

# HOW TO FIND & STOP HIDDEN REVENUE LEAKS

WITHIN YOUR HEALTHCARE SYSTEM



## There may be a hidden leak in your revenue stream from a source you least suspect

- A 331-bed tertiary academic teaching hospital<sup>1</sup> discovered that it was losing more than **30,000 staff productivity hours annually**.
- One of the country's leading academic medical centers<sup>2</sup> found it was **losing \$200,000+ annually**.
- A 604-bed hospital<sup>3</sup> estimated it was **losing more than 4,500 staff hours annually**.

## What is it? Wayfinding

It is the hidden cause of revenue and productivity losses incurred by late and missed appointments, idle equipment and people repeatedly interrupting staff to ask for directions.

SPREO has spent years investigating the psychology and science of wayfinding, its impact on hospital revenue and patient satisfaction. The key to successful wayfinding - knowing where you are in relation to your destination at any point in time - is difficult because GPS technology does not work well indoors. SPREO has solved that issue with a proprietary technology that enables indoor positioning accuracy. Users know where they are at any moment in time in relation to their entry point and desired destination.

## Wayfinding is a bottom line issue

In a healthcare environment where the sustainability of hospitals depends upon the most efficient administration of every revenue dollar, losing hundreds of thousands of dollars because of wayfinding issues is untenable.

**Ann Sloan Devlin<sup>4</sup>**, a Professor of Psychology at Connecticut College who specializes in healthcare environments, details how wayfinding issues cost hospitals money.

*“People who are unsure where they are and how to reach a destination will interrupt staff engaged in other activities. A cost-estimate found that problems in wayfinding at Emory University Hospital cost the institution \$220,000 annually. An environment that fosters independent wayfinding will reduce costs. For example, one study<sup>2</sup> showed that patients exposed to posted signs in an admitting area made fewer demands on staff and were more knowledgeable about admitting procedures and amenities available, in contrast to patients without this posted information.”*

## A study<sup>3</sup> done almost 30 years ago found...

As people disrupt staff members by asking directions, productivity is reduced. Researchers estimated that more than 4,500 staff hours were wasted on giving directions at a 604-bed hospital, which would be more than the hours worked in **two full-time jobs per year**.

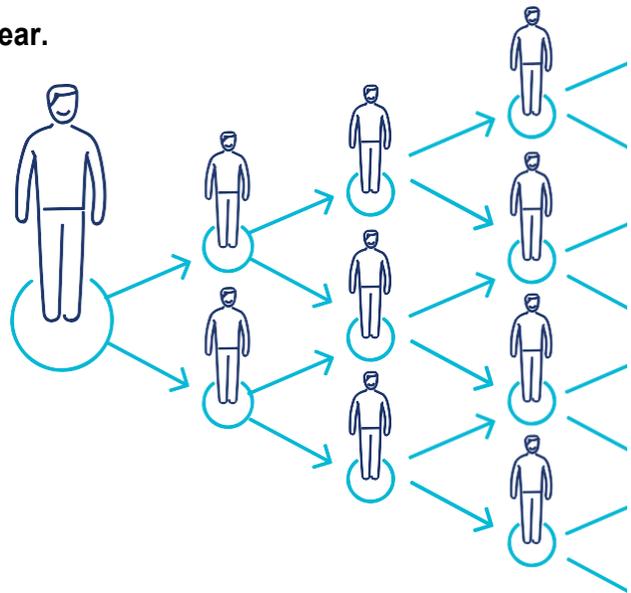
AGS, a wayfinding graphics manufacturing firm, interviewed 50 visitors and outpatients at the Lankenau Medical Center in Wynnewood, PA and asked how often they asked for directions<sup>1</sup>. Hospital visitors said they asked approximately two times during each visit. With an average of 2,500 outpatient visits each day the costly bottom line math looks like this:

**2,500 visitors x 2 directions/day = 1,825,000 directions/year.**

If you estimate that it takes just one minute to give directions, the math is even more costly:

**1,825,000 directions x 1 minute/employee =**

**30,000+ “lost” hours each year!**



## Late and no-show patients create scheduling gaps

According to *Healthcare Finance*, “Missed appointments cost the U.S. healthcare system more than \$150 billion a year.” They waste physician time and result in underutilization of expensive imaging equipment and surgical suites. As a result, perhaps the most important question is this:

***Can patients find their way through the entire outpatient process in a timely manner, from arrival to parking, registration to their appointment and back?***

That should be the number one goal of your wayfinding system and its role as a revenue driver.

## Inadequate wayfinding impacts patient satisfaction

When a visitor has trouble navigating through your hospital, it creates dissatisfaction and uncertainty. Administrators know that these variables can significantly impact a patient's perception of clinical performance. A recent study published by the *National Institutes for Health* measured patients' perceptions of the environment of care (EOC), with a focus on the physical environment in which healthcare is delivered. Among the factors rated most highly by patients was "orientation," which according to the study meant "good, clean signage and information points."

## One system, multiple challenges for wayfinding

To be effective, a wayfinding system must efficiently guide visitors through expansive hospital campuses and numerous buildings that often lack any distinctive appearance or visual markers. Wayfinding systems must help patients and visitors find their way through old hospitals that have been expanded, modified and reorganized without wayfinding intent. Many have multiple main entrances, new wings, endless corridors, changes of direction, and circulation systems that defy an intuitive sense of direction and orientation. Multi-level buildings have stacked floors without visual reference cues and that further confuse innate wayfinding. People naturally have a horizontal and vertical compass. When the multiple floors cannot be visualized and the horizontal floor plan is complex, wayfinding becomes extraordinarily difficult. More hospital wayfinding challenges include:

- **Ambulatory centers and specialized treatment buildings that are not on the central campus.**
- **Entrances may be on the ground floor, not the first floor, as patients often assume.**
- **Parking garage floors may not coincide with hospital floors.**
- **Elevator buttons add to the confusion, is the lobby on "L" or "G" or "1"?**
- **Hospital restructuring and expansion may move departments and signage cannot keep up.**
- **Room numbers do not get reorganized after expansion, resulting in overlap confusion.**
- **Elevators often have restricted access or split access between floors and wings.**
- **Important messaging creates visual clutter that competes with signage: *No Smoking, Out of Service, Please notify the technician if..., Isolation Unit, etc.***

## Stress, literacy and “Where is the x-ray department?”

For the most part, patients and visitors are not reading hospital signage with a clear mind and time to understand its directions. In fact, quite the opposite is true; people are usually in a hospital under duress... ill, injured, or stressed over a procedure or test. The ability to read and comprehend is clouded by the emotional response to fear, stress, anxiety and even panic. Illness and stress detracts from short term memory and cognition.

A study published in the *American Journal of Critical Care*<sup>5</sup> found that “A patient’s family members who are exposed to traumatically injured ICU patients, may have an emotional distress level almost as great as that of patients.” Researchers also found that families of critically ill patients scored about the same on an Acute Stress Disorder Scale as did patients admitted to a posttraumatic stress disorder psychiatric unit.

There are other complicating factors when patients try to decipher wayfinding signage including age, vision, mobility and language barriers. The ability to read is also an issue; 45 million Americans are functionally illiterate and read below a 5th grade level.

## One of the most important challenges for effective wayfinding is “internal” language

Departments within the hospital can find it difficult to agree on terminology. Is it imaging, radiology or x-ray? Clinicians and staff may want to call it cardiology or nuclear imaging when patients are looking for “the stress test department.” Patients are looking for the sign that says “colonoscopies” when clinically it should read “GI Suite” or “Day Surgery.” The disconnect can be significant and the result is patients wandering the hallways with paperwork in hand.

Directing patients to one appointment is challenging enough, but what happens when they have multiple appointments in one day? An effective wayfinding system supports this, adequately directing people between inpatient and outpatient departments, ancillary services, labs, imaging, physical therapy, doctors’ offices, and support services like the cafeteria and parking.

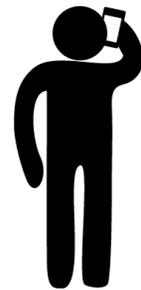
## How can we replace anxiety with satisfaction?

We all know that inadequate wayfinding causes confusion, anxiety and decreased patient satisfaction, and that it creates missed appointments, lost revenue and interferes with staff productivity. What can improve or at least augment legacy signage systems? **Technology...**

More specifically, **mobile technology**.

According to the latest *Pew Research Internet Project*,

*“95% of Americans own a cellphone, and 90% of them used their phone to “get directions, recommendations, or other location-based information.”*



Incorporating mobile technology into wayfinding is an effective and efficient solution.

## Hospitals, wayfinding and mobile technology

Hospitals across the U.S. are turning to mobile technology as an economical and highly efficient wayfinding strategy. It allows changes to maps, department names and locations instantaneously, reducing the cost of repeatedly changing physical signs. It is intuitive to users because they are intimately familiar with their phones. Mobile maps direct users from their homes to parking to their appointment and back, increasing timely arrival at appointments.

## Improved patient satisfaction = Increased revenue

Wayfinding is a hidden revenue leak for many hospitals. Once it is addressed effectively, it becomes a strategic and financial benefit to the business of running a hospital. It improves patient perception of your value and your organization.

You look at every fine detail to run a tight financial ship and nurture growth; but as you walk through the halls, consider the signs of leaking revenue that you see around you and consider the quick implementation of a solution that can increase productivity and revenue.

# The SPREO Wayfinding Solution - Specifically designed for hospitals

Our mobile wayfinding app guides users through the hospital campus, multiple facilities and indoor floor plans with the same turn-by-turn, “blue-dot” experience that most have become accustomed to with outdoor navigation. For those without smartphones, kiosks with smart, interactive digital displays and your custom content support wayfinding throughout the facility.

SPREO was the first company in the world to solve the unique problem of indoor navigation on a hospital campus with our deployment at Clalit Medical Center in Haifa, Israel. The ability to logically navigate through a complex building depends entirely upon the technology’s ability to precisely locate where the user is at any given moment in time. We have solved that problem and developed a technologically-advanced solution that provides a simple and intuitive navigation experience for even the most inexperienced user.

Our wayfinding technology guides the user from home to the parking garage to multiple appointments and back to their car in a timely fashion. Custom-branded for your institution, the SPREO solution improves not only patients’ perception of your facility and on-time appointment arrivals, but it also ultimately increases revenue through greater staff efficiency and improved patient satisfaction scores that directly affect reimbursement levels.

## REFERENCES:

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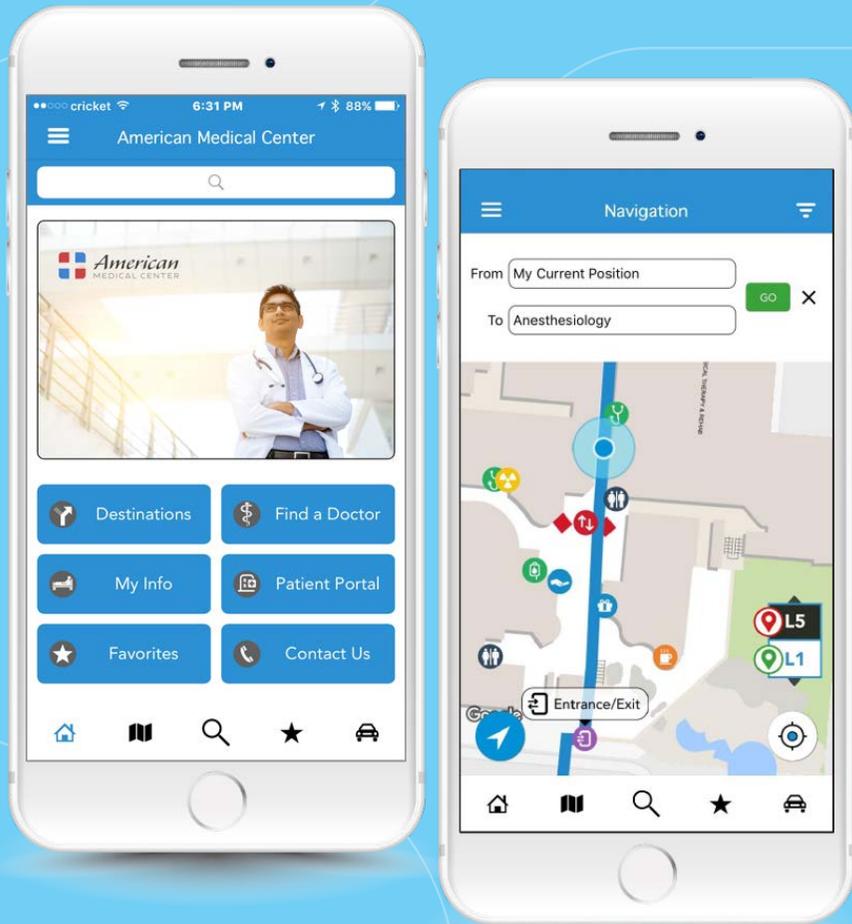
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3: Zimring <http://blogs.cornell.edu/iwsp/files/2013/09/Wayfinding-at-the-East-Campus-of-CMC-2hds8uc.pdf>, accessed 6.10.17

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5: Stephen M. Auerbach, PhD; Donald J. Kiesler, PhD; Jennifer Wartella, MS; Sarah Rausch, MS; Kevin R. Ward, MD; Raolvatury, MD; *Optimism, Satisfaction with Needs Met, Interpersonal Perceptions of the Healthcare Team, and Emotional Distress in Patients’ Family Members During Critical Care Hospitalization*. *Am J Crit Care.* 2005;14(3):202-210.

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# The Global Positioning Leader

Little more than a decade ago, two small Israeli companies were working together to build a more powerful location-based, mobile navigational system. The first, Telmap, Ltd. was eventually acquired by Intel for over \$300M in October of 2011; the second, Waze Ltd., was more ceremoniously acquired by Google in June of 2013 for more than \$1 BILLION.

During this period of global acclaim, Israel's oldest and largest healthcare system, approached senior members engineering teams with a request to develop what they called "Waze for Indoors," to help people navigate to and through their expansive medical campuses. Ultimately, that request birthed the company now known as Spreo.

So, at the core of the Spreo healthcare solution is the unparalleled expertise and experience that created one of the most popular and frequently used apps in the world. Combined with insight and knowledge gained in designing and deploying not only the first ever hospital installation, but more than 400 additional mixed-use facilities around the globe... including the Daytona International Speedway, the Atlantis Resort complex in the Bahamas, the Dell Corporation's expansive corporate campuses in Texas and California, more than 20 Taubman luxury malls in the U.S., and hundreds of other facilities of varying shapes, sizes and functions located around the world.

There is no substitute for expertise and experience. Spreo leads the way.