WHITEPAPER

Issues related to the use of faxing and security and compliance in healthcare

GFI Software™

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Abstract

While over 80 per cent of healthcare institutions in the US now have electronic health record capacity, it is estimated that about 75 per cent of all medical communications happen by fax. We are in an era of change. A smooth transition requires healthcare providers and institutions to be aware of the ongoing security and compliance issues related to sharing health information and faxing, and to plan accordingly.

Healthcare is fueled by information. **And that information is faxed**

There are almost 900 million visits to physician's office a year in the United States according to the US Centers for Disease Control and Prevention.[1] To that 900 million number you can add about 150 million visits to Emergency Rooms at hospitals, and the fact about seven percent of the population (of roughly 330 million) is hospitalized in a year—about two percent having to be readmitted.[2]

The sum is well over one billion healthcare visits, per year, in the US.

This is more annual healthcare visits in the US than the total attendance to every NBA, NFL, Major League Baseball, and NHL game. It's more than that attendance plus gate numbers for all the major European football (soccer) leagues, the Australian Football League, Indian Premier League for cricket and the Nippon Professional Baseball League.[3]

And just like baseball, football and other sports, each healthcare interaction generates data about patients that is used, communicated and analyzed.

Effective healthcare requires this data to be routinely shared among general practitioners, specialists, clinics, pharmacists, hospitals, health insurers, governmental agencies and others. These one-billion-plus healthcare visits result in an estimated 30 billion healthcare communications transactions per year.[4] Experts project that about 50 to 75 percent of these transactions are fax-based.[5]

With 30 Americans visiting a doctor or hospital per second; this corresponds to the accompanying rumble and electronic hum of about 500 to 700 multi-page faxes per second, each and every minute of every day.

1. https://www.cdc.gov/nchs/fastats/physician-visits.htm
2. https://www.cdc.gov/nchs/data/hus/2018/039.pdf
3. https://en.wikipedia.org/wiki/List_of_sports_attendance_figures#Top_10_stadiums_in_total_attendance_in_a_calendar_year
4. https://getreferralmd.com/2016/08/30-healthcare-statistics-keep-hospital-executives-night/
5. https://www.vox.com/health-care/2017/10/30/16228054/american-medical-system-fax-machines-why

Why fax persists

Faxing remains a major solution for the delivery of healthcare information for four reasons:

1) Faxing technology and protocols are secure against malicious attack
2) It is a secure and HIPAA-compliant means to share Protected Health Information (information that can be linked to an individual about health status, healthcare provision)
3) Paper records and forms persist in many physician's offices, clinics and healthcare facilities
4) Despite the growing and encouraged use of Electronic Health Records, EHRs suffer from incompatibility and interoperability. Faxing records is an easy common denominator.

Fax technology is secure

Medical information sent by fax protocols is more difficult to hack than email. Of the roughly 110 HIPAA breaches reported in the last quarter of 2019, one-third were from email hacking.[6] Email plus EHR breaches are more than half of all incidents. Fax communications, even if initiated through an email-to-fax software package, are delivered over a phone line, which is inherently secure. Faxing converts message images into encrypted audio frequency tones. Even if hackers were able to access your phone lines at the time of a transmission, they would be met by unintelligible noise that can only be converted back to the original message by the intended fax recipient.

Fax meets HIPPA compliance

The Privacy Rule in HIPAA allows covered health care providers to share protected health information for treatment purposes without patient authorization, if they use reasonable safeguards when doing so. Fax is explicitly named as an acceptable method to transmit medical records, test results, and other healthcare information and instructions.[7]

Email can now be encrypted, but sending an encrypted email is more complicated than sending a fax, especially if you are using digital fax software rather than a physical machine.[8]

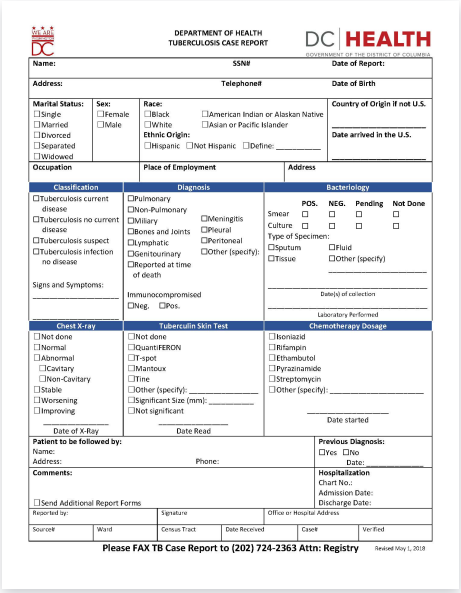
6 Sample month of Q4 2019: https://compliancy-group.com/more-than-400000-patients-affected-by-november-healthcare-breaches/

7 https://www.hhs.gov/hipaa/for-professionals/faq/482/does-hipaa-permit-a-doctor-to-share-patient-information-for-treatment-over-the-phone/index.html

8 https://slate.com/technology/2018/06/why-doctors-offices-still-use-fax-machines.html

Need to interact with paper-based systems

If you are reporting a TB case in DC, you will be filling out this form and following the instructions at the bottom, which clearly state you need to fax it.[9]



DEPARTMENT OF HEALTH
TUBERCULOSIS CASE REPORT

DC HEALTH
GOVERNMENT OF THE DISTRICT OF COLUMBIA

Name: SSN# Date of Report:

Address: Telephone# Date of Birth

Marital Status: ☐Single ☐Married ☐Divorced ☐Separated ☐Widowed
Sex: ☐Female ☐Male
Race: ☐Black ☐White ☐American Indian or Alaskan Native ☐Asian or Pacific Islander
Ethnic Origin: ☐Hispanic ☐Not Hispanic ☐Define: _____
Country of Origin if not U.S.
Date arrived in the U.S.

Occupation | Place of Employment | Address

Classification
☐Tuberculosis current disease
☐Tuberculosis no current disease
☐Tuberculosis suspect
☐Tuberculosis infection no disease
Signs and Symptoms:

Diagnosis
☐Pulmonary ☐Non-Pulmonary ☐Military ☐Bones and Joints ☐Lymphatic ☐Genitourinary ☐Reported at time of death
☐Meningitis ☐Pleural ☐Peritoneal ☐Other (specify):
Immunocompromised ☐Neg. ☐Pos.

Bacteriology

	POS.	NEG.	Pending	Not Done
Smear	☐	☐	☐	☐
Culture	☐	☐	☐	☐

Type of Specimen: ☐Sputum ☐Fluid ☐Tissue ☐Other (specify)
Date(s) of collection
Laboratory Performed

Chest X-ray
☐Not done ☐Normal ☐Abnormal ☐Cavitary ☐Non-Cavitary ☐Stable ☐Worsening ☐Improving
Date of X-Ray

Tuberculin Skin Test
☐Not done ☐QuantiFERON ☐T-spot ☐Mantoux ☐Tine ☐Other (specify): _____ ☐Significant Size (mm): _____ ☐Not significant
Date Read

Chemotherapy Dosage
☐Isoniazid ☐Rifampin ☐Ethambutol ☐Pyrazinamide ☐Streptomycin ☐Other (specify): _____
Date started

Patient to be followed by:
Name:
Address: Phone:

Previous Diagnosis: ☐Yes ☐No Date:

Comments:

Hospitalization
Chart No.:
Admission Date:
Discharge Date:

☐Send Additional Report Forms

Reported by: Signature Office or Hospital Address

Source# Ward Census Tract Date Received Case# Verified

Please FAX TB Case Report to (202) 724-2363 Attn: Registry Revised May 1, 2018

If you are a physician interacting with others in the US District of Columbia, you must be prepared to fill out paper and find a fax machine or email-to-fax software.

Many healthcare professionals cite the utility and flexibility of paper record-keeping to do some jobs better than electronic. One UK-based doctor stated: “The persistence of paper alongside electronic records will continue, and should continue, until better systems – that reflect the way people actually work – can be developed to deliver safer and more timely care.” [10]

EHR-only systems face incompatibility issues that fax solves

As the US Magazine, The Atlantic, reports: “Fax also allows for interoperability: People with different information-technology systems and software applications can communicate easily, via one uniform technology.” [11]

In a 2018 physicians survey by Deloitte, 62 percent of respondents said interoperability of EHRs needs improvement. The survey states that "...achieving interoperability can seem like a mammoth task."[12] Organizations often face interoperability-related challenges at multiple levels:

- As health systems have grown through mergers and acquisitions, different parts of the organization may be on different EHR systems
- Multiple and a growing number of other technologies, clinical systems and devices send, receive and contribute data with EHR systems
- Healthcare providers and health systems need to exchange clinical and other data with other providers, health insurers, and government agencies. For example, Healthcare entities interact often with law-enforcement and legal entities; the latter have a high use of fax technologies.

9 https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/TB%20Case%20Report%20Form.pdf

10 https://theconversation.com/why-we-wont-have-a-paperless-nhs-anytime-soon-96382

11 https://www.theatlantic.com/technology/archive/2018/11/why-people-still-use-fax-machines/576070/

12 https://www2.deloitte.com/us/en/insights/industry/health-care/ehr-physicians-and-electronic-health-records-survey.html

Sending faxes that are secure and legally compliant

While potentially safer from hacking, sending documents through fax technology does not eliminate all possible issues around security and compliance. There are still problems related to:

- Security of faxed documents on the sender or recipient's fax machine
- Mis-directed or mis-dialed faxes
- Maintaining and storing patient-related information for legally required lengths of time.

Fax machines in secure spaces

Paper documents left unattended in a fax machine at either end of the journey become vulnerable and could be accessed by unauthorized individuals.[13] The HIPAA Privacy Rule requires that covered health care providers apply reasonable safeguards when making these communications to protect the information from inappropriate use or disclosure.

Misdirected faxes

HIPAA guidelines suggest confirming unknown fax numbers before sending; or loading more commonly used fax numbers into a fax machine. This may be difficult for larger healthcare institutions that could have **hundreds of individual fax machines** in use.

Case in point: The HIPAA journal reported that seven doctors' offices in the Fort Worth area of Texas accidentally faxed patients' protected health information to the wrong fax number.[14] Names, medial histories and more information were sent to a local radio station.

Archiving fax records for legally required lengths of time

Rules vary by jurisdiction, but a common requirement is to hold patient treatment information for seven to 10 years. The actual time may even be longer. If the patient treated was a minor; you may have to keep records until the patient reaches the age of majority for your area.

These legal retention requirements are challenging for paper-based records such as faxes. Patient files can take up considerable space. They may be lost due to theft or natural disasters (such as fire or flood). Ink and paper can degrade to illegibility within the legal archiving time requirement.

Additionally, searching for information is time-consuming if done manually. You also run the risk of faxes not being attached or lost to a patient's record when you are required to produce proof of information.

13 https://hitconsultant.net/2018/08/27/fax-machines-modern-healthcare/#.Xh30rUdKjcs

14 https://www.hipaajournal.com/faxing-error-sees-phi-sent-to-local-media-outlet-8693/

Other organizational issues related to faxing in healthcare

Beyond security and legal compliance, physical device faxing also creates organizational issues such as:

- Best use of time with health professionals faxing information
- Getting ready for the move to full electronic record-keeping.

Multiple articles document newly-minted physicians bewildered by how to operate a fax machine.[15] The juxtaposition of high-skills and low-tech highlights the opportunity-cost-lost problem of physicians waiting for physical fax machines to send or receive time-sensitive patient information.

Traditional fax machines send paper and create paper. The growth of electronic health records finds paper-based information difficult to digest. As EHR systems and packages continue to evolve in response to healthcare provider input, we will, most likely, move to a predominantly digital health and health record system. Fax technology that stays traditional and paper-only will be a barrier and problem for these systems. Even if faxing shrinks to one-tenth the current healthcare usage, it is still about 1.5 billion to 2.2 billion (that's billion with a "B") faxes per year in the American healthcare system alone.

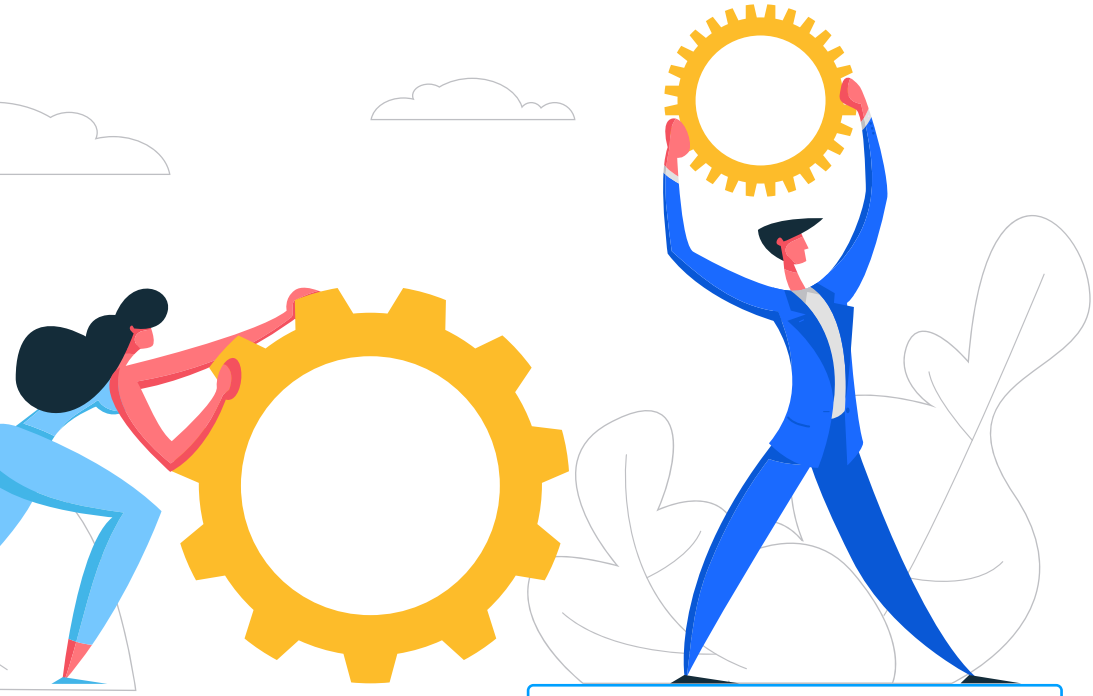
Faxing in the 2020s

In healthcare, the future may or may not belong to faxing, but the present certainly does.

Healthcare providers and institutions turn to faxing to do many jobs and solve many problems. The challenge is for these providers and organizations to do so in a secure and efficient way that meets legal requirements for the transmission and archival storage of patient's Protected Health Information.

This challenge is exacerbated by the sheer volume of individual healthcare information transactions. The numbers can quickly overwhelm security and compliance requirements with traditional fax machines in any situation larger than individual practice. Healthcare providers and institutions are examining alternatives such as email-to-fax software to manage their fax communications in a more efficient, effective and legally compliant way.

15 https://www.cnbc.com/2018/02/10/milllennial-doctors-forced-to-use-fax-machines-causing-puzzlement.html



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