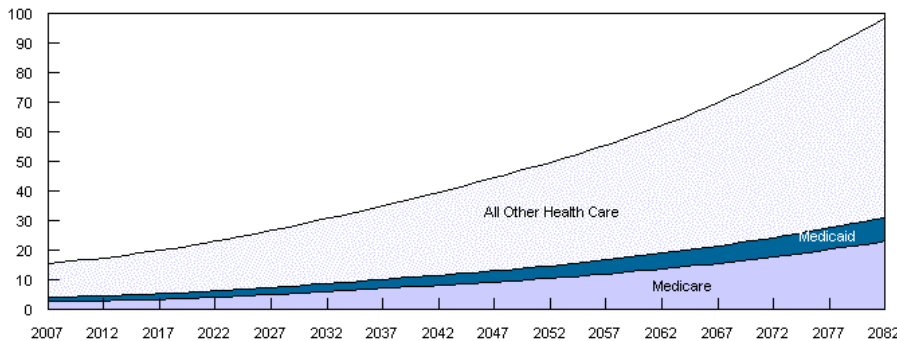


# The PDF Prescription for Health Care Cost Control

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Healthcare costs are projected to keep on rising.

Source: [Congressional Budget Office](#)

Healthcare costs in the US have significantly outpaced inflation for several decades. Alongside the question of universal coverage, the healthcare reform debate in Washington, DC, therefore, rightly centers on controlling costs. Policy-makers have recognized that current long-term trends are unsustainable – what to do about it is the subject *du jour*.

To get my blood drawn the other day, I watched entries made in three different systems. At least four distinct pieces of paper were generated to celebrate my hospital visit. Naturally, I'm not including the billing and insurance paperwork, which I haven't yet received. Computers were much in evidence, but they appeared to serve largely as an interface to well-worn laser printers. Instead of simply entering a bloodwork order into the system, paper had to be printed for me to hand-deliver to the lab. The freshly-printed form required a stamp before it was “good”. Oh, and the form was only good the day it was printed. If I couldn't wait 45 minutes to get blood drawn, I'd have to repeat the whole process.

These are routine, many-times-a-day operations within a large hospital of good reputation. Standardization, streamlining and rationalization of such overhead should have happened long, long ago. What century are we living in?

Leaving aside the political questions of how care is financed or delivered, everyone agrees that controlling administrative costs is essential to bringing healthcare expenditures in-line. I'm no doctor, but I know a thing or two about documents, and I have a prescription for the healthcare industry: PDF.

## An Operational Perspective

From the information and administrative points of view, healthcare is a swamp of files, documents, forms, databases, images, multimedia – you name it. Security and privacy concerns are serious, persisting and ever more consequential. Hundreds of vendors tout proprietary or otherwise mutually incompatible systems, while every vendor and insurance company has its own forms and procedures.

Today, the many and varied gaps between these disjointed processes are bridged with new paperwork for doctors, hospitals and patients, returning us full circle to fax machines, FedEx and old-fashioned pen and paper.

It's not so much that any one or two or three of these systems is terrible. Even a purely paper-based system could be reasonably efficient and effective – IF it was highly structured, consistent and systematically implemented.

We don't have to stick with paper and its limitations, but we DO have to deal with the grinding gears between the various systems in use. We can bemoan the fact that the biggest single administrative problem is standardization, or we can do something about it. That's where PDF comes in.

## Setting the Terms for Change

One can think in terms of two fundamental venues for technology contributions to “bending the curve” - slowing or reversing the trend towards higher costs:

**Bridging** technologies that can contribute towards integration of today's real-world systems. Examples include fax machines, document bar-codes and OMR (Optical Mark Recognition) systems to read “fill in the oval” forms.

**End-State** technologies that contribute to (more or less) idealized healthcare administrative operations. Examples include relational databases, encryption, digital signatures and standardization implemented at a high level.

Perhaps uniquely, PDF offers both bridging and end-state technologies all in one. What are the standout qualities of PDF with respect to these two venues in healthcare technology needs?

### **PDF seamlessly integrates content from both paper or electronic sources**

Accommodating the messy reality of today's hand-filled forms and printed records is essential for any one size fits all electronic document technology. Happily, PDF pages produced from Word or Excel coexist on equal terms with pages produced from scanners or fax machines, and both enjoy the same portability, viewing options, linking,

thumbnails, security, digital signatures and other features of PDF. Even 3D models may now be represented in PDF!

**End-State:** Integration of multiple sources and source formats into a verifiable documentary record is a key criteria for end-state solutions.

**Bridging:** The capacity to integrate scanned or faxed (or imaged, or plotted, or whatever) content together with other PDFs generated directly from authoring applications may be leveraged to increase efficiency in almost any system that utilizes (or merely accepts) PDF files.

### **The PDF format encompasses documents in all their variety**

In healthcare, “document” is a broad concept covering many distinct sorts of items; reports, articles, statements, charts, database records, forms (blank) and forms (filled), archives, prescriptions, invoices, labels... you get the idea. PDF can and does serve as the electronic version of each type of healthcare-related document in many settings.

So far, however, the many advanced capabilities of PDF, such as markup, interactivity, scripted forms, security, digital signatures and client-server integration, remain woefully under-utilized. Beyond the innate capabilities of the format, PDF files may include XML via the XMP (eXtensible Metadata Platform), a key mechanism to assure interoperability between diverse systems. PDF can even contain other files: XML, images, Flash animations, movies, databases, specialized medical data – anything.

**End-State:** PDF provides a one size fits all solution for every type of final-form document, and can perform in dynamic document roles as well.

**Bridging:** As organizations learn to integrate electronic documents into their systems, PDF can meet their needs at each step of document interaction, from fillable forms to patient files, from image markup to secure distribution.

### **PDF is just... Portable**

The central value of PDF is so obvious, it's often understated. PDF provides a consistent, reliable representation of any document, on almost any operating system, and the Reader software is free.

Adobe Systems invented the PDF format in the early 1990s and remains the preeminent desktop PDF software vendor. In 2008, PDF “went public” as ISO 32000. The format is now an international standard managed by industry volunteers, of which Adobe is but one.

The free Adobe Reader, the rapidly expanding “ecosystem” of independent PDF developers, and the body of international standards governing the technology all

contribute in cementing PDF as the Portable Document Format of choice into the foreseeable future.

## **What Can Government Do?**

- Healthcare administration generates many metrics. Government should reward and encourage measurable progress in reducing administrative costs while improving service.
- Drive the adoption of electronic document and digital signature technology nationwide and internationally. Many countries and states still don't accept digital signatures, and many organizations in states that do still won't take them.
- To ensure high quality results and to set a level playing field for software developers, governments should support the development and adoption of technology solutions meeting industry standards, particularly ISO 32000 (PDF), ISO 19005 (PDF/A) and the forthcoming ISO/AWI 14289 (PDF/UA).

## **Conclusion**

PDF technology is already part of healthcare administration at many levels, but often on an *ad hoc* basis, and almost always without taking full advantage of the format. As such, the potential for PDF technology to reduce costs and improve performance in healthcare information management has barely been tapped.

Many of the document handling requirements in healthcare are be served by the qualities that made PDF the world's *de facto* electronic document technology. It remains for policymakers and vendors to fashion a working consensus on moving forward. PDF, and how to leverage PDF to better serve healthcare administrative needs, should be at the core of the technology discussion.