Even as the cost of healthcare in the United States spirals for consumers, these rising costs have not translated into rising profits for healthcare institutions. Plagued by uncompensated care, operating inefficiencies, and increasing equipment and labor costs, many hospitals and clinics are facing fiscal crisis – they are simply unable to avoid losing money.

For any business, public or private, one of the most glaring challenges to cost containment is uncompensated expense: failure to collect unpaid bills. This paper addresses the salient points of bad patient information and its impact on the bottom line.
The Price of Uncompensated Care

Uncompensated healthcare costs in the U.S. reached $27 billion in 2005. These unpaid bills accounted for 5.6% of hospitals’ total expenses in 2004. They are largely seen as write-offs each year, unrecoverable as a “cost of doing business” in a $900 billion industry. In reality, however, uncompensated care is not without a price – its cost is borne by everyone, including patients, institutions, insurance companies, state agencies, and the Federal government. Moreover, uncompensated healthcare costs will surely almost double in the next ten years, mired in complex external and internal challenges of increased self-pay and uninsured patients, billing errors, operational inefficiencies, and insurance fraud.

Uncompensated Healthcare Costs: $27 billion in 2004 rising annually at a compound rate between 5-6%.

Diagnosing The Problem

Two key factors largely contribute to the rise in uncompensated care:

The population of the uninsured in the United States is rising – 45 million in 2003, 80% of whom are working families without coverage. The likelihood of non-payment escalates in this environment, either through inefficiencies, negligence, or even fraud.

Patient payment processes and infrastructure are inadequate to handle the load – back-office practices are overburdened with third party payers such as Medicare and Managed Care organizations, and are largely ill-equipped in implementing effective uncompensated care and collection policies.

On the one hand, the rising number of the uninsured is an issue of national scope and involves complex solutions from scores of parties. However, the ability of organizations to manage their processes more effectively to recover lost revenue is another matter – in fact, better containment of uncompensated healthcare may be the only truly controllable part of the overall cost recovery equation.

In December 2003, more than 3,000 of our nation’s hospitals formally pledged to adopt AHA billing and collection practices aimed at reducing uncompensated care and improving the patient experience.

—National Pledge to Reform Uncompensated Care Underway, Zimmerman & Associates.
Strategies For Uncompensated Care

Uncompensated care improvements typically represent the largest predictable yield in revenue performance than any other process improvements. According to a recent brief on uncompensated care reform, one expert said, “There is arguably no better burning platform for reform right now than the topic of uncompensated care. From an economic standpoint, there is very real and significant margin money at stake.”

These trends have spurred strategies throughout the U.S. aimed at reducing the expense of uncompensated services over the long term.

Many institutions are tackling the patient payment dilemma through best-in-class practices, methods and tactics. To better manage resources and revenue recovery, they are evaluating their collection policies and practices and augmenting them with cutting-edge patient identification and segmentation technology at point-of-service.

They are also becoming increasingly proactive in implementing programs that involve data qualification to detect and investigate fraudulent claims and unpaid bills.

Address Management

At the core of this strategy is the establishment of a sound infrastructure centered on better patient address identification and classification. Healthcare organizations can realize tremendous cost savings by improving the overall quality and accuracy of patient data they collect and use in their patient correspondence and decision-support processes.

Large health organizations such as hospitals, managed care facilities and public health departments collect and manage thousands of street addresses daily in the course of serving patients and managing business.

Address management in segmentation, billing and collection functions can deeply affect an organization’s ability to recover revenues from federal, state, local, private or self-pay sources. In addition, it can enhance opportunities to provide improved patient care.

The Cost Of A Bad Address

The US Postal Service (USPS) delivers 206 billion pieces of mail each year and destroys about 2 billion pieces a year due to unaddressed or improperly addressed mail. Overall, according to a 2002 USPS and PricewaterhouseCoopers report, 23.6% of all mail sent in the U.S. is incorrectly addressed.

In 2001, an industry expert estimated the cost of bad addresses in healthcare to be $3 billion. This is simply the cost of claims not delivered to the right address and it includes postage, paper and envelopes for the mailer.

For a healthcare organization, the death of a mailing – an invoice, a bill, an appointment or even test results and other vital patient information -- often occurs right in their own mailroom, the result of a bad address

Typically, a bad address may have been born in an emergency room, clinic or admitting area where accuracy of information is especially acute. There is a lot of paperwork to complete, and client addresses are often entered in a hurry. Indeed, several addresses may be also be necessary – patient, guarantor, insurers.
The collection of information from a patient or consumer has no failsafe checkpoints to protect against entering a bad address, so when the information is processed and the patient invoice mailed, it is typically returned undeliverable.

To make matters worse, bad addresses continue to live on within the entire healthcare system. If the address is submitted electronically, which occurs about 65 percent of the time, it has now spread to at least three other health organizations. It has also likely spread to the marketing and planning departments of these organizations, which rely on analyses based on the locations of their customers.

These implications are far-reaching and extend beyond the financial. Determining where and when to intervene, improving the quality of care, increasing accessibility to service and proper allocation of resources are all critical components of the healthcare delivery chain.

The United States Postal Service has very strict rules about how addresses are structured. These rules are even more stringent for business addresses. This address standardization is governed by the USPS CASS® rules (Coding Accuracy Support System), making it easier and faster for USPS to process.

For example:

Common Address  
3750 Walnut Street  
Boulder, Colorado 80301

Under the CASS system, streets are identified by segment and node. For example, Main Street would start at the intersection of Walnut (node) and would end at Broadway (node), with odd numbers on left, starting at 1 and ending at 99 (segment), with even numbers on the right (2 to 100).

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11 Bill Davenhall, ESRI HealthCare Product Manager.

12 US Postal Service CASS (Coding and Accuracy Support System). USPS.
How Can An Address Be “Bad”

Common causes for bad addresses are misspellings and missing address numbers. Addresses that do not conform to USPS CASS rules also cause errors.

What Can Go Wrong?

Errors can occur in segments with missing ranges of addresses or ranges applied to the wrong side of the street, an error in the street name or even an error in the ZIP code.

Other errors can be street number or even in the street type (for example, Road instead of Street or Avenue).

Furthermore, ZIP+4 are constantly changing, as the U.S. Postal Service continually refines its system for the best possible delivery of mail:

<table>
<thead>
<tr>
<th>Month</th>
<th>ZIP+4 Level Monthly Transaction Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 2004</td>
<td>387,636</td>
</tr>
<tr>
<td>December 2004</td>
<td>3,449,106</td>
</tr>
<tr>
<td>January 2005</td>
<td>827,048</td>
</tr>
<tr>
<td>February 2005</td>
<td>408,939</td>
</tr>
</tbody>
</table>

The number of changes in U.S. ZIP+4 codes is staggering.

The sheer volume of change within the U.S. address system makes it difficult to keep up with accurate patient address information. Couple this with inherent healthcare inefficiencies that plague the industry, and it’s easy to see why it’s almost impossible to manage by current methodologies.

Geocoding Address Management

Geocoding refers to address matching and the process of taking an address and attaching geographic coordinates (latitude and longitude). Geocoding currently plays a significant role in demographic and geographic data gathering for a variety of industries for multi-channel delivery, customer care and efficient mail document processing. It tracks, segments and qualifies population segments to insure accuracy of information and is used in research, marketing, resource allocation and transportation.

Geocoding In Healthcare

Healthcare is benefiting from geocoding technology as well.

Geocoding is currently being used by the CDC and in leading healthcare systems to track, route, document and map health resources and patient information. Geocoding helps track disease patterns by geography, maps and routes health professionals to patients, and even makes site location analyses to create assisted-living centers. Geocoding is vital information for healthcare, returning a rich set of geographic information to provide a better service for patients and make smarter business decisions.
Managing Uncompensated Healthcare:

The Role Of Geocoding

Geocoding is also being recognized as a real ROI rationale for recovering compensation in healthcare.

- Confirm addresses as valid deliverable addresses, standardized according to USPS regulations.
- Enhance address information by geographic location (latitude and longitude):
  - Where is the closest healthcare provider?
  - Which office offers best services for clients?
  - Where are physician locations?
- Create a map that depicts addresses.
- Fix demographics to newly created coordinates, batching information by state, city, ZIP Code and ZIP+4 extension.
- Aggregate census block data and block groups at a level higher than street level for confidentiality and HIPAA compliance.
- Track patients’ hospital visits by geography; minimize potential fraud and patient abuse of ER benefits.

Geocoding Demographics (Sample)

<table>
<thead>
<tr>
<th>Total Population</th>
<th>6,442</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Asian Population</td>
<td>7</td>
</tr>
<tr>
<td>% Black Population</td>
<td>1</td>
</tr>
<tr>
<td>% Am. Indian/Eskimo Population</td>
<td>0</td>
</tr>
<tr>
<td>% White Population</td>
<td>87</td>
</tr>
<tr>
<td>Total Female Population</td>
<td>3,242</td>
</tr>
<tr>
<td>Median Age</td>
<td>31.7</td>
</tr>
<tr>
<td>Median Age Female</td>
<td>31.4</td>
</tr>
<tr>
<td>Median Age Male</td>
<td>31.9</td>
</tr>
<tr>
<td>Households</td>
<td>2,176</td>
</tr>
<tr>
<td>Average Household Size</td>
<td>2.96</td>
</tr>
<tr>
<td>Total Households With Children</td>
<td>1,108</td>
</tr>
<tr>
<td>Householder Age 15-24</td>
<td>43</td>
</tr>
<tr>
<td>Householder Age 25-34</td>
<td>675</td>
</tr>
<tr>
<td>Householder Age 35-44</td>
<td>758</td>
</tr>
<tr>
<td>Householder Age 45-54</td>
<td>415</td>
</tr>
<tr>
<td>Householder Age 55-64</td>
<td>154</td>
</tr>
<tr>
<td>Householder Age 65-74</td>
<td>86</td>
</tr>
<tr>
<td>Householder Age 75-84</td>
<td>40</td>
</tr>
<tr>
<td>Householder Age 85+: 5</td>
<td>5</td>
</tr>
<tr>
<td>Total Households With Adult</td>
<td>232</td>
</tr>
</tbody>
</table>
National Center for Health Statistics and Center for Disease Control, under the Healthy People 2010 Initiative, are participating in efforts to increase geocoding capabilities through the U.S. healthcare system (CDC and NCHS Objective 23.3). Geocoding will be the basis for data linkage and analysis in the 21st Century, increasing the proportion of all major national, state and local health data systems that use geocoding to promote nationwide use of geographic information (GIS) at all levels.

CDC’s National Electronic Disease Surveillance System (NEDSS) is an initiative that promotes the use of data and information system standards to advance the development of efficient, integrated and interoperable public health surveillance systems at the federal, state and local level. Users of NEDSS across the United States will incorporate standardized address management, spatial relationship determination, and geographic accuracy for monitoring the occurrence of diseases and conditions.

Scott Danos, Public Health Analyst and Surveillance Team Lead at CDC. “By promoting and supplying better standards and tools, we can establish best practices for electronic data collection, identification, analysis and dissemination.”

Group 1 Software, Inc., a Pitney Bowes company has entered into an alliance relationship with CDC to integrate Group 1’s GeoStan™, Spatial+™ and other geocoding software into CDC’s National Electronic Disease Surveillance System (NEDSS). Group 1’s GeoStan and Spatial+ are components of the company’s comprehensive Customer Communication Management (CCM) solution. GeoStan corrects, standardizes and associates geographic coordinates with addresses, in the process known as geocoding. Spatial+ enables users to perform more powerful, accurate and comprehensive spatial analysis of location and other geographic criteria.

CDC chose Group 1’s solutions based on its accuracy, easier integration and better overall performance. Group 1 Software is an industry specialist in applications where location accuracy is critical.

Group 1 Software, a Pitney Bowes Company, has specialized in mailing applications, address management and geocoding since 1994.

Group 1 provides industry-leading technologies that allow businesses to cleanse and enrich their data, generate personalized customer communications and integrate and deliver data across the enterprise.

Group1 works closely with best-of-breed data providers and mapping companies to bring a superior address standardization and geocoding applications. Its Colorado-based Centrus division has invested more than 600,000 hours of R&D in geocoding, producing algorithms and geocoding methodologies that are unique to the marketplace.