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medical

Hospital
Medical insurance

Introduction



Every day, millions of Americans start their morning the same way: with a handful of prescription pills. In fact, nearly a third of all adults take five or more medications regularly. Thanks to advancements in science and technology, close to 6,800 prescription medications and countless over-the-counter drugs are available in the United States. The influx of medications available on the market has caused prescription drug use to explode.¹

This alarming trend is exacerbated by the shifting national demographic: a massive number of aging baby boomers, many of whom will soon require senior care. The considerable increase in drug consumption brings with it a growing risk of harm. This white paper examines how doctors and caretakers can use electronic health records (EHRs) to manage medications and mitigate risk in an increasingly drug-dependent world.



Medication errors: a macro view

The total cost of looking after patients as a result of medication-related errors exceeds \$40 billion each year in the United States.²

Medication-related adverse drug events, a

common medication error, occur in approximately 1.5 million inpatients every year in the United States. Of the 1.5 million ADEs occurring annually, approximately 400,000 are considered preventable.³

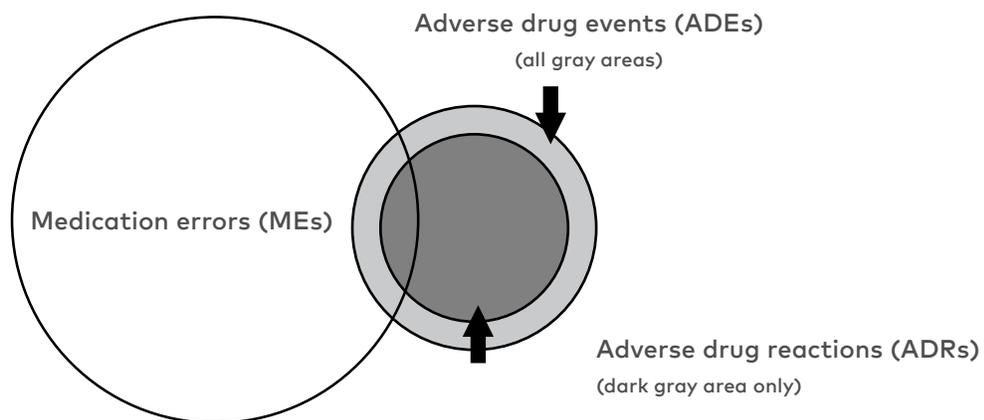
What is an ADE?

✓ Adverse drug events (ADEs): Unexpected medical occurrences that present during treatment with a pharmaceutical product which may or may not be causally related. ADEs can be categorized as preventable and non-preventable and do not always indicate poor quality of care.

✓ Adverse drug reactions (ADRs): Harms directly caused by a drug at normal doses.

✓ Medication errors: Preventable, inappropriate uses of a drug that may or may not result in harm and can occur during prescribing, transcribing, dispensing, administering, adherence or monitoring of a drug.

Figure 1. Examples of medication errors.⁴



ADRs are a subset of ADEs, as shown in the chart above.

Seniors face disproportionately high risk of medication complications

There's no doubt that medications are a critical component of care for the elderly, especially for residents in senior living communities who require ongoing care. Administered correctly, they offer effective treatment for both chronic and acute ailments. Improperly managed medications, however, can cause serious medication-related hazards — and seniors are particularly at risk.



What causes an increased risk of ADEs?

The risk of complications is heightened by the number of medications a patient takes — this is true for anyone on a prescription drug regimen. Older adults, including those residing in senior living communities, take more medicine than

any other age group.⁵ Generally considered the largest risk factor for ADEs, polypharmacy refers to the simultaneous use of multiple drugs to treat a single ailment or condition. Staggeringly, more than four in ten older adults take five or more prescription medications, triple the rate from twenty years ago. Nearly 20 percent take ten drugs or more.⁶ Older adults are particularly vulnerable to ADEs due to the sheer volume of medications they're prescribed.

The prescribing cascade

If it's hard to believe that the typical senior living resident takes more than five prescription drugs a day, consider the prescribing cascade. The prescribing cascade begins when a drug is prescribed, an adverse drug event occurs, the ADE is misinterpreted as a new medical condition, and another subsequent medication is prescribed to treat the drug-induced condition.

Identifying and suspending prescribing cascades is an important and often overlooked opportunity to improve medication safety in older people.

Gaps in communication

Compounding the already-high risk of ADEs, seniors are put further at risk when potential side effects aren't properly communicated. According to a recent study, when physicians failed to verbally provide information about potential side effects, older adults incorrectly assumed that 55% of their medications had none.⁷

Research by the International Pharmaceutical Federation also shows that an increased understanding of medication — as a result of asking questions and seeking answers about one's prescriptions — can lead to fewer medication errors and ADEs.⁸

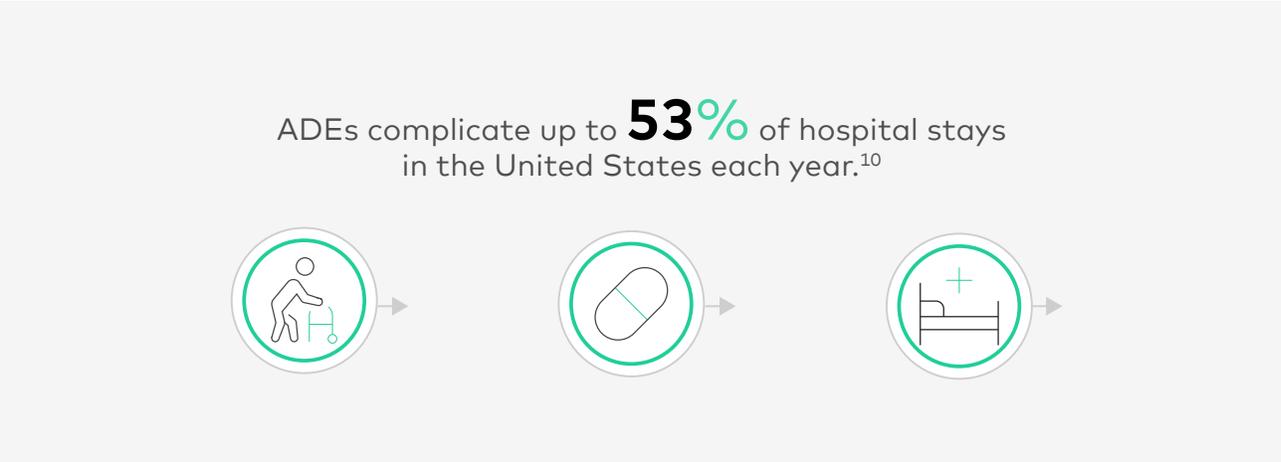


Older adults face more emergency room visits

Knowing older adults take more prescription drugs than any other age group, it's unsurprising to see they're twice as likely than younger persons

to visit the emergency room due to an ADE and seven times more likely to be hospitalized after an ER visit as a result.⁹

Figure 2. Hospital Stays Complicated by Adverse Drug Events



Technology: the key to oversight



Historically, medication management involved reading pill bottles and relying on local pharmacies to flag drug interactions. Prescriptions were often self-administered or administered by family members. But progressively complex health issues, combined with the prevalence of medication use and abuse, necessitate more involved oversight. For residents in senior living communities, the responsibility has largely shifted to healthcare staff — guided by the federal government.

HITECH and the proliferation of electronic health records (EHRs)

Motivated in part to reduce medical errors, the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009, as well as the 21st Century Cures Act of 2016, authorized incentive programs for meaningful use of electronic health records (EHRs). Prior to the introduction of the HITECH Act, only 10% of providers had adopted EHRs, and there has been substantial growth ever since.¹¹ The impact of this technology in senior living communities is significant — when staff have access to complete and accurate resident records, residents receive better care.

A national survey of doctors offers important evidence¹²



of providers report their EHR makes records readily available at point of care



report their EHR produces clinical benefits for the practice



of providers report their EHR allows them to deliver better patient care

EHR versus eMAR: what's the difference?

Considering the nomenclature and benefits of these systems are similar, there can be some confusion between the two. But there is an important distinction, especially as it pertains to the way in which each is used in caring for residents and mitigating risk.

EHR

Electronic health records, like Yardi EHR, offer a look into the total health of each patient with point-of-care charting that highlights comprehensive resident information, including dietary requirements, insurance information, emergency contacts, vitals and weight, social history and progress notes.

eMAR

Electronic medication administration records, such as Yardi eMAR, streamline medication administration by enabling real-time communication between interfaced pharmacies, assisted living communities and health care staff.



Using electronic systems to mitigate errors

Computer monitoring systems that reduce medication errors, like Yardi EHR, can prevent anywhere from 28% to 95% of ADEs.¹³

YARDI EHR REDUCES THE RISK OF ERRORS WITH:

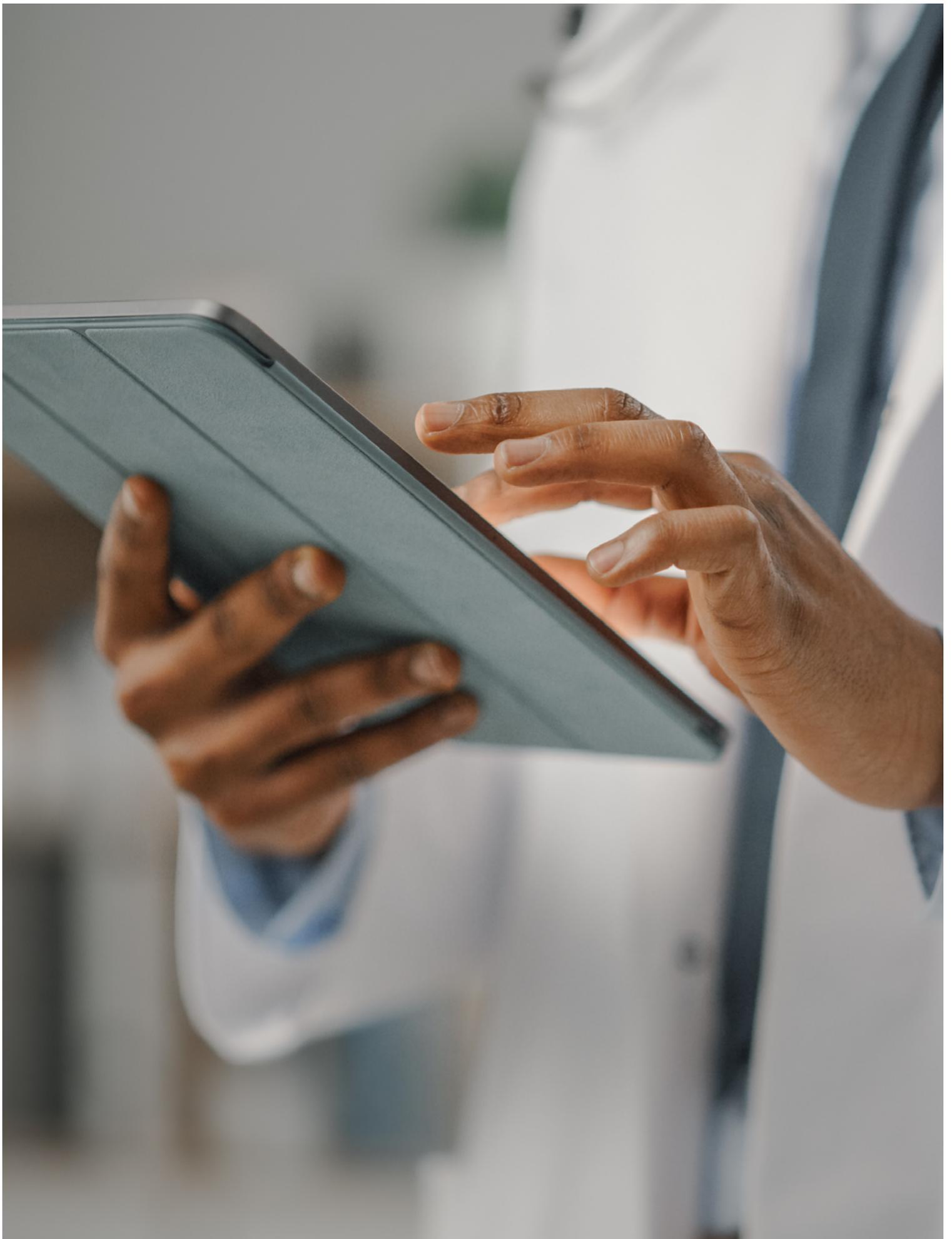
- ✓ Electronic medication and treatment administration records
- ✓ Configurable resident assessments and care plans
- ✓ Real-time staff notifications with resident care updates
- ✓ Incident tracking and analysis
- ✓ Behavior management tracking
- ✓ Wound care tracking
- ✓ Easy assignment of incident follow-up procedures based on role
- ✓ Ability for caregivers to work online and offline, with automatic syncing
- ✓ Duplicate drug therapy screening, drug interaction and allergy screening

Computerized medication order entry programs, like Yardi eMAR, have the potential to prevent an estimated 84% of dose, frequency and route errors.¹⁴

YARDI EMAR MINIMIZES MEDICATION MISMANAGEMENT BY OFFERING:

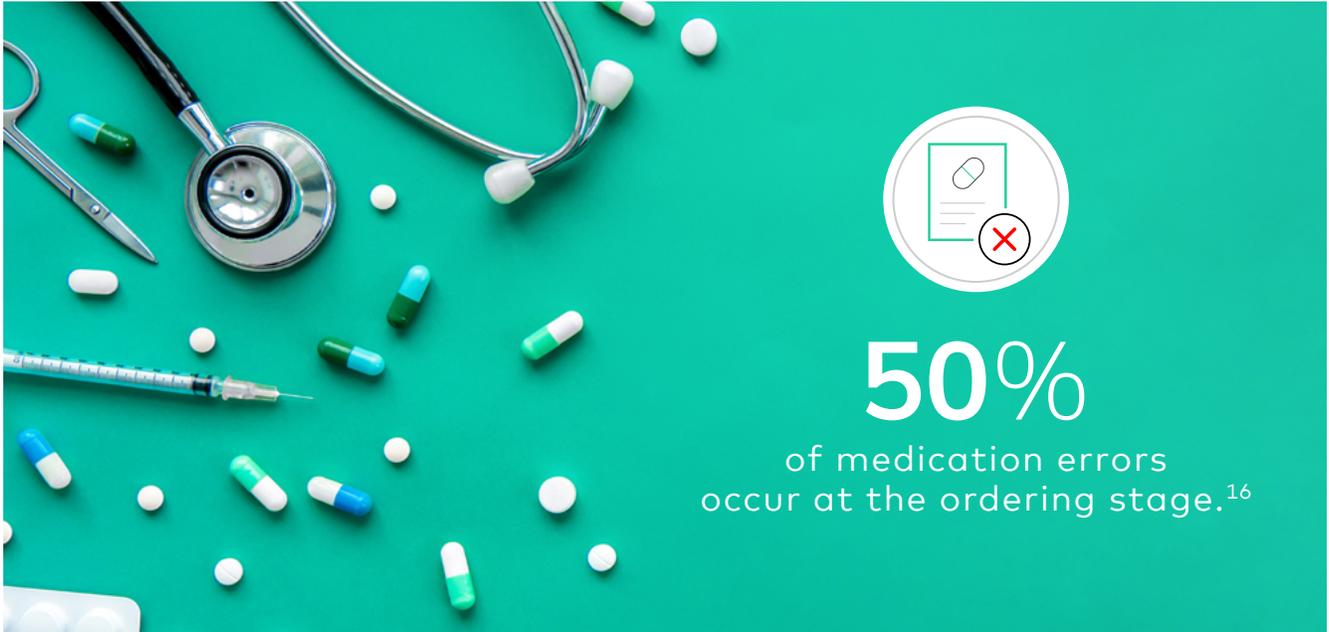
- ✓ Single-click electronic refill requests and drug inventory tracking
- ✓ Advanced drug database intelligence for medication lookup and order entry auto population
- ✓ Efficient physician cycle approval through secure, online, third-party logins
- ✓ Intuitive workflows and reminders for staff
- ✓ Automated alerts for missed medications or excessive use of PRN drugs by a patient
- ✓ Multidirectional communication with leading pharmacy software systems
- ✓ Compatibility with barcode scanning systems
- ✓ Online staff training and continuing education





What kind of medication errors are most common?

Approximately 1.5 million people in the United States are harmed from prescription drug medication errors every year, and it is estimated that over 50% of those errors happen in nursing homes.¹⁵



Medication errors generally occur during the following stages:

- 1. Ordering/prescribing*
- 2. Documenting*
- 3. Transcribing*
- 4. Dispensing*
- 5. Administering*
- 6. Monitoring*

As shown, medication errors are most common during the ordering stage, including writing the wrong medication, route, dose or frequency. Ordering-related errors account for approximately 50% of all medication errors.



Why do most errors occur?

There are many factors that may influence medication errors. They can be grouped into several categories:

HUMAN FACTORS:

- ✓ Lack of training or experience
 - ✓ Inadequate drug knowledge
 - ✓ Inadequate knowledge of the patient
 - ✓ Overworked or fatigued caregivers
 - ✓ Poor communication with patients, other caregivers or pharmacy staff
 - ✓ Literacy, language barriers and other personal factors
 - ✓ Complexity of the condition, including high-risk medications and polypharmacy
-

ENVIRONMENTAL FACTORS:

- ✓ Workload and time pressures
 - ✓ Distractions and interruptions
 - ✓ Lack of standardized protocols and procedures
 - ✓ Insufficient resources
 - ✓ Lack of accurate patient records
-

PHARMACEUTICAL FACTORS:

- ✓ Improper labeling or packaging issues
 - ✓ Confusing medication nomenclature
 - ✓ Calculation, compounding and drug preparation errors
-

The complete clinical package

The benefits of electronic health records go beyond medication management and mitigating the risk of medical errors. Yardi EHR offers next-generation point-of-care charting and clinical intelligence, enabling staff to collaborate and coordinate care like never before.



More benefits of Yardi EHR

✓ *Improved resident engagement*

Residents and their families can get involved in the care plan, thanks to self-service portals that allow residents to request appointments, check lab results and set reminders for services like flu shots.

✓ *Unsurpassed resident privacy*

Built-in comprehensive safeguards and controls, in compliance with HIPAA Privacy Rule and Security Rule best practice recommendations, along with data encryption, SOX-compliant controls and multi-tiered security protocols, ensure data is secure and protected against virus and malware attacks.

✓ *Increased personalization*

The demands on caregivers can lead to one-size-fits-all treatment. Increased efficiencies allow staff to spend more time with residents — and less time tending to administrative tasks — resulting in more customized care.

✓ *Increased revenue*

Yardi EHR reduces the overall cost of ownership thanks to higher resident retention, more accurate care assessments and proper billing.

✓ *Expanded executive oversight*

Advanced clinical reporting, detailed analytics and instant access to financial data ensures financial decisions are based on the realities of clinical care.

✓ *Reduced exposure to litigation*

Protect your organization and reduce your exposure to potential legal fees with proactive resident care management and properly documented service plans and service records.

The future of EHRs

It's undeniable that technology is changing the traditional senior living model. As staff and residents become more tech-savvy, the impact of technology will continue to transform the landscape. Here are just a few ways EHRs may evolve in the coming years.



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Comparative treatment

When it comes to creating a regimen for residents with complex conditions, doctors can look forward to comparative treatment, where they can search for other patients with a similar health chart to see how they respond to a course of care before deciding how to proceed.

Machine learning

Building on comparative care, machine learning — getting computers to act without being explicitly programmed — will allow staff to predict optimal service plans and outcomes. Machine learning can also streamline EHR use: as the system learns how staff interact with the software, it will reduce time spent navigating throughout the platform, reducing burnout.

Increased pharmacy precision

EHRs (and eMARs) will go beyond simply storing and sharing information — they'll actually compute data. This ability to calculate treatment regimens with precision — taking into account

residents' height, fluctuating weight and diet — promotes more accurate medication dosing and care plans.

Hands-free, voice recognition

While current EHRs offer a superior alternative to handwritten charts, caregivers are still required to input significant amounts of patient data. Innovative technologies, such as natural language processing, will allow staff to more quickly transcribe information.

Telehealth

The opportunities to deliver care virtually are significant. Remote appointments will allow for outpatient care and more convenient continuous oversight for inpatient residents at a lower cost.



Sources

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14 [LeadingAge](#) | 15 [Mcknight's Senior Living](#) | 16 [National Library of Medicine](#)



Yardi Systems, Inc. 430 South Fairview Avenue, Santa Barbara, California 93117
phone: +1 800 866 1144 | email: sales@yardi.com | Yardi.com

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