minuteful
for wound | by Healthy.io

Transforming Wound Care

How digitizing wound management
empowers staff, engages patients,
and ensures consistency

White paper

Table of contents

Introduction: The Wound Care Burden

White paper | **Transforming Wound Care** – How digitizing wound management empowers staff, engages patients, and ensures consistency

Introduction: The Wound Care Burden

Wounds—frustratingly prevalent, painful, and costly to treat—affect over 8 million Americans every year. They amount to an enormous burden on clinicians, patients, and healthcare systems, with annual Medicare costs reaching almost $100 billion[1] Wounds typically impact an already vulnerable, chronically ill, and older adult population, taking a toll on both their physical and mental well-being.

Wounds' prevalence is increasing, owing to an aging population, the rise in the number of people living with diabetes and other comorbidities that contribute to poor circulation, and the surge in obesity. This upward trend is expected to continue over the coming years, contributing to the growing strain on hospitals and medical staff in the wake of the global COVID-19 pandemic.

Studies have demonstrated that a data-driven approach to wound management can significantly improve healing rates and a patient's prognosis. However, the tools at the disposal of wound care clinicians are often rudimentary. The current methods of measuring, assessing, and documenting wounds make it difficult to make informed decisions about a patient's treatment plan.

Despite the increase in televisits for wound care, the core challenges facing nurses and wound care practitioners remain: inefficient workflows, interprovider variability in documentation, and lack of coordination across care teams. Digitizing wound management—from measurement to assessment to monitoring—can enable wound care professionals to streamline data collection, track healing progress, and support clinical decision-making to improve patient outcomes.

Healthy.io

‹ 4 ›

White paper | Transforming Wound Care - How digitizing wound management empowers staff, engages patients, and ensures consistency

Wounds:
A Growing Problem

8.2 million
million patients suffer from wounds in the United States[1]

4-10 days
longer hospital stay as a result of development of pressure ulcer[3]

$96.8 billion
spent annually on treatment of wounds in the United States[1]

$43,180
estimated increase in hospital costs related to pressure ulcers[4]

$3,927
mean cost of wound treatment[2]

17,000
lawsuits related to pressure ulcers annually[4]

Healthy.io

5

White paper | Transforming Wound Care – How digitizing wound management empowers staff, engages patients, and ensures consistency

The Data Challenge
in Wound Care Today

White paper | **Transforming Wound Care** – How digitizing wound management empowers staff, engages patients, and ensures consistency
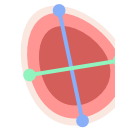
The Data Challenge in Wound Care Today

According to a recent survey, 90% of nurses still use traditional methods, such as paper rulers, for measuring and documenting wounds[5]. But despite their widespread use, such methods are often subjective and may yield inaccurate measurements, overestimating the area by up to 44%, or failing to account for changes in wound shape[6]. These methods are also subject to variability between clinicians, or from one visit to the next, even when performed by the same clinician. This lack of consistency results in a loss of clinical data that is critical for accurately tracking wounds' healing over time and making informed clinical decisions.

A lack of consistent assessment undermines optimal wound progress tracking. This can lead to inefficient interventions and delays in recognizing complications, which are strongly correlated with negative health outcomes.
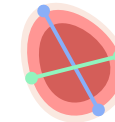
The accuracy and thoroughness of wound data are proportional to the time invested in documenting it. On average, it takes more than 10 minutes to correctly assess and document a wound. Since most patient visits take between 10-30 minutes, documentation processes invariably come at the expense of time spent tending to the wound, increasing the probability of rushed or incomplete documentation. According to a recent survey, most wound care nurses feel their current documentation methods are not good enough[5].

Maintaining high-quality wound assessment and documentation has also become increasingly difficult due to a rising shortage of nurses and other clinicians trained in wound care (only one nurse for every 500 wound patients)[7], growing documentation burdens, and decreased time at
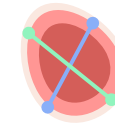
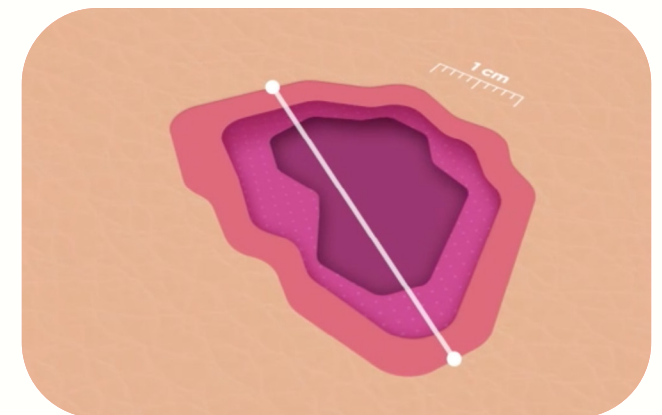### Same wound, different measurements

2cm x 5cm
10cm²

3cm x 6cm
18cm²

4cm x 5cm
20cm²

Healthy.io

‹ 7 ›

White paper | Transforming Wound Care - How digitizing wound management empowers staff, engages patients, and ensures consistency

The Data Challenge in Wound Care Today

the bedside. Some 63% of wound care nurses surveyed described their workloads as stressful or extremely stressful[5].

Furthermore, inaccurate or incomplete wound data and documentation can lead to denied claims or an increased risk of indefensible litigation. In fact, 40% of lawsuits are indefensible and 24% of claims are denied as a result of incomplete documentation[8]. With new telehealth regulations and Medicare reimbursement codes in place, complete documentation has become more important than ever in ensuring clinicians are getting properly reimbursed and patients are getting the most appropriate treatment. And while consistency and thoroughness are key, care teams must be able to adapt their workflows to their unique clinical and organizational needs. Their documentation processes must be flexible enough to support said workflows, and not run counter to their needs.

Complex documentation processes may also result in data silos, with acting clinicians unaware of other clinicians' assessments. One of the highest-risk times for a patient is during a handoff of care between providers[9]. These transitions carry a risk that documentation will not be transferred between providers. Without all of the data, clinicians may employ methods that have already failed to achieve outcomes or may not implement timely interventions at all.

Continuity of care involves tracking wounds over time, and a disjointed approach to wound assessment may complicate accurate wound prognosis and assessment of the effectiveness of interventions.

> A lack of consistent assessment undermines optimal wound progress tracking. This can lead to inefficient interventions and delays in recognizing complications, which are strongly correlated with negative health outcomes.

White paper | Transforming Wound Care - How digitizing wound management empowers staff, engages patients, and ensures consistency

The Power of Data
in Wound Care

White paper | *Transforming Wound Care* – How digitizing wound management empowers staff, engages patients, and ensures consistency

The Power of Data in Wound Care

A standardized measurement and documentation system can enhance clinician satisfaction, improve compliance, streamline workflows, and improve patient outcomes. Better data collection not only allows for interventions to be modified for more effective wound healing but also influences long-term treatment approachess.[10]

A data-driven approach promotes:

Data - driven decisions: Insights derived from meaningful, objective data combined with the clinician's professional judgment enhance the clinical decision-making process.

Patient - Centered Care: Data contributes to a more complete, holistic approach to wound care. It provides the clinical team with the resources necessary to more accurately personalize the patient's treatment plan, thereby improving the patient's quality of care and quality of life.[11]

Timely Access to Data: Getting relevant data when it's most needed is vital to identifying and responding to hospital acquired pressure injuries (HAPIs), and can help prevent further deterioration or stagnation. Data-driven approaches deliver data quickly to clinical teams and implement analysis methodologies to identify salient data**.**

Coordinated Care: Data-driven approaches to wound care provide all relevant stakeholders with access to the information they need to advance the care of the patient, reducing disruptions during care transitions.

Healthcare as a whole is benefiting from digital innovation and transformation. Advancements in EHRs, imaging technologies, and telehealth are improving the quality of care globally, yet wound care has traditionally lagged behind. Amid the COVID-19 pandemic, however, there has been a rapid shift toward the adoption of telehealth and smart wound tracking tools for wound care, empowering clinicians to finally take advantage of technologies that streamline care and improve patient outcomes.

Minuteful for Wound, Healthy.io's digital wound management solution, addresses the challenges clinicians face in wound care by enabling them to take automatic measurements using a smartphone, improve the accuracy and efficiency of the documentation process, and manage wounds from a centralized portal. Wound data obtained is immediately digitized and made accessible to any team member on the platform with access to the patient's medical records. This effectively breaks down care silos and propels coordinated care.

Healthy.io

< 10 >

White paper | Transforming Wound Care - How digitizing wound management empowers staff, engages patients, and ensures consistency

The Power of Data in Wound Care

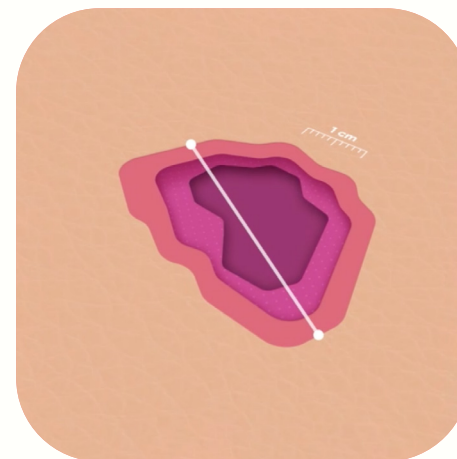## Consistent Measurement and Assessment

Healthy.io's technology makes it easy to obtain accurate and consistent wound measurements. Minuteful for Wound is HIPAA compliant, FDA registered, and CE marked. No special hardware is required: all that is needed are a smartphone and two calibration stickers designed to gauge spatial orientation and deliver three-dimensional measurements of the wound. Using proprietary color analysis algorithms, the solution produces a high-quality wound image providing for real-time measurements of the true wound area—a vast improvement over estimations based on length and width.

Minuteful for Wound captures a standardized, digital record of the wound, regardless of the user, the environment, or the lighting—without any subjective variations. Algorithms detect a wound's contour, depth and surface area and reduce the challenges around subjectivity and human error. Computer vision, 3D imaging, and machine learning technology are used to help clinicians analyze wounds with optimal accuracy, including the detection of various tissue types, which are especially valuable in gauging the healing process. Wound images are automatically calibrated for size, depth, lighting, and dimensions to create a 3D rendering of the wound.

The resulting reliable, data-rich documentation is crucial for clinical decision-making, identifying evolving conditions like HAPIs, and limiting liabilities by ensuring that documentation requirements are met.

Healthy.io

‹ 11 ›

White paper | Transforming Wound Care - How digitizing wound management empowers staff, engages patients, and ensures consistency

The Power of Data in Wound Care

Faster Documentation

Minuteful for Wound dramatically reduces documentation time for follow-up visits by automatically capturing wound measurements and tissue type. The in-app documentation process securely stores the relevant data from one session to the next and is fully configurable with clinicians' workflows and fully integrates with most EMRs, including Epic and Cerner.

A dynamic assessment flow within the app adapts based on the clinician's goals and course of treatment. Embedded features such as autofill and automated clinical summary make it easy to produce accurate and thorough documentation significantly faster than current methods (about 1.5 minutes for follow-up visits including the scan and assessment). Less time spent on documenting reduces the workload burden and leaves more time for patient-centered care.
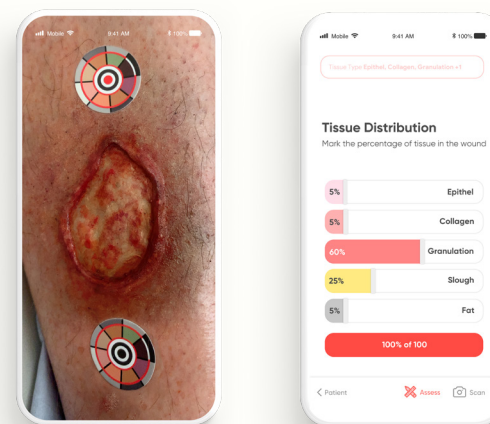
Upskilling Care Teams

Using Minuteful for Wound, less experienced staff can help manage wounds under the remote guidance of expert clinicians, allowing for enhanced collaboration, upskilling junior staff, and accelerated onboarding. Skill mixing eases the burden on senior staff while empowering junior nurses to provide quality care under specialist supervision, allowing for better allocation of staff and resources while ensuring continuity of care.

> **Less time spent on documenting reduces the workload burden and leaves more time for patient-centered care.**

The Power of Data in Wound Care

Centralized Wound Data

The solution consolidates all of the data collected by clinicians into a single web-based portal, which can be accessed by all members of the care team. This centralized portal serves as a single source of truth, preventing fragmented documentation and variability caused by multiple sources of information. Centralized wound data also allows specialists to evaluate wounds remotely and advise on new or modified interventions, including discontinuing unnecessary treatments for wounds that have sufficiently healed. With all of the data in one location, clinicians can get the full picture of the patient and make confident, cohesive decisions for improved patient care.

Identify and Intervene

Minuteful for Wound enables clinicians to quickly and easily track wound healing progress over time. Pressure injuries and wounds are consistently documented from admission until discharge, reducing the risk of HAPIs. Advanced algorithms automatically capture wound measurements and analyze tissue distribution in real time within the app. This ensures that wounds are evaluated consistently and objectively, whether or not the clinician is a wound care specialist. Wound data is transferred to the portal for continuous monitoring and assessment, allowing for quick identification of wounds that require specialist intervention.

Improve Patient Outcomes

The most important benefit of digitizing wound management is improved patient outcomes. Clinical teams with accessible, consistent, and objective data can provide personalized treatment and respond more quickly to changes. This results in shorter treatment times and lower costs. Additionally, clinicians can share engaging visual "time-lapse" records of each wound's progress, offering patients an unmediated look at the healing process that has been shown to boost their engagement and adherence to care plans.

Conclusion

White paper | *Transforming Wound Care* – How digitizing wound management empowers staff, engages patients, and ensures consistency

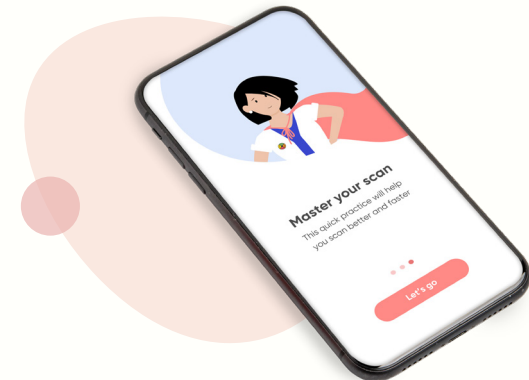# Conclusion

We are in a data-driven age, yet the resources available in wound care are lagging. Wound care clinicians work tirelessly to provide the best care for their patients, but they are frustrated by the limitations of clinical technologies and the burden of documentation.

The disruptive effects of the COVID-19 pandemic, coupled with an increasing demand for quality care, have placed an ever-growing premium on clinicians' time and resources, which are limited to begin with. While COVID-19 has helped usher in a new normal of telehealth in wound care, it has further exposed the core challenges of wound management.

Digital wound management solutions can transform best practice in wound care by ensuring consistent documentation, facilitating continuity of care, streamlining workflows, and reducing cost of care. With Minuteful for Wound, Healthy.io brings digital transformation to wound care, improving the clinical decision-making process with critical and consistent data. By digitizing wound care, clinicians can make a difference in the lives of their patients every day, during the current pandemic and beyond.

Conclusion

1. Sen, Chandan K. "Human wound and its burden: updated 2020 compendium of estimates." Advances in wound care 10.5 (2021): 281-292.

2. Fife CE, Carter MJ. Wound care outcomes and associated cost among patients treated in US outpatient wound centers: data from the US Wound Registry. Wounds. 2012;24(1):10-17. https://pubmed.ncbi.nlm.nih.gov/25875947/ Accessed March 10, 2022.

3. Leaf Healthcare. The financial impact of pressure ulcers. Pleasanton, CA: Leaf Healthcare; 2016. Accessed March 10, 2022.

4. Agency for Healthcare Research and Quality. Quality and Patient Safety Resources. Rockville, MD: Agency for Healthcare Research and Quality; last reviewed 2019. https://www.ahrq.gov/patient-safety/resources/index.html. Accessed March 10, 2022.

5. Healthy.io Survey Report - Wound Care Nurses: We don't have the right tools to deliver the best patient care (2022).

6. Jørgensen LB, Sørensen JA, Jemec GB, Yderstraede KB. Methods to assess area and volume of wounds - a systematic review. Int Wound J. 2016;13(4):540-553.

7. Cassata A. Why every provider should have wound care knowledge. HomeCare. 2018. https://www.homecaremag.com/september-2018/nurse-wound-care-expert Accessed March 10, 2022.

8. McVey DT, Scheurich A. Avoiding costly pitfalls in wound care [webinar]. WoundRounds.com. 2011. http://woundrounds.com/webinar-ondemand-avoiding-costly-legal-pitfalls-in-wound-care/. Accessed March 10, 2022.

9. The Joint Commission. Inadequate hand-off communication. Sentinel Event Alert. 2017;58:1-6. https://www.jointcommission.org/-/media/tjc/documents/resources/patient-safety-topics/sentinel-event/sea_58_hand_off_comms_9_6_17_final_(1).pdf?db=web&hash=5642D63C1A5017BD214701514DA00139. Accessed March 10, 2022.

10. Ho CH, Bogie KM. Integrating wound care research into clinical practice. Ostomy Wound Manage. 2007;53(10):18-25. https://www.o-wm.com/content/integrating-wound-care-research-clinical-practice. Accessed March 10, 2022.

11. Brown A. The principles of holistic wound assessment. Nurs Times. 2015;111(46:14-16).

About Healthy.io

Healthy.io is the global leader in turning the smartphone camera into a medical device, delivering healthcare at the speed of life. With our Minuteful at-home urinalysis and digital wound management services, we empower payers, providers, and healthcare systems to improve patient engagement, health outcomes, and access to care.

Contact us to find out how you can transform your wound care practices and improve your clinical workflows.

Digitize your wound care program.