'll wager a friendly bet that we will find certain things (we only bet on things we know are sure winners!). One of those is that we will find alarms that have either been disabled or had their volume altered to make them poorly audible or their parameters have been set so wide that they are unlikely to alarm for important occurrences. Another is that we will find several risk factors for patient suicide. And a third is that we will find examples of **problems related to sending or receiving faxed orders** or other patient-related material.

So, obviously, it's worth repeating some of the caveats we raised in our June 19, 2012 Patient Safety Tip of the Week "More Problems with Faxed Orders" and other columns. The problem we have mentioned most often is **the missed decimal point** (where lines or smudge during fax transmission and printing obscures a decimal point) and the patient receives a 10x overdose of the medication. (In our September 9, 2008 Patient Safety Tip of the Week "Less is More….and Do You Really Need that Decimal?" we cautioned against even using a decimal point when the fraction following the decimal point is clinically irrelevant because that decimal point may be overlooked, especially in faxed orders.) The opposite, of course, may also occur where a smudge on the fax looks like a decimal point (**the phantom decimal point**) so the patient receives one-tenth the intended amount.

But we've also mentioned the case where 2 **sheets put into a fax machine stick together** and thus only one sheet gets transmitted (see our January 18, 2011 Patient

Safety Tip of the Week "More on Medication Errors in Long-Term Care" where we cited such an example from ISMP 2010). Unless you have a cover fax sheet that says "3 pages (cover sheet plus 2 others)" the receiving party may not realize that they are missing a page.

We've also seen cases where **faxes on multiple patients are sent out at the same time** and the receiving party does not recognize that the second sheet is actually for a different patient (see our January 18, 2011 Patient Safety Tip of the Week "More on Medication Errors in Long-Term Care").

Just as with handwritten orders, on a faxed order with a **drug ending in the letter "L"** if there is insufficient space between the "L" and the next number, the receiver may think the "L" is actually a "1" (one) and give a dose 10 times too high. And **dangerous abbreviations** may show up even more frequently on faxed orders than orders written on-site because the provider is more likely to have access to the "do not use" abbreviation list when on-site.

Another mistake is when a person faxes documents that have information on both sides and does not realize that **only one side of each page is being faxed**.

And remember when you are sending a fax that **some elements (eg. text in a different color) may fail to be seen when transmitted**. Or that **highlighted items** (eg. items you tied to stress with a yellow highlighter) may appear **blacked out** on the received fax! (Reminds me of the time in college when I asked a friend to send me his notes from a class I had missed so I could study for a test the next day. He faxed them and all the important stuff, which he had highlighted with a highlighting marker, was blacked out on the fax!!!).

And one of the most egregious errors of all – faxing to the wrong phone number (**the misdirected fax**). Ever get a call from the local supermarket that you faxed them a sheet with PHI on it? Your HIPAA compliance officer and risk manager will turn gray when that call comes in! See the discussion at the end of this column.

ISMP Canada (ISMP Canada 2012) came up with a new fax error – **the truncation error**. They provide a great example of a faxed order for "dalteparin" where the "da" gets cut off in the fax and the "lt" looks like an "H" on the fax, resulting in what clearly looks like an order for "Heparin". Click on the link above and you'll see both the faxed prescription and the original.

Note that prescription has lots of other bad errors on it. It uses the do-not-use abbreviation "U" (for units) as well as 2 other abbreviations that should be avoided ("SQ" for subcutaneous and "QD" for once daily). It has a different dose written above and crossed out. And it does not have listed the indication for the drug. It also has an illegible word following the "QD" (is it nitely? or is it a provider's signature?). And there is nothing on the prescription to indicate the duration of therapy, amount to be dispensed,

whether it should be refilled, etc. Who would have thought one prescription could be used as a primer for medication errors!

ISMP Canada notes the importance of reviewing copies of the fax you send or the one you receive. For instance, in the case given one might have noticed that the name of the hospital was also truncated, which might have been a clue that the medication name was truncated. They also note in the example given that the dosing frequency would have been unusual for heparin (it is usually given twice daily or three times daily rather than once daily), perhaps being another clue to the receiver that there was an error. They also note that including both the generic and brand names on the prescription would have provided another clue to the error. They note the importance of engaging the patient to be on the lookout for errors as well.

ISMP Canada lists multiple good recommendations for dealing with faxed orders in their alert. We've added some of our own recommendations:

1. Try to avoid receiving faxed orders whenever possible (eg. remote CPOE may obviate the need for faxed orders). Note that even verbal orders, where the recipient should be doing "readback" with the ordering provider and clarifying issues, may be preferable to fax in many cases (see our January 10, 2012 Patient Safety Tip of the Week "Verbal Orders").
2. When sending faxed orders always include a cover sheet that specifies the number of sheets being sent and clearly specifies whether the cover sheet is included in that number.
3. Similarly, when receiving faxed orders always require a cover sheet that specifies the number of sheets being faxed.
4. When faxing, make sure you are not missing information on 2-sided sheets.
5. Always ensure that the glass screen on your fax machine is well cleaned and does not have smudges on it.
6. Make sure your documents are correctly aligned when faxing so that important information does not get truncated.
7. Make sure your printer/fax has sufficient ink/toner.
8. Be especially wary if your original has information in fonts or colors that may not be seen clearly.
9. Remember that some faxes received will fade over time (especially with older fax machines that use thermal paper). So be sure you copy those faxes into higher quality paper or scan them into your electronic medical record.
10. Consider calling the person faxing to get verbal clarification of all orders. (In our January 10, 2012 Patient Safety Tip of the Week "Verbal Orders" we noted that, even though we always discourage verbal orders, they do have the advantage of 2 individuals being able to clarify issues).
11. Never send faxed orders on more than one patient at a time.
12. Make sure that the patient's identifying information (at least two unique identifiers) is clearly provided on every sheet being faxed.
13. Only use originals for faxing. Don't use carbon copies or NCR paper copies as the sheets for faxing.

14. Make sure the phone number to which you are faxing is the correct one.
15. Other good prescribing procedures always apply (don't use dangerous abbreviations, don't add a trailing zero after a decimal point, always provide the indication for the drug, leave sufficient space after a drug name ending in "L", etc.).
16. Always review received faxes for flaws (smudges, truncation, lost segments, etc.)

You should have an educational program for all your staff involved in sending and receiving faxed orders (nurses, physicians, clerical staff, etc.). Remember, telling stories about real-life cases where such errors led to bad outcomes is much more effective than just telling them facts and statistics. Tell them one of the stories about a patient getting a 10-fold overdose or the one where a patient got 26 medications (13 of her own and 13 from the sheet faxed in the same batch on a different patient as in our January 18, 2011 Patient Safety Tip of the Week "More on Medication Errors in Long-Term Care").

And don't forget that faxing errors don't just apply to medication orders. Most of the same concerns apply to any patient related material that may be faxed.

There are numerous examples of **misdirected fax transmissions** containing personal health information. These are often one-time errors but amazingly there are numerous examples in the media of continued recurrences over long periods of time. In one instance (ANewsVanIsland 2011) a person has received at least one such fax per week for over 10 years!!! That person's phone number was one digit different than the fax number for a medical clinic. Think of all the times you have dialed the wrong phone number and how easy that would be to do when sending a fax.

One of the typical recommendations for avoiding staff keying in the wrong fax number is to use pre-programmed fax numbers. However, that practice has its own set of unintended consequences in that those fax numbers need to be up to date. We've seen faxes sent to old fax numbers after a physician has moved to a new office and even faxes sent to physicians who have been deceased for four years! And hospital computer systems often have the wrong physician listed as primary care physician, often leading to faxes being sent to the wrong PCP.

Both AHIMA (Davis 2006) and HIMSS (Demster 2007) had good guidelines on sending and receiving personal health information via fax. It appears that neither of these documents is currently available but you may wish to search the AHIMA and HIMSS websites for updates. Some of the highlights from those original guidelines are still quite valid:

1. First of all have a policy on fax transmissions and make sure you educate everyone on it. For many employees it should be included in the annual reorientation session or competency assessment.
2. Make sure your fax machines are in secure places.
3. Always take reasonable steps to ensure the fax is being sent to the appropriate destination.
4. Make sure someone is expecting your fax at the receiving end.

5. Staff should always double check the recipient's fax number before pressing the send button. The AHIMA document notes some hospitals use a brightly colored sticker on the fax machine to remind staff of appropriate procedures.
6. Make sure you send a cover page that indicates the number of pages being sent, the name and phone number of the sender, a confidentiality notice, and instructions of what to do if you have received the fax in error (eg. destroying the documents or sending them back to the sender). The HIMSS document has copies of such cover pages.
7. Remind those to whom you frequently (or infrequently!) fax that they need to let you know of any change in their fax number.
8. Update your pre-programmed fax numbers on a regular basis.
9. When you enter a new fax number or update a fax number do a "test" fax to ensure it is going to the correct destination.
10. Better yet before you fax make a phone call to confirm the correct fax number and ensure that someone is at the receiving end to pick up the fax so confidential material won't be left sitting unattended at the receiving end.
11. Provide instructions on what to do if the fax transmission fails.
12. Consider all misdirected faxes as reportable events and do at least a mini-RCA to identify root causes and contributing factors. Your policy should also define whom you need to notify (including patients) in such cases.
13. Remove all received faxes promptly and get them to the appropriate party.
14. Keep fax logs for both sent and received faxes.
15. Have a person assigned to audit (via random samples) both faxes sent and received for adherence to your guidelines.

Another point to remember: just because your fax machine indicated your sent fax was received at the number you sent it to does not mean that (1) it was printed out completely and legibly without smudges, etc. and (2) it reached the person for whom it was intended.

And often not mentioned is the fact that copies of what you copied or faxed may **remain in the memory** or hard drive of your fax machine. We remember a situation where the local police department donated some old fax machines to charity and confidential police records were found in the memory of those machines! The same could obviously happen with a patient's personal health information on it.

Lastly, the **best solution is not to fax at all**! As electronic medical record systems are evolving, check to see what your capabilities are for exporting or importing information from other EMR's. We've seen many examples where such capabilities exist, yet practices persist in using the fax machine out of habit. Enabling faxing from within EMR/EHR systems can also improve productivity, security and HIPAA compliance. Similarly, in those areas where regional health information exchanges (HIE's) have been established, use your connectivity with those HIE's to share data.

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