

Life Sciences

Guidehouse insights define new digital technology market and align investments for \$350M opportunity

Challenge

While intensive care units carry the advantage of having vital signs monitoring devices set up to alert staff if something goes awry, the majority of admitted patients rely on provider care teams to regularly check their vital signs. Outside the ICU, vital signs generally are only checked every four to six hours, even less frequently overnight.

The leadership team of a global company saw potential for its in-development digital health technology in helping care teams monitor patients more frequently and effectively. In concept, the new device would offer a more complete and trackable vitals record, time savings per patient of one to two minutes, and more frequent vital checks. But before committing more investment dollars, the company's decisionmakers wanted to clarify:

- Which of two competing research and development pathways offered the best bet?
- What locations in the hospital would benefit most from the technology?
- How much clinical evidence would be needed for broad adoption?
- What type of adoption could reasonably be expected?

For answers, the decisionmakers turned to Guidehouse, to conduct a strategic market assessment and model investment scenarios.

Solution

Competitive analysis found that this new device would offer improved capabilities over existing products, including the ability to continuously and remotely monitor core vital signs, like blood pressure and oxygen saturation levels, leading to a potential reduction in unplanned ICU transfers and in-hospital mortality. A large U.S. study showed respiratory rate is often the least frequently and accurately measured parameter, despite being the greatest predictor of mortality. In addition, more than 25% of all patients did not have complete vital records, and the time to document vitals and transfer to an electronic health record could be two-to-three times longer than the time to measure the vitals. Furthermore, research also found that many hospitals in the United States, Germany, France, and the United Kingdom skipped collections at night, even among high-risk patients.

In other words, the global company's new device stood to offer providers in these targeted countries a significant clinical and economic benefit by helping identify patients whose health was deteriorating – without adding staffing resources. In turn, this hypothetically could help reduce admissions and patient mortality rates, while increasing staff efficiency. The global company would need scientific evidence to prove out the hypothesis for providers and payers.



Guidehouse next investigated the market to identify ideal care areas and patient segments for the technology. A detailed model tracked patient opportunity throughout hospital stay.

In the United States, while 183 million patients entered hospital systems each year, comprising a mix of patient admissions and emergency department visits, including overlap, 134 million unique patients would benefit most from vital signs monitoring, based on length of stay and medical need. Further stratification reduced this pool to 11 million ideal patient candidates, defined

as those with a high frequency of vitals collection and a higher risk of adverse events, most of whom were treated in the medical and surgical wards. The same exercise found an additional combined total of 13 million ideal patient candidates in Germany, France, and the United Kingdom. In other words, the outcomes of an estimated 24 million patients annually might benefit from the new digital health technology.

Next, the research team evaluated which of the two proposed generations of the technology presented the best value

proposition for the providers treating these ideal patients. Findings clearly showed one option was not cost-effective for many medical and surgical ward patients, so would significantly limit adoption. The other option – if buoyed by detailed clinical evidence to demonstrate the technology’s accuracy, efficiency, and link to clinical outcome improvements – could be positioned to drive market disruption, reaching an annual revenue of nearly \$350 million across the four targeted countries.

Impact

Importantly, the strategic market assessment findings helped the leadership team fully understand the tradeoffs and revenue implications of the business model and investment choices they could make, as well as how to navigate market development needs of each.

“If you believe these investment curves, and I do, then these investments are clearly worth it,” said the business unit leader.

As a result, the team confidently pursued the research and development strategy armed with specific success criteria and a detailed investment plan. The team also fully aligned on the size and nature of the true opportunity, and refocused clinical and commercial efforts to establish the technology’s benefit in highest-value patient segments first.

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