

UNDERSTANDING
PAPERLESS MEDICAL SYSTEMS
COST CENTERS

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Background

Is there really economical advantage in using a paperless medical information systems?

Before PaperCutPro® was born, the question we were trying to answer in our practice was ‘How can be more efficient and improve our bottom line?’ At that time we had one office location. One of the single, most time-consuming jobs our nursing staff did was to provide a completed Georgia 3231 vaccination form without which no child could attend school or daycare. The state required that these forms had to be completed in their entirety each time they were issued. It was not allowed to keep photocopies and simply add new vaccination entries and then create new photocopy ‘masters’ ready for the next set of immunizations. This obvious waste of time (as much as 5 minutes per 3231 form) made me start looking for not-so-obvious wastage.

Every office is familiar with the drudge task of re-filing paper charts into the chart racks. So I began to watch the simple task of checking a patient in, pulling their chart, paperclipping to it a superbill, and together placed in the nurses chart rack awaiting them to call the patient back. Now at this time I estimate our 4 provider office was seeing some 16,000 patients a year. To my dismay, we were paying 80 man-hours per week for this ONE seemingly insignificant function.

Seeing an obvious time-consuming task of vaccination documentation was obvious, but now I was worried that we were spending a lot of money on seemingly simple tasks. It seemed imperative that to remain competitive and profitable we would have to move away from paper wherever possible. More specifically we had to have complete command of our DATA.

The future of profitable medical practice hinges on this. Now I see patient medical data as equivalent to dollars when I think of office income and expense. When physicians and staff see patients and use computers to record patient data instead of paper, the income side of the equation increases. On the flip side, ancillary non-medical patient data which is tracked in computers instead of on paper also reduces expense.

As physicians, medical staff, and office managers, we must directly equate data with dollars. The faster and more efficient we are at handling data of any kind in our office, the more money our practices keep. Viewed from the patient vantage point, electronic data records equate with increased quality of care, both in reality and patient perception.

The question therefore is not IF you are going to move to paperless data management. Paper records will soon be the exception. The question is how to understand the cost centers of paperless systems so you can make the right decisions as you move to paper. Except for the actual handling of paper (and more importantly the data contained on it), its relatively easy to record the cost of the paper, i.e. the folders, forms, charts, etc that physically make up a paper chart. Most people involved with medical practice will really have no clue about the cost of paper data.

Cost Centers

Cost Center A – Internetworking

I still remember the first computer that we had in the Pediatrics office of my residency program. It was an IBM PC and it was located in a small back room in the program offices. I was the only one to play on it. Networks were really unknown. Now everyone has a basic understanding of the Internet and how to use the most common features such

as email and the web. These are only a small part of what internetworking is actually. To understand Cost Center A you have to understand what an Internet connection is, and how it is important in a paperless medical system.

Cost Center A includes all the costs of bringing Internet access up to your physical building. You can equate it to your telephone access. The phone company agrees to provide one or more phone lines, all with dial tones, in a box installed on your building. You are responsible for all your equipment and connections to the box where those phone lines are installed. Internet access is exactly the same.

Internet access is described by the speed of those wired connections. Cheap connections can be no more than tens of dollars per month. Expensive connections can be as much as \$700 a month. As you would guess,, the cheap connections are slower and the expensive ones are faster.

More correctly though, when we say 'speed' we mean 'bandwidth.' Bandwidth can easily be equated to milk shakes. Given the same thick milk shake, a larger straw is better than a smaller straw for moving that cool delicious substance onto our taste buds. A larger bandwidth means a bigger digital straw.

Paperless systems by their very nature require larger digital straws to connect mutiple offices! Even in single office locations high speed connections are essential, since more advanced systems like PaperCutPro® also leverage other information available on the internet. Soon we'll see integrated patient referrals and eligibility checks accessed from insurance web sites seamlessly within paperless systems. Partly for this reason, you won't ever hear us call PaperCutPro® an EMR, or Electronic Medical Record system, since that would imply a more limited scope.

Today's systems must be more comprehensive and tomorrow's system even more innovative. Our medical education will soon be almost entirely online. Our software suppliers of paperless information systems will provide the bulk of their services through our Internet connection. Tomorrow's medicine will have no option for not being connected to the Internet. That means Cost Center A is not optional as we will all have to be connected to the Internet for reasons other than connecting our offices to access patient data.

Still because different size Internet 'straws' are priced differently, it is tempting to choose a slower DSL connection for \$400 a month over a very, high speed Internet connection called a T1 for \$600 to \$700 a month. Remember that data flow is dollars. That slower connection will probably cost you more than the \$200 to \$300 a month difference in most cases in upkeep alone. Even if you have a single office location, without high speed connections, your paperless information system software supplier may not be able to support and maintain you without actually coming on site, which will certainly be far more costly.

Cost Center A is usually a fixed monthly amount which is contracted on a yearly basis. Its worth saying one last time; data flow is dollars! So get the fastest 'straw' you can!

Cost Center B – Hardware Infrastructure

Hardware infrastructure is a comprehensive term that includes computers, printers, and the wired or wireless hardware connections within your offices. These wired and wireless connections within a single office comprise a Local Area Network, abbreviated LAN. You generally have a single LAN in each office so that if you have three offices you will have three LANs.

The LAN connects each computer and printer in an office to all the other computers and printers in that office. The LAN also connects all the computers and printers in an office to the Internet. If you have multiple offices then each office LAN is connected to all the other office LANs through your Internet connection.

If the LAN is the capillary system for each office then the Internet is the main arterial connection between them.

These connections represent a fixed, minimal, and one-time cost. The computers and printers however make up the bulk of Cost Center B and since they do wear out and become obsolete, they represent a recurring expense. Fortunately this recurring hardware expense wave is usually quite long. Our original complement of iBooks are still fairly serviceable even though they have been in use and running continuously for over five years.

Even the best of equipment requires service including operating system software updates, bug fixes, and any software not included in Cost Center C (described later). In our office we have about 25 to 27 Macs in four locations and we do all our own support for these machines in-house. This saves us a considerable amount, however this is not possible for most offices.

This kind of support is usually negotiated and contracted on a yearly basis, but paid by the month.

Cost Center C – Software Infrastructure

This cost center is fairly easy to understand. It includes all the software that is required for your paperless medical information system to function. We use a couple of pieces of software in addition to PaperCutPro® to complement our solution, including a fax server package, and an automated phone call-back package. We use PCN for our billing and insurance claim generation package.

Any software which is critical to medical data flow in your offices should be included here.

Generally I find that this software has an initial purchase cost as well as some ongoing costs. PaperCutPro®, our paperless medical information system, for example has both an initial license fee and a yearly renewal and support fee. The fax server software, phone call-back software, and PCN medical billing software have similar fee structures.

The norm is for software in Cost Center C to have both a licensing and a renewal/support fee. It can be tempting to buy boxed software products that don't have an ongoing support or update fee structure. This is usually not desirable for an office practice. The last thing you want is software that is here today and gone tomorrow.

The best software has good design, strong support, and is continuously in development. More importantly it should let you focus on the care of patients.

There are two pieces of software to consider for medical practices in our experience. These are defined by the two key functions in every office: delivery of services and billing for those services. When you hear the term practice management, it refers to the billing and claim filing function. The other piece is for the delivery and documentation of patient medical management. These two functions could both be met in a single piece of software, however, philosophically I prefer to have my business standing on two legs instead of one. PaperCutPro® was designed to dovetail with our practice management software by providing the information that our people need to properly complete the insurance claims.

Cost Worksheet

What are the actual costs of going truly paperless?

So you think a paperless information system is right for you. You understand the three cost centers. Now you want to know the costs. I've included a worksheet that matches Potts and Smith Pediatrics to guide your own estimations.

| Potts and Smith Pediatrics | Cost Center A Internetworking | Cost Center B Hardware Infrastructure | Cost Center C Software Infrastructure |
|----------------------------|---|---|--|
| Initial Costs | \$2700/mo, \$32,400/yr | \$30,000 estimated hardware \$2,000 LAN hardware & installation | PaperCutPro® - 25 users = \$55,000, \$2,200/user; Practice Management - 10 users = \$10,000 estimated; Fax Server - \$1,400; Phone Call-back Software - \$400/1 line, \$400/5000 calls |
| Unit Cost Analysis | \$32,400/25,000 pat visits = \$1,296/patient/yr | about \$1,400 per exam room | \$66,800+/25,000 pat visits = \$2.67 per patient visit |
| Initial Costs Comments | T1 Internet Connection is about \$700 per office. There is a 4th T1 to my home since I develop and maintain all our hardware and software. Our office manager handles the practice management software from her home on a DSL connection. Our initial yearly patient total rose from about 16,000 to currently around 25,000 because we expanded. Expansion was made possible because we chose to leave paper behind. | We have 7 desktop Macs in three offices at checkin, checkout, and referral stations. All clinical care staff use small iBook laptops which they carry from room to room. For 3 offices we have 23 exam rooms for which we require 13 laptops. Our laptops have added ram in order to make them as fast as possible. Our desktop units are similarly equipped with higher capacity components. | These may vary depending on what software you currently may have. It is common for many practices to have a practice management solution already, even though they themselves still work with paper. PaperCutPro® was not created to replace these solutions. In our case we already had a very good working solution. Rather, the software was designed to provide the necessary clinical information to allow those using the practice management software to code appropriately and obtain the highest possible return per patient claim. |

| Potts and Smith Pediatrics | Cost Center A Internetworking | Cost Center B Hardware Infrastructure | Cost Center C Software Infrastructure |
|----------------------------|---|---|---|
| Ongoing Costs | \$2700/mo, \$32,400/yr | \$30,000 estimated hardware replacement/8 years (if you opt for contract hardware management you would add \$600-\$1000/computer/year) | PaperCutPro® - 25 users = \$11,000/yr, \$440/user/yr; Practice Management - 10 users = \$1,000/yr est; Fax Server - \$400/yr; Phone Call-back Software - \$400/5000 calls |
| Unit Cost Analysis | \$32,400/25,000 pat visits = \$1,296/patient visit/yr | \$163/exam room / year beginning in 5 to 8 years from initial investment; (add \$600-\$1000/computer/year if you opt for contract management) | \$13,000/25,000 pat visits = \$0.52 per patient visit/yr |
| Ongoing Costs Comments | This cost center is fixed as you can see. It is compatible with practice costs such as facility rental or mortgage. If you examine the ongoing costs for Cost Center B and C, those are minute in comparison, depending on hardware management. | We are finding that our Macintosh hardware is very robust and most units will last a good 7 to 8 years. The hardware retirement has begun primarily because our initial units memory and storage capacities have been outstripped by a robust operating system development of Macintosh OS X. | These costs though at first glance nominal, are very small compared to the how much you pay per patient visit. Of all three Cost Centers, this one has the greatest return on investment. |

Conclusion

How can you not afford to do away with paper?

Once the initial investments were made in our practice, the return on investment was very tangible. We increased from one clinic to three and from 16,000 to 25,000 patient visits per year. Currently we have slots for 5 full time providers and employ 7 providers in our practice. Within the next year, our newest 3-room 1-provider location will be moved to a new office with 8 to 10 exam rooms. That location will have 2 full time providers and bring us to 6 to 7 full time slots. Our patient load will likely increase from 25,000 patient visits per year to around 32,000. Our 25 user PaperCutPro® license will be adequate for many years. This easily justifies the cost of investment. Indeed it is the least expensive of our investment to remove paper from our office and increase our efficiency.