

# Ambient Insight Comprehensive Research Report

## The US Healthcare Market for Mobile Learning Products and Services: 2009-2014 Forecast and Analysis

*The bottom line is: Healthcare education is mobile.*



**"We Put Research into Practice"**  
[www.ambientinsight.com](http://www.ambientinsight.com)

### **Market Analysis by:**

Tyson Greer, CEO and Chief Content Officer

Published: September 2010

***To learn more about our research services, email:  
info@ambientinsight.com***

**Ambient Insight Copyright Policy:** All rights reserved. All media and research data published by Ambient Insight are protected by copyright. Unauthorized use of Ambient Insight research without prior permission is prohibited. Ambient Insight research products provide valuable financial data only to the individual purchaser or the purchasing organization. Purchasers may not modify or repurpose the information and financial data in our research in any manner. Specific distribution rights are provided based on the license model granted at time of purchase.

**Quoting Ambient Insight Research:** Permission is required to use quotes, tables, diagrams, or charts from Ambient Insight research in press releases, promotional material, external presentations, or commercial publications. Permission from Ambient Insight is required to reproduce or distribute in entirety any table, paragraph, section, or report.

## Table of Contents

List of Tables .....	3
List of Figures .....	3
Executive Overview .....	5
What You Will Find in This Report .....	8
Methodology, Scope, and Definitions.....	9
Related Research .....	11
The US Healthcare Market for Mobile Learning Products and Services: 2009-2014 Forecast and Analysis .....	11
Key Findings .....	13
What Do Buyers Want?.....	14
Mobile Technology and Social Trends Fuel Patient Education .....	15
Industry Issues .....	18
New Business Models for Wireless Carriers.....	18
The Rush for Electronic Health Records (and Personal Health Records) .....	20
Technology Advances .....	21
Demand-side Analysis.....	24
The mHealth Demographic.....	24
Who is the Buyer? The Ongoing Shift in the Buyer Demographic.....	26
Supply-side Analysis .....	29
Packaged Applications and Content .....	30
Services .....	42
Technology .....	46
US Market Trends.....	50
Market Inhibitors.....	50
Market Catalysts .....	53
International Trends .....	56
Revenue Opportunities and Recommendations .....	59
Consider the Expert Patients .....	59
Improve Performance and Efficiency .....	60
Guard the Data .....	60
Track the Technology.....	61
Follow the Money .....	63
Index of Suppliers Mentioned.....	65

## List of Tables

Table 1 - 2009-2014 Healthcare Forecast for Mobile Learning Products and Services (in \$US Millions).....	13
Table 2 – 2009 Total Number of Clinical and Technical Healthcare Practitioners by Job Role .....	24
Table 3 – 2009-2014 Healthcare Mobile Learning Buyers by Nine Buyer Types (in \$US Millions) .....	27
Table 4 - 2009-2014 Healthcare Forecast for Mobile Learning Products and Services (in \$US Millions).....	29
Table 5 - 2009-2014 US Healthcare Mobile Learning Packaged Applications and Content Revenues by Content Category (in \$US millions).....	31
Table 6 - 2009-2014 Healthcare CME Delivery Method by Percentage .....	36
Table 7 - 2009-2014 Revenue Forecasts for Healthcare Mobile Learning Services.....	42
Table 8 - 2009-2014 Revenue Forecast for Healthcare Mobile Learning Tools, Device-embedded Learning, and Technology (in \$US Millions) .....	46
Table 9 - Employment of Wage and Salary Workers in Healthcare, 2008 and Projected Change, 2008-2018. (Employment in Thousands) .....	54
Table 10 - Employment in Healthcare by Industry Segment, 2008 and Projected Change, 2008-2018 (Employment in Thousands) .....	55

## List of Figures

Figure 1 – The Rise of mHealth: Suppliers Integrating Mobile Learning into Clinical Applications.....	5
Figure 2 – Definitions of Mobile Learning Products and Services .....	10
Figure 3 – 2009-2014 US Growth Rates for Mobile Learning Products and Services in the Healthcare Segment .....	12
Figure 4 – Factors Driving Adoption of Mobile Learning in Healthcare .....	13
Figure 5 - The Carrier Waves: An Extraordinary Range of Wireless Technologies Support Mobile Learning .....	23
Figure 6 – 2009 US Healthcare Learning Products and Services Supply Chain.....	26
Figure 7 – 2009-2014 Comparison of Buyers by Percent of Healthcare Mobile Learning Expenditures .....	28
Figure 8 - 2009–2014 US Healthcare Mobile Learning Growth Rates for Packaged Applications and Content by Content Category .....	31

Figure 9 - 2009-2014 US Healthcare Mobile Learning Forecast by Top Revenue Generating Content Type (in \$US millions) .....32

Figure 10 -US Professions that Require Continuing Education Credits to Maintain Licensure .....36

Figure 11 - 2009-2014 US Mobile Learning Methods in Healthcare CME.....37

**This is a Comprehensive Report. Ambient Insight has four types of syndicated market research reports:**

**Comprehensive Reports** are 60-75 page reports that provide detailed analyses and revenue forecasts for content, content services, technology services, and technology for a specific product type and break the revenue out by multiple buyer types and segments.

**Targeted Reports** are 25-40 page reports that provide industry-wide analysis, an analysis of a particular product type, or an analysis of a specific buyer segment.

**Research Briefs** are 15-20 page reports that highlight revenue opportunities, provide trend analyses, and forecast revenues for a particular sub-category of content, service, or technology.

**Revenue Snapshots** are 2-3 page reports that include a single revenue forecast table from a current market report. Please review the free Executive Overview for each report for a list of available tables. Contact us at [info@ambientinsight.com](mailto:info@ambientinsight.com) to request a specific Revenue Snapshot.

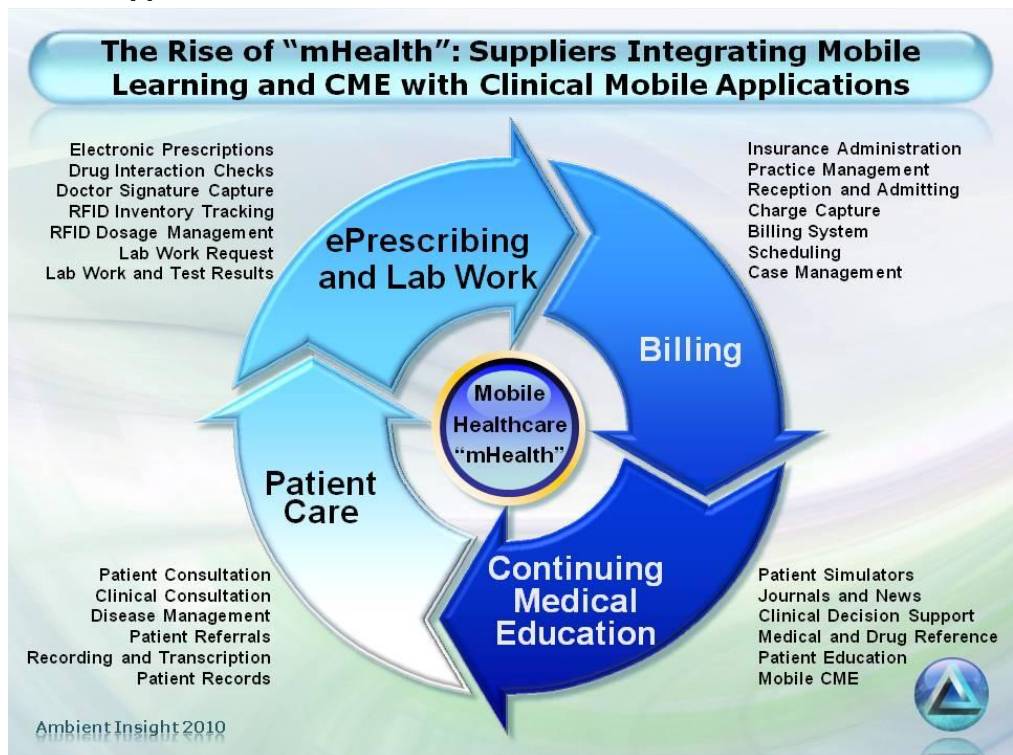
## Executive Overview

Over the last several years, we have witnessed the acceptance and then the acceleration of mHealth. Mobile Health or mHealth means supporting medical and public health practices via mobile handheld devices, patient monitoring devices, and other wireless technologies.

Around the globe, mHealth is growing rapidly in concert with the widespread availability of mobile phones. In rural areas and in developing regions, mHealth connects healthcare professionals with patients living far away from health services. In developed countries, mHealth also enables a level of in-home care not previously possible.

Originally, mHealth referred to collecting and transmitting a patient's vital signs, clinical or community health data; but the term's usage has expanded to include a variety of patient education and performance support activities for healthcare practitioners—what we at Ambient Insight identify as Mobile Learning.

**Figure 1 – The Rise of mHealth: Suppliers Integrating Mobile Learning into Clinical Applications**



The US healthcare market for Mobile Learning products and services climbed to \$104.44 million in 2009. Over the forecast period (2009-2014), overall demand will grow by a healthy 24% compound annual growth rate (CAGR) and revenues will reach \$306.67 million by 2014.

According to the Bureau of Labor Statistics, "ten of the 20 fastest growing occupations are healthcare related." Between 2008-2018, employment of home health aides is expected to increase by 50%. Healthcare workers will continue to need performance support and training.

The market for Mobile Learning in the healthcare segment is opaque, as it includes portions of other learning technology buyer segments such as associations, NGOs, and non-profits; corporations and businesses; and higher education. The answer to the question, "Who is the buyer?" is not easily discerned. This report addresses that question, as well as "What do buyers want?"

Demand will remain robust throughout the forecast period. Sales of healthcare Mobile Learning packaged applications and content will outpace sales of both Mobile Learning services and technology products. The growth in content comes from a wide variety of companies.

There are new names such as QD Ideas, iAnesthesia, Nerdcore Learning, and SoundTells; and well-known consumer brands such as Weight Watchers and Men's Health; as well as veteran Mobile Learning suppliers such as Modality who continue to expand their product lines.

Suppliers who were already succeeding in one content category such as continuing medical education (CME) have enlarged their scope to provide products in additional content categories such as study guides and reference products or services. The personalization features of Skyscape's Mobile Learning product called CME STAT is just one example.

Many suppliers now offer an integrated system of medical information for mobile devices and often, as is the case with the popular Epocrates Rx, the reference material is provided at no cost. Suppliers have experimented with a variety of business models, from offering premium and free content to providing fee-based or subscription services.

Custom content service providers are partnering with veteran healthcare and medical content publishers such as Elsevier and Lippincott Williams & Wilkins and well-known brands such as Tylenol to create a wide variety of custom Mobile Learning content and hosted services.

This type of collaboration with authoritative third-party content providers is still a smart route for new supplies trying to enter the market and for existing suppliers attempting to expand their offerings.

The stunning advances in mobile device technology such as location-awareness, faster processing speeds, and high-quality digital imaging are contributing significantly to the growth of Mobile Learning. The availability of high-speed bandwidth and new device capabilities are enabling sophisticated multimedia Mobile Learning applications, including simulations and game-based learning.

However, the recent proliferation of operating systems and nonstandard browsers combined with rapidly evolving devices will create more chaos than certainty for developers planning to release Mobile Learning products in the foreseeable future.

Developers will weigh the odds between developing native apps to take advantage of unique device features or creating Web-based apps and

services to serve a cross-platform market. This report highlights the pros and cons of each option, as well as addressing other market inhibitors.

In response to the ubiquity of connected mobile phones and handhelds, the previous trend for suppliers to provide mobile devices pre-packaged with Mobile Learning healthcare content has diminished. This report offers new insights on the evolving supplier and buyer/user categories, as well as the growth percentages and revenue forecasts for specific healthcare Mobile Learning content types, services, and technology.

A 2009 study funded by the Agency for Healthcare Research and Quality and published in the Annals of Internal Medicine found that patient education on after-hospital care saves money by reducing re-admissions and ER visits by 30%.

Several factors in the healthcare ecosystem are converging to drive the growth of Mobile Learning, not the least of which is user expectations and readiness. The changing demographics of healthcare consumers coupled with an accelerated need among healthcare providers to achieve greater levels of efficiency, reduce medical errors, and improve patient outcomes creates a healthy environment for Mobile Learning suppliers.

The emergence of the so-called "Expert Patient" in the last few years has created a strong demand for consumer-facing healthcare content. In the last two years, there has been an explosion in the number of mobile consumer and patient education healthcare applications and content. The very latest trend emerging is the integration of social networking features into these products.

A totally new type of product that Ambient Insight refers to as "intelligent medical jewelry" has emerged in the last year. Many of these wearable devices provide procedural "step-by-step" instruction to patients or caregivers, and are defined as Device-embedded Learning products by Ambient Insight.

New suppliers continue to enter the market at a steady pace. New **native** Mobile Learning development tools and delivery platforms continue to come on the market including highly specialized tools designed to create Location-based Learning, augmented reality, flashcards, exams and practice tests, and applications that will run on ebook readers and dedicated gaming devices.

Consumers and healthcare buyers, who increased spending on Mobile Learning even at the height of the recession, are driving the current overall US Mobile Learning market. Since the recession began, the healthcare segment has added over 730,000 jobs. According to a May 2010 report by the US Bureau of Labor Statistics (BLS), the healthcare segment has been adding an average of 19,700 jobs a month over the last 2 years.

Essentially, the healthcare Mobile Learning market has been immune from the recession. Ambient Insight expects this trend to continue throughout the forecast period.

Ambient Insight has identified a distinct change in the healthcare buyer demographic and this report describes a dramatic shift unfolding over the forecast period. Clearly, there are significant revenue opportunities for suppliers that know who the buyer is in the healthcare segment.

## **What You Will Find in This Report**

This report provides extensive examples of competitors, products, and buying behaviors to help suppliers understand the market. This is evidence-based data designed to help suppliers create sustainable business models, develop competitive products, execute on go-to-market strategies, and generate significant revenues and profit.

The two major sections in the forecast and analysis section of this report provide a demand-side analysis and a supply-side analysis. The demand-side analysis in this report breaks out the expenditures for Mobile Learning products and services by nine distinct buyer types in the US healthcare segment:

- Consumers
- Students
- Professional individuals
- Healthcare associations
- Providers
- Teaching institutions
- Government funding to organizations
- Direct purchases by government agencies
- Pharmaceutical, device, EHR, and publishing companies

The supply-side analysis in this report forecasts the expenditures for three major categories of Mobile Learning products and services for the US healthcare segment:

- **Packaged Applications and Content** - broken out by eight major content types:
  - Language learning
  - General education, study guides, and reference
  - Simulation and game-based Learning
  - Medical, health, nutrition, and fitness
  - Business, sales, and finance
  - Handheld decision support
  - Professional licensure, continuing education (CE), and continuing medical education (CME)
  - Professional training and development
- **Services** - including custom content development and software-sold-as-a-service (SaaS)
- **Technology** - including development tools, Device-embedded Learning, and installed platforms

**NOTE:** *A highly-detailed analysis of the overall demand for Mobile Learning in the US across all eight buying segments is included in a separate Ambient Insight report called, "[The US Market for Mobile Learning Products and Services: 2009-2014 Forecast and Analysis](#)"*

We provide an analysis of the US market including key findings, trends, market inhibitors, and market catalysts.

A great deal of innovation is occurring outside the US, and we also provide an overview of healthcare-related international Mobile Learning trends.

Answering the question, "who is the buyer?" can be a daunting task for suppliers competing in the US healthcare Mobile Learning market. This report provides an analysis of the buying behavior of the top buyers in the industry.

Finally, we identify the most lucrative revenue opportunities for suppliers and offer our recommendations to compete successfully in the US healthcare Mobile Learning market.

## ***Methodology, Scope, and Definitions***

Ambient Insight provides market revenue forecasts based on our proprietary Evidence-based Research Methodology (ERM). The ERM is an iterative process based on predictive analytics used to identify revenue opportunities for suppliers.

ERM progresses from general patterns (the big picture) to very precise particular patterns. It is used to create a forecast model comprised of relevant predictors.

The forecast model is refined as additional data becomes available. Ambient Insight triangulates baseline revenues from three analysis vectors that include:

- Supply-side analysis
- Demand-side analysis
- Product and Service category analysis

Once the baseline revenues are triangulated, Ambient Insight uses the data to forecast the Total Addressable Market (TAM). Ambient Insight uses the data derived from the ERM process literally as evidence to support our market forecasts.

### **Scope**

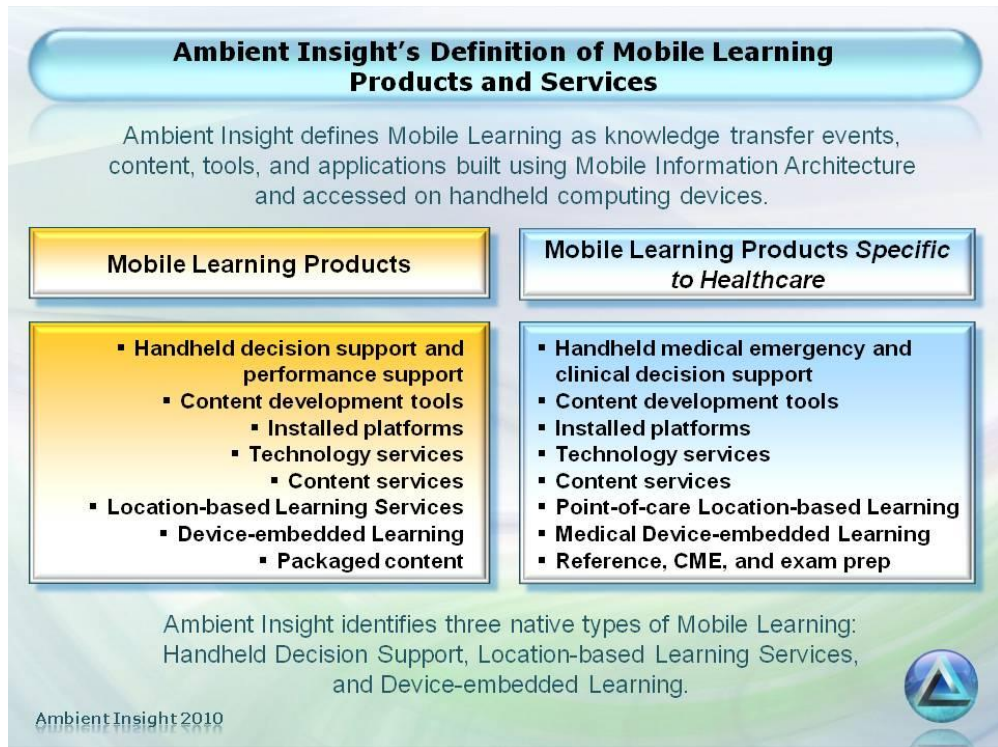
The data in this report are US-centric and only the buying behavior of US buyers is analyzed regardless of whether they buy from offshore vendors.

### **Definition of Mobile Learning**

Ambient Insight defines Mobile Learning as knowledge transfer events, content, tools, and applications built using Mobile Information Architecture and accessed on handheld computing devices.

In our taxonomy, laptop and netbook computers, while mobile, are not considered handheld devices.

**Figure 2 – Definitions of Mobile Learning Products and Services**



Ambient Insight defines three major types of "native" Mobile Learning products: Handheld Decision Support, Location-based Learning services, and Device-embedded Learning.

It should be noted that there are mobile and handheld versions of the seven other learning product types tracked by Ambient Insight. To the extent that they have been modified substantially from their original format into mobile formats they are considered Mobile Learning products.

- **Handheld Decision Support** is an interactive application that provides sequential performance and decision support based on the input provided by the user. Handheld Decision Support is very common in corporate mobile field force, government first responder, and clinical healthcare environments.
- **Location-based Learning Services** are based on location-based services (LBS) technology. It is a type of knowledge transfer based on location-based intelligence enabled by wirelessly networked interfaces and sensors adapting to the presence of the user at a specific location. Global Positioning System (GPS) chips, Radio Frequency Identification (RFID) chips, and 2D and 3D bar codes are often used in this type of learning, particularly in clinical healthcare environments, first responder situations, museums, consumer education, and in the tourist industry.
- **Device-embedded Learning** is when the primary purpose of a handheld computing device is to enhance learning, access educational content, and assess and support performance. The device functions as a personal learning system. Examples in the healthcare segment include devices that provide procedural step-by-step information to patients and caregivers.

Although the terms Electronic Health Records (EHR) and Electronic Medical Records (EMR) are sometimes used interchangeably, this report uses the EHR term.

## ***Related Research***

Buyers of this report may also benefit by the following Ambient Insight market research:

- [The US Market for Mobile Learning Products and Services: 2009-2014 Forecast and Analysis](#)
- [The Worldwide Market for Mobile Learning Products and Services: 2010 Research Brief](#)
- [The US Consumer Market for Brain Fitness Products: 2009-2014 Forecast and Analysis](#)
- [The Worldwide Market for Self-paced eLearning Products and Services: 2009-2014 Forecast and Analysis](#)
- [The US Market for Self-paced eLearning Products and Services: 2009-2014 Forecast and Analysis](#)
- [Private Investment Trends in the US Learning Technology Industry: 1999-2008 Longitudinal Analysis](#)
- [Ambient Insight's 2010 Learning Technology Research Taxonomy](#)



"We Put Research into Practice"  
[www.ambientinsight.com](http://www.ambientinsight.com)