



Comprehensive Healing Rate: Standardization and transparency in wound outcome reporting using a modified intent-to-treat framework: An Update

Introduction and background

Publicly reported wound care center healing rates have been the topic of considerable discussion. Critics argue that variability in exclusion criteria result in outcomes that are not comparable across care venues.¹ In response to calls for greater transparency, Healogics® partnered with faculty from leading medical institutions to conduct a large-scale analysis of wound outcomes using a modified intent-to-treat framework, which was published in 2017.²

The primary aim of the study was to create a standardized methodology that uses a modified intent-to-treat framework which includes all non-consultation non-active wounds allowing for aggregate comparison across venues.

Since the publication of the 2017 study, Healogics has continued to utilize a comprehensive healing rate as a central part of clinical reporting. However, since the original publication the wound care landscape has advanced and shifted. With increased presence and awareness of specialized wound care in recent years, wounds are being treated sooner, with more patients receiving timely referrals to appropriate care and prior treated patients knowing where to return when their wounds recur. Treating patients sooner in their wound progression, before their wounds grow larger or experience additional complications, can increase their likelihood to heal (and subsequently impact our overall CHR). The purpose of this paper is to examine a more recent cohort of patients against the 2017 study

to understand how the Comprehensive Healing Rate compares considering the broadening of wound care and awareness in the last decade.

Data and methods

Three cohorts of data were compared across disparate timeframes, including the two original cohorts for the 2017 publication:

Academic Wound Center data from 2006 – 2009 was prospectively collected and retrospectively analyzed. The data was generated from a 200-bed, community hospital-based wound care program staffed by three full-time wound program faculty employed by the non-Healogics affiliated University of Illinois hospital. A final sample of 2,578 wounds was analyzed.

The original published cohort of Healogics Wound Care Centers' retrospective data was collected from 626 outpatient Wound Care Centers nationwide between January 1, 2014 and November 1, 2015. All wounds that met the qualifying inclusion criteria were included and no other exclusions were applied. A final sample of 1,000,690 wounds was analyzed.

Finally, a third comparison group was added to understand if there have been any significant shifts in how our miTT-CHR compares to the two prior cohorts. This new sample included 1,638,297 wounds seen between January 1, 2022 and December 31, 2024 across 610 outpatient Healogics Wound Care Centers nationwide. Similar to the previous cohorts, all wounds that met the qualifying inclusion criteria were included and no other exclusions were applied.

Table 1. Modified intent-to-treat – comprehensive healing rates comparisons across cohorts

	2022 - 2024	2014 – 2015	2006 – 2009
Total # healed wounds	1,129,104	498,113	1,388
Total # wounds	1,638,297	1,006,690	2,578
Exclude wounds still active, Non-wounds, and consults or days between first to last assessment <= 7 days (n)	219,589	339,399	790
% of total	11.8%	33.7%	30.6%
Final – # remaining wounds	1,418,708	667,291	1,788
Comprehensive healing rate (%)	79.6%	74.6%	77.6%

Table 2. Breaking down the comprehensive healing rate to traditional healing rate for each cohort

	2022 - 2024	2014 – 2015	2006 – 2009
Total # healed wounds	1,129,104	498,113	1,388
Total # wounds	1,418,708	1,006,690	2,578
Comprehensive healing rate (%)	79.6%	74.6%	77.6%
Exclude – # wounds patients that died	32,884	15,867	35
% of total	2.3%	1.6%	1.4%
# remaining wounds	1,385,824	651,424	1,753
% healed at level	81.5%	76.5%	79.2%
Exclude – # wounds patients that moved	9,132	5,520	4
% of total	0.6%	0.6%	0.2%
# remaining wounds	1,376,692	645,904	1,749
% healed at level	82.0%	77.1%	79.4%
Exclude # wounds patients that transferred providers	45,701	24,436	34

Table 2. Breaking down the comprehensive healing rate to traditional healing rate for each cohort

	2022 - 2024	2014 - 2015	2006 - 2009
% of total	3.2%	2.4%	1.3%
# remaining wounds	1,330,991	621,468	1,715
% healed at level	84.8%	80.2%	80.9%
Exclude – # wounds patients that transferred facility	101,162	66,776	48
% of total	7.1%	6.6%	1.9%
# remaining wounds	1,229,829	554,692	1,667
% healed at level	91.8%	89.8%	83.3%
Exclude – # wounds patients lost to follow-up	69,064	11,771	82
% of total	4.9%	1.2%	3.2%
# remaining wounds	1,160,735	542,921	1,585
% healed at level	97.3%	91.7%	87.8%
Exclude – # wounds patients that underwent amputation	8,161	4,455	47
% of total	0.6%	0.4%	1.8%
# remaining wounds	1,152,574	538,466	1,538
% healed at level	98.0%	92.5%	90.2%
Exclude # wounds patients converted palliative	517	1,149	109
% of total	0.0%	0.1%	4.2%
Final – # remaining wounds	1,152,057	538,352	1,429
Traditional healing rate (%)	98.0%	92.5%	97.1%

Results

Table 1 displays the findings of the modified intent-to-treat analysis to measure the comprehensive healing rate. Excluding wounds in active treatment, no wound documented and consultations, the comprehensive healing rate for the more recent Healogics sample was 79.6% compared to the prior Healogics sample of 74.6% and 77.6% in the academic wound care sample.

Table 2 displays a decomposition of the comprehensive healing rate relative to the standard healing rate in order to demonstrate how each exclusion impacts healing measures. Similar to the prior cohorts, in the latest cohort

patients discharged to other providers or facilities and those who were lost to follow-up had the largest impact on the standard healing rate. However, the total percent of patients who met these criteria has increased over 5 percentage points in the recent data (15.9%) compared to the prior Healogics cohort from 2014-2015 (10.8%).

Conclusions

The original intention of the 2017 study was to demonstrate the importance of standardization and transparency in wound outcome reporting by utilizing the comprehensive healing rate methodology. This methodology allows for the comparison of patient samples across sites of care and over time and provides more visibility into factors within our population that may be disrupting patient care. In our latest sample we found that despite increased rates of patients being transferred and lost to follow-up, the comprehensive healing rate as an enterprise has increased. Further research on changes to patient mix and risk-adjusted CHR is warranted to better understand how the evolution of the specialized wound care landscape has impacted the characteristics of the wounded population treated at Healogics over time.

References

¹Fife Caroline E., Eckert Kristen A., and Carter Marissa J.. Advances in Wound Care. September 2017, ahead of print. <https://doi.org/10.1089/wound.2017.0743> – <http://online.liebertpub.com/doi/full/10.1089/wound.2017.0743>

²Ennis, W. J., Hoffman, R. A., Gurtner, G. C., Kirsner, R. S. and Gordon, H. M. (2017), Wound healing outcomes: Using big data and a modified intent-to-treat method as a metric for reporting healing rates. Wound Rep Reg, 25: 665–672. doi:10.1111/wrr.12575 – <http://onlinelibrary.wiley.com/doi/10.1111/wrr.12575/full>