

# How to Calculate Your ROI on RTLS-Enabled Asset Management [High Level Budget Estimator]



## Summary

- Experiential data shows that significant financial returns can be realized through the use of Real-Time Location Systems (RTLS) for managing mobile medical assets in a hospital environment.
- There are many areas of hospital operations where tangible ROI can be measured.
- In addition to quantifiable, verifiable hard dollar savings, there are a wide range of incredibly valuable soft dollar benefits derived from the use of an RTLS system. While not often considered valid for the purpose of financial justification, soft dollar benefits are significant for improving efficiency, patient safety, experience, and clinical outcomes

## Estimating the potential value of a ROI for your hospital

Generating an accurate image of the value that your hospital can expect to realize through the use of an RTLS Asset Management solution is complex. It requires dozens of hospitals experienced in the implementation and realization of value from RTLS systems – demonstrating how to measure and analyze the data.

Formulating an ESTIMATE of what may be possible is much simpler, but precise enough to determine if it is worth your organization's time and investment to dig deeper.

Provided below is an ILLUSTRATION of how a simple analysis can be completed through an investment of 15 minutes' time and an easy-to-use worksheet guide.

## Hard dollar value

An average inpatient hospital bed has 7 mobile assets assigned per bed. Therefore, a hospital with 300 beds will have approximately 2,100 equipment pieces that should be tagged with a location tag.

**calculation:** 300 beds x 7 mobile assets per bed = Estimated 2,100 mobile assets should be tagged with an RTLS tag.

An average hospital, which effectively uses an RTLS system, recognizes 20% of surplus inventory, which equals a value of \$2,100,000. While hospitals typically are not able to reduce surplus inventory by selling it to realize a gain, especially in the first year with RTLS, the financial benefit will come in the following years. By reallocating already-owned equipment, the hospital can eliminate equipment purchases, which with an average 5-year amortization period, enables them to recognize 20% of the equipment value each year.

An average hospital annually spends around \$500 per bed for medical equipment rental, such as specialty beds, wound vacuums, and hospital-grade breast pumps. For a hospital with 300 beds that equals spending of \$150,000 on rentals each year. With the use of an RTLS system, a hospital can start using owned equipment first and also shorten the billable period of rental equipment, resulting in decreased rental costs from 25%, even up to 75%. Assuming an average level of 50% in savings, as hospitals often prefer to rent vs own specific types of equipment, that equals \$75,000 savings in rentals annually.

Although equipment shrinkage remains a taboo topic in many hospitals, an average hospital loses around 2-7% of their assets each year. Even if we assume only 2% shrinkage level, a 300-bed hospital with the asset fleet worth \$10,500,000, will lose \$210,000 in asset shrinkage annually. By monitoring equipment movement and managing garbage and linen chutes, hospitals can typically retain 50% of assets, which equates to a savings of \$105,000 per year.

## Soft dollar value

The worksheet does not include soft dollar savings and benefits that hospitals are realizing each and every day from RTLS-enabled Asset Management solutions, such as:

- Thousands of hours converted annually from equipment searches by staff to patient care
- Improved patient safety due to the ability to immediately locate and remove recalled equipment
- Thousands of dollars saved by avoiding missed PM which could result in a void of manufacturer warranty
- Improvement of the request-to-dispatch time KPI
- Avoidance of corridor clutter, which improves safety of the facility
- Minimized risk of not complying with the Joint Commission and state regulations
- Improved medical staff satisfaction through the ability to automate non-clinical tasks which enables them to focus on high-quality patient care and more complex medical decisions, resulting in higher patient satisfaction and clinical outcomes.

## Additional value

Yet, the most impressive ROI from implementing an RTLS-enabled Asset Management solution is – if done with proper forethought – establishing a foundation for a wider range of use cases at a very small incremental cost. With a proper RTLS infrastructure in place, backed by the hard dollar ROI from a well-established, proven use case such as managing mobile medical assets, hospitals can extend the use of RTLS to over 100 additional uses cases, such as patient flow, staff duress, wayfinding, hand hygiene, and RTLS-based patient mobility studies.

## Worksheet - estimate your own value

The following Worksheet is designed for you to quickly estimate potential value that an RTLS-based Asset Management solution could deliver for your organization.

This should be used as a high level estimation only, and a deeper investigation would be required to refine the figures for your specific situation.

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Feature	Typical range Of values*	Calculation	Insert Your Data Here (Example data in light grey)
A	Number of hospital beds	Site specific	300 beds
B	Mobile assets per bed	4-10	7 mobile assets per bed
C	Quantity of tagged equipment	A X B	2,100 mobile assets per bed
D	Average Value of Tracked Assets	\$4,000-\$8,000,	\$5,000 average asset value
E	Asset fleet (asset inventory) value	C X D	\$10,500,000 total asset value
F	Opportunity for Optimization	10% - 30%	20%
G	Avg Rental Cost per Licensed Bed	\$300- \$900	\$500
H	Annual rental expenditure	A X G	\$150,000
I	Estimated Savings in Rental Costs	25% - 75%	50%
J	Estimated Annual Shrinkage Rate	2% - 7%	J X E
K	Annual Cost of Shrinkage		\$210,000
L	Expected Reduction in Shrinkage	20% - 75%	50%
<b>Estimated Resulting Value</b>			
M	Annual savings in asset utilization	E X F	\$2,100,000
N	Annual savings on rental costs	H X I	\$75,000
O	Annual savings in shrinkage	K X L	\$105,000
<b>Total Estimated Annual Value</b>		<b>M + N + O</b>	

## Conclusion

There is strong evidence that significant financial returns can be realized through the use of Real-Time Location Systems (RTLS) for managing mobile medical assets within a hospital. As healthcare executives look for ways to reduce costs and improve operational efficiency, RTLS-Enabled Asset Management solutions should be listed as a top technology investment. In addition to quantifiable and verifiable ROI, there are a wide range of incredibly valuable soft dollars benefits that are derived from the use of an RTLS system. While not often considered as valid for the purpose of financial justification, soft dollar benefits are significant for improving efficiency, patient safety, experience, and clinical outcomes.

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