

(HE-001) Billing Discrepancies Using Photo Documentation That Measures True Surface Area Versus Conventional Measurements of Length x Width



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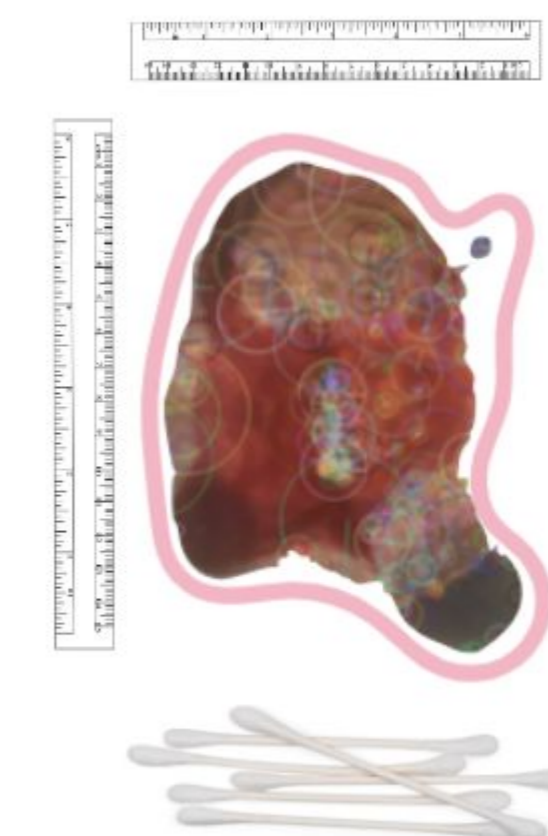
INTRODUCTION

Objective:

- Explore billing discrepancies by comparing wound area documented using manual ruler method vs. photographic automated true surface area measurements

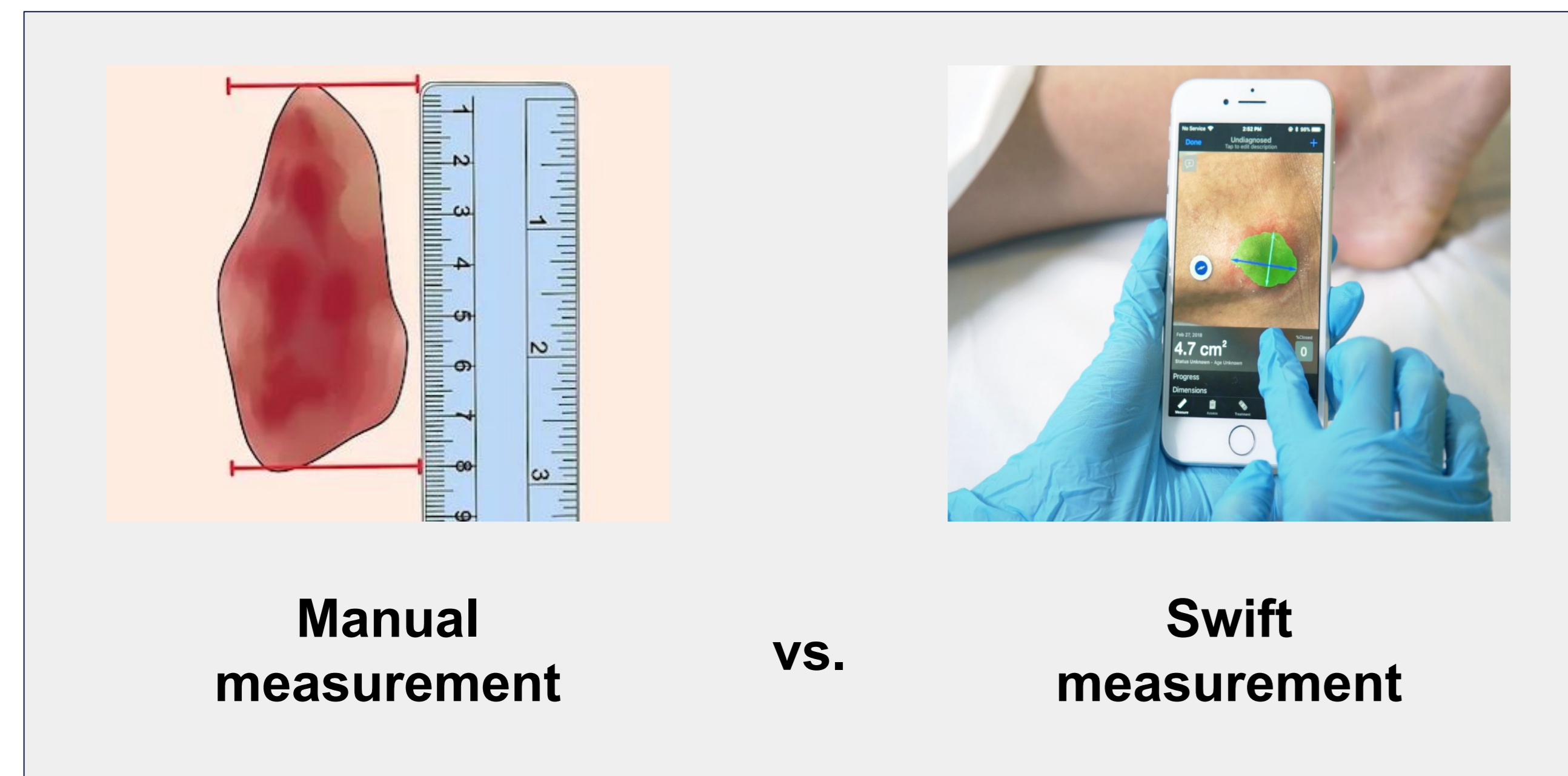
Background:

- Wound measurements using a ruler to measure length x width x depth is traditionally used at many wound care clinics as the standard measurement technique
- Manual ruler measurement techniques tend to overestimate the true surface area of the wound due to calculating a rectilinear surface area
- The manual rectilinear measurement tends to under recognize the changes in surface area over time
- Wound Management Solution tools such as the Swift Skin and Wound (SSW) app measure the true surface area specifically with regard to the irregular shaped wounds
- Excess charges, where a healthcare provider submit bills beyond what is required for a treatment procedure, is common in the United States public healthcare system
- Improved documentation are helpful in assisting with increasing audits



Swift Medical's Wound Management Solution technology provides an accurate, non-contact method for measurement of wounds using the everyday smartphone

METHODOLOGY

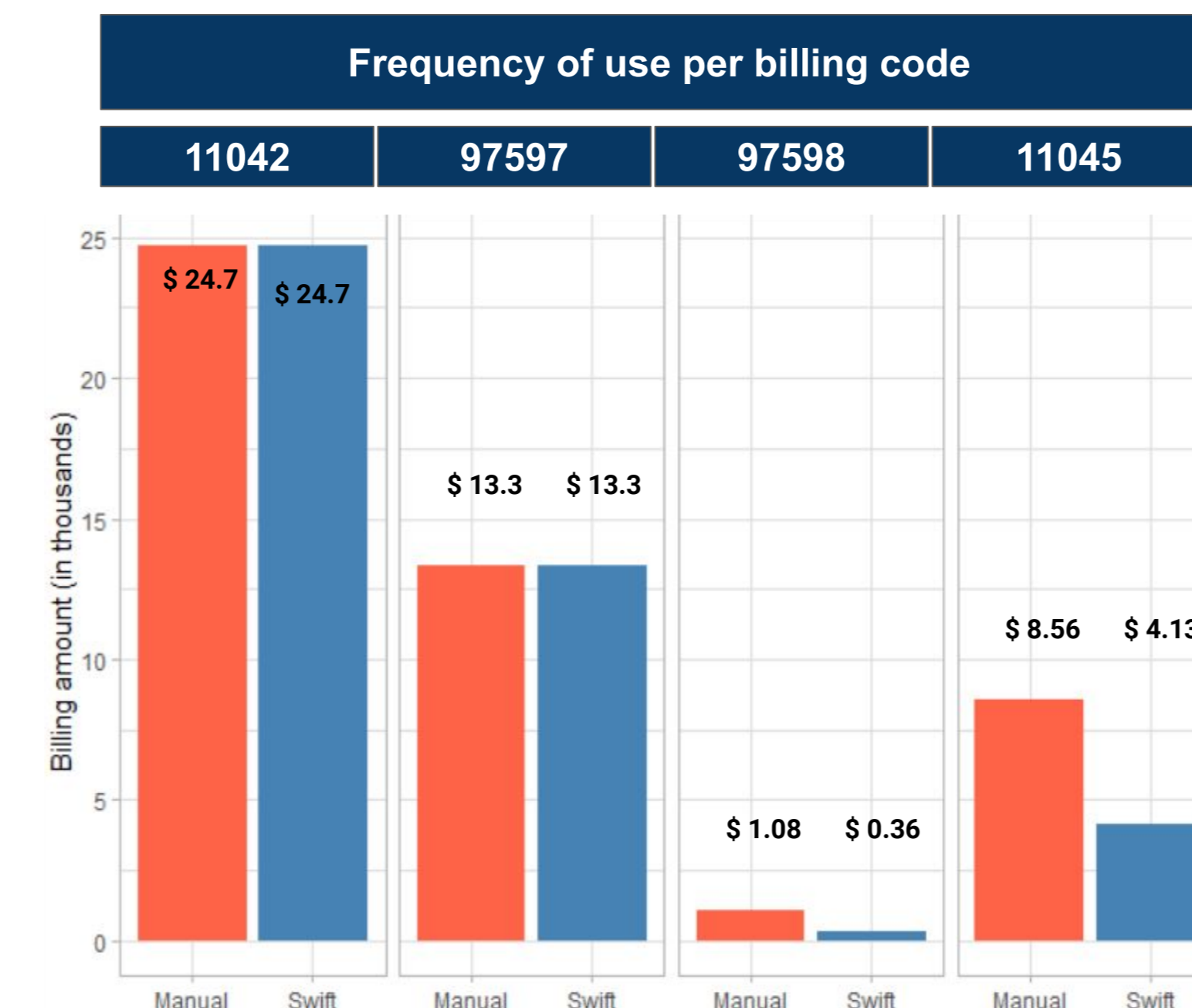


- During the month of May 2022, nursing staff measured each patient's wound using the traditional paper ruler length x width. A repeated measurement of each wound was completed using the Swift SSW app
- A spreadsheet was created using the total surface area measurements comparing which debridement codes would be used based on each 20 centimeter squared area
- This was done for both traditional paper ruler measurements and SSW app photo documentation
- Measurements were done for both selective and surgical debridements
- For comparing wound width, length, depth, and area, paired Wilcoxon tests were used
- Costs were linked to each billing code to estimate the total amounts for manual vs. Swift measurements
- The total cost of claims from all patients were summed for manual and Swift SSW app measurements

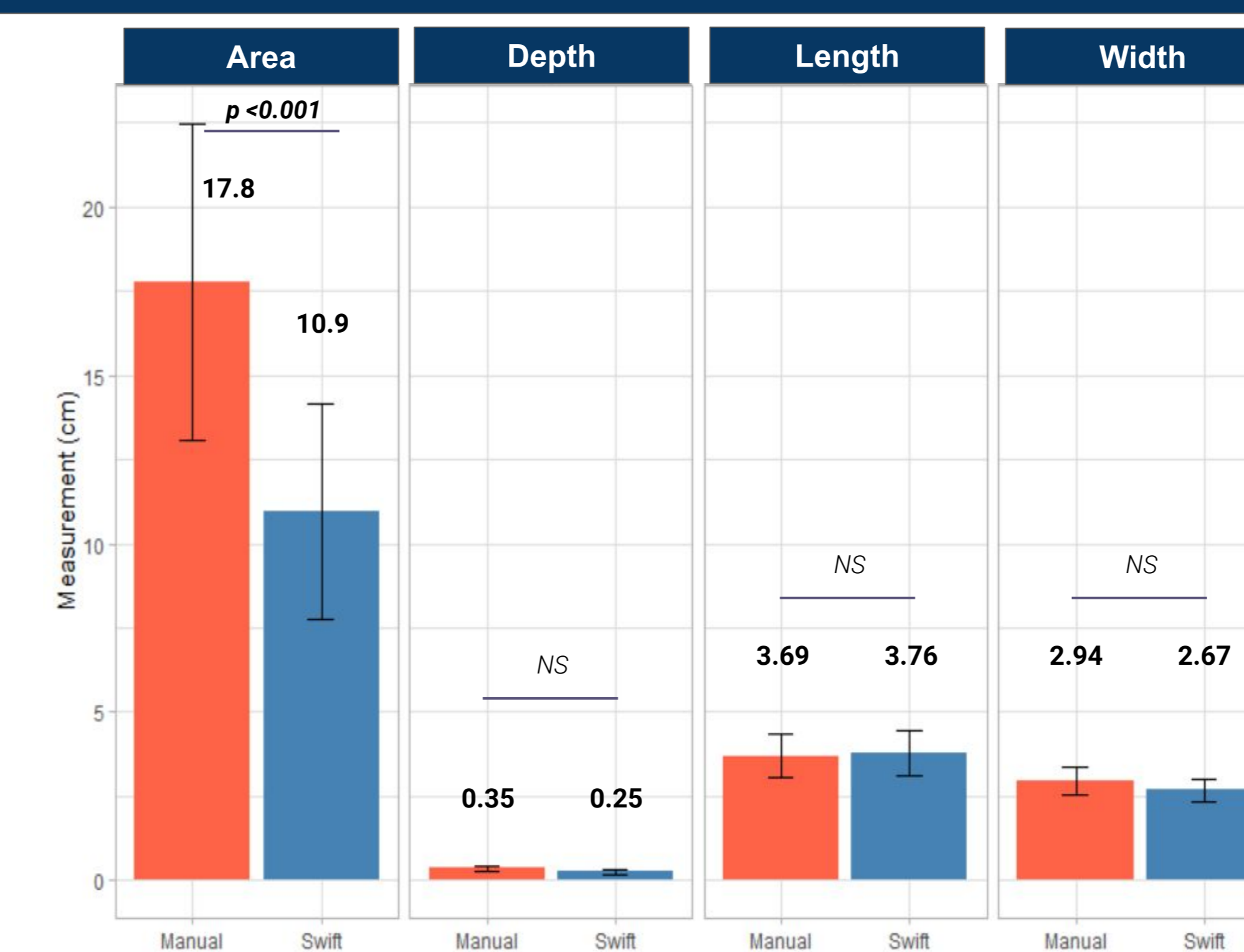
RESULTS

Data collected

- 163 patients followed
- 277 codes submitted
 - 11042: Debridement (< 20 cm²)
 - 11045: 11042 add-on - each additional 20 cm²
 - 97597: Selective Debridement (< 20 cm²)
 - 97598: 97597 add-on - each additional 20 cm²

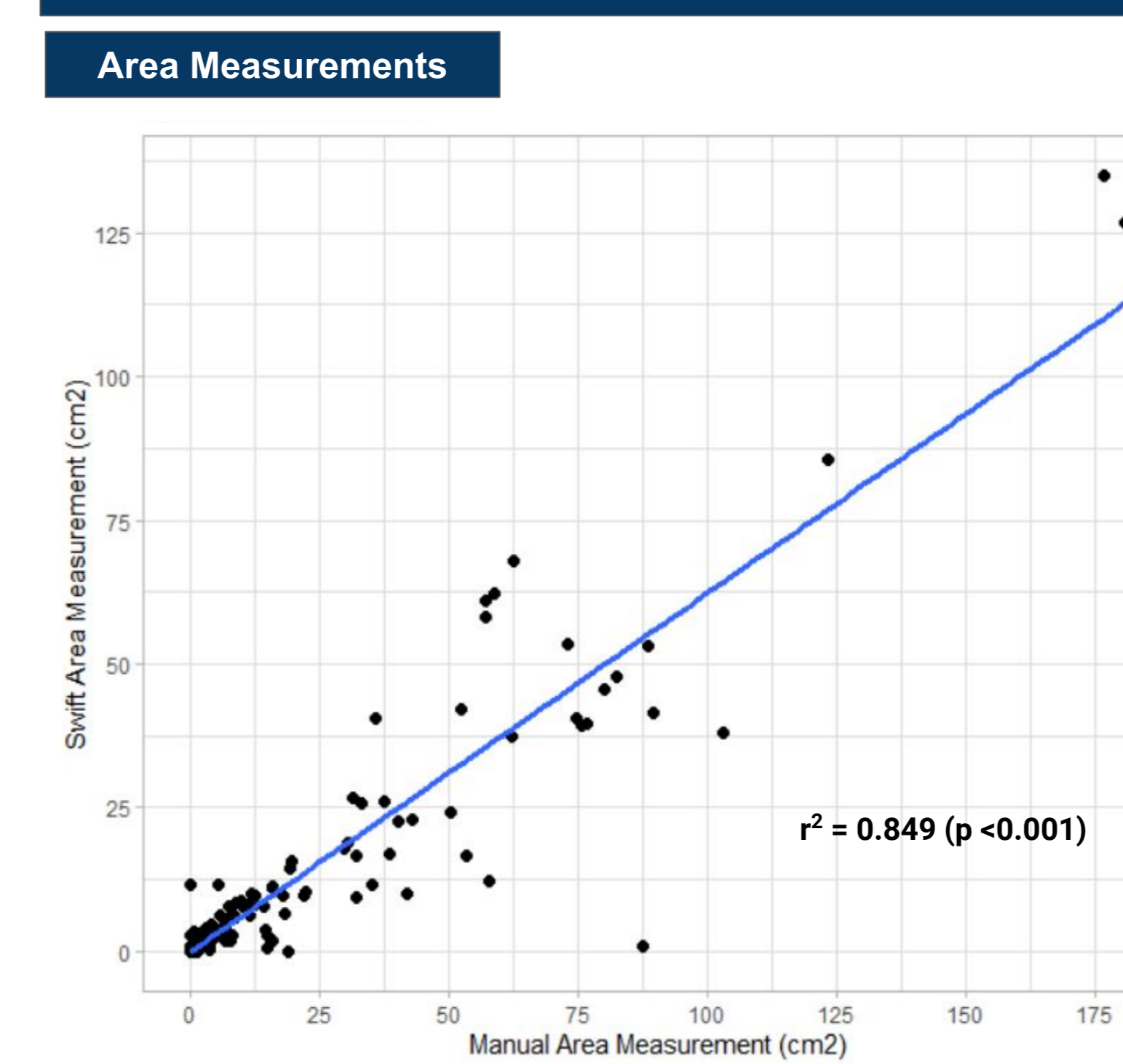


Manual vs. Swift Measurements of Wound Area, Depth, Length, and Width



A non-significant discrepancy in depth, length and width measurements between manual and Swift methods was reported. However, we detected a significant overestimate of 39% in area measurements with the manual method.

Area Measurements of Wounds (Manual vs. Swift)



- Mean absolute error (MAE): 17.49 cm²
- Mean absolute percentage error: 25.27%
- Intraclass correlation coefficient (ICC) = 0.827

Sum of Claims (Manual vs. Swift)

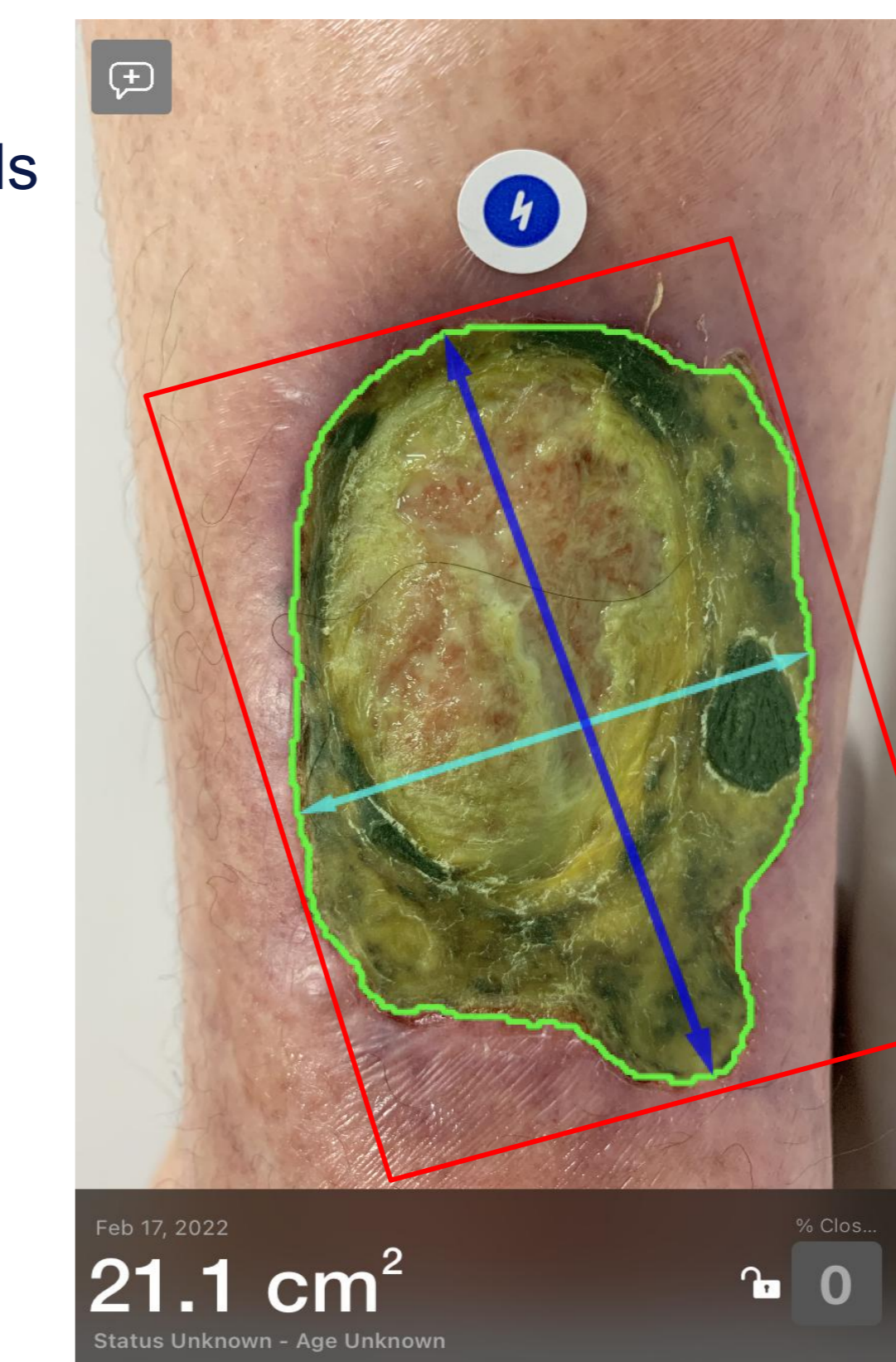


- Billing total with manual measurements: \$47,600
- Billing total with Swift measurements: \$44,510
- Overbilling = \$5.15K or 12.1%

DISCUSSION

- Measuring length, width, and depth are consistent between manual and software imaging measurements
- However there is a 39% overestimation measuring the area of a wound manually with a rule compared to software imaging measurements meaning that this technology provides more accurate measurements of wounds
- Leveraging a Wound Monitoring Solution such as the Swift Skin and Wound (SSW) app can lead to a change in billing practices since it was proven that image documentation reduced overbilling by 25%
- Reducing overbilling can allow for better treatments to be covered for patients in lieu of upcoming changes to Medicare treatment reimbursements
- Improved measurement of wound area allows for better tracking of surface area reduction over time so the reduction of wound size can be classified as healing or not healing if the reduction in size is smaller than the overestimated value
- Higher quality documentation of accurate wound measurements can support patient care and assist with audits for reimbursements
- It was found that there was upcoding of debridement codes using traditional manual wound measurements versus Wound Monitoring Solution technology that measure the true surface area
- Wound measurement is an important assessment for clinical decision making

Paper rulers are inaccurate and LxW rectilinear estimates of wound area are insufficient in a digital age. There are clinically validated technologies that allow true surface area measurement and improved documentation of wound healing progress



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