



# Woundtech: Overcoming Health Care Disparities by Improving Access To Wound Care

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**Wound development is often multifactorial.** Acute wounds can be caused as a result of trauma, surgery or thermal injuries. Whereas chronic wounds are often complicated by extrinsic factors such as pressure and shear or systemic disease conditions such as diabetes, venous insufficiency and peripheral arterial disease. No matter the cause, wounds can have a considerable effect on the patient and the health care economy alike. Treatment costs for chronic wounds are substantial and are estimated to account for approximately 1–3% of the total healthcare expenditure in developed countries.<sup>1</sup>

Patients with chronic wounds often suffer from pain, isolation, depression, loss of mobility, inability to work, and loss of autonomy. Increased hospitalization as well as greater morbidity and mortality further complicate the overall human toll. Estimates indicate that approximately 2% of the US population (>6.5 million individuals) is affected by chronic wounds.<sup>2</sup> Outcomes are often dependent on a variety of factors and can be impacted by geographic and socioeconomic disparities. It is believed that social and environmental conditions in which people are born, grow, live, work and age account for 80% of health outcomes while only 20% are a result of care delivery.<sup>3</sup>

A health care disparity exists when there is a higher burden of illness or injury experienced by one group when compared to another.<sup>4</sup> Race or ethnicity, gender, gender identity, education, age, disability, and geographic location all have an impact on health care outcomes.<sup>4</sup> Health disparities are often linked to social and economic factors. Gaps in health insurance coverage, restricted access to care, and decreased quality of medical services all are examples of contributing factors. The larger the disparity, the worse the health care outcome.

It is particularly important to consider social determinants of health in the at-risk chronic wound patient population. Many wound care patients are of advanced age and have multiple co-morbid systemic conditions such as diabetes and PAD. Three percent of the residents of the US aged 65 and over have an open wound. A crude estimate conducted by the US government determined that by the year 2060 the elderly population will reach over 77 million.<sup>5</sup> It is safe to say that the problem of chronic wounds will continue to be an increasingly pervasive issue.

Most patients suffering from chronic wounds seek help from hospitals or specialty clinics. Issues arising from transportation limitations, difficulty topography, budget constraints, conflicting cultural ideology, lack of insurance, or a paucity of local health care providers in certain areas are a few barriers to wound healing patients may encounter.

All patients, particularly those in economically challenged areas, need convenient access to providers who understand their individual wound care issues and the social conditions they face. At Woundtech we see this unmet need every day. The home-based wound care services provided by Woundtech overcome these barriers to care and foster collaboration with doctors, hospitals, and health plans to deliver a unique solution to the tough problem of chronic non-healing wounds.

A recent study published in the Journal of the American Heart Association (JAHA) assessed nearly 189,000 Medicare fee-for-service patients in over 31,000 different zip codes having undergone a major lower extremity amputation between 2010-2018.<sup>6</sup> The investigators found substantial geographic variation in rates of major lower extremity amputations. ZIP codes with a greater population of Black residents had higher rates of amputation than ZIP codes with lower proportions of Black residents.<sup>6</sup> ZIP codes of lower social economic status also exhibited higher rates of amputation compared to those of higher SES.<sup>6</sup> These findings identify the need for increased preventative services targeting patients that live in these communities.

Woundtech continues to expand our footprint, adding to our advanced wound care provider team, in these geographic areas of critical need. The follow graphs illustrate the Woundtech patient demographic data for the Miami and Los Angeles metropolitan areas.

**Demographics data of Woundtech major service area in Miami metropolitan area<sup>1</sup> vs. Whole Miami metropolitan area<sup>2</sup>**

	Avg. Income per household	Avg. persons per household	% Population 65 and older	M/F Sex ratio	% Hispanic (any race)	% Black/ African American	% White, Non-Hispanic
<b>WTN service area in Miami</b>	44,193.27	2.44	16.6%	93.2%	44.4%	24.5%	29.7%
<b>Whole Miami Metropolitan Area</b>	46,893.24	2.36	16.7%	94.1%	42.8%	22.4%	33.1%

[1] defined as zip codes that WTN has at least 20 patients referrals from 2019 to 2021

[2] defined as Miami-Fort Lauderdale-West Palm Beach Metro Area with 184 zip codes

**Demographics data of Woundtech major service area in Los Angeles metropolitan area<sup>3</sup> vs. Whole Los Angeles metropolitan area<sup>4</sup>**

	Avg. Income per household	Avg. persons per household	% Population 65 and older	M/F Sex ratio	% Hispanic (any race)	% Black/ African American	% White, Non-Hispanic
<b>WTN service area in Los Angeles</b>	58,039.85	3.25	11.5%	97.0%	57.1%	6.3%	21.9%
<b>Whole Los Angeles Metropolitan Area</b>	68,230.97	2.90	12.1%	97.2%	44.9%	7.7%	30.5%

[3] defined as zip codes that WTN has at least 10 patients referrals from 2019 to 2021

[4] defined as Los Angeles-Long Beach-Anaheim Metro Area with 370 zip codes



**Inequities in healthcare occur when there are variations in the distribution of resources based on the geographic location of a population that contributes to the lack of opportunity and lead to the unavoidable differences in health outcomes.<sup>7</sup>**



Inequities in healthcare occur when there are variations in the distribution of resources based on the geographic location of a population that contributes to the lack of opportunity and lead to the unavoidable differences in health outcomes.<sup>7</sup> The World Health Organization reports that the highest proportions of the global burden of disease and disability falls on regions that also suffer the most significantly from physician shortages.<sup>8</sup> The Woundtech model of care is focused on bridging these gaps. Fundamental changes in the way advanced wound care is delivered to this population are necessary to keep

pace with this increasing demand. The Woundtech model of care is a proactive approach to advanced wound care delivery that supports wound healing to reduce health costs while increasing patient access by providing care in their home. Woundtech advanced practice clinicians provide high-quality community-based patient-centered wound services. The rigorous clinical training provided to our Woundtech clinicians has established a core standard for wound management to decrease the negative sequelae associated with chronic wounds including amputations.

Diabetic foot ulcers have a higher rate of emergency room visits and hospitalizations than congestive heart failure, renal disease, depression and most forms of cancer.<sup>9</sup> Patients undergoing an amputation average hospitalization cost in the US is between \$12,851 to \$16,267.<sup>1</sup> Contributing to this are the long-term of rehabilitation and outpatient treatments.<sup>1</sup> These staggering statistics amplify the importance of evidence-based wound care to prevent chronic wounds from deteriorating into a state where amputation is inevitable.

In an attempt to illustrate that the consequences of developing a diabetic foot infection (DFI) is not homogenous throughout the diabetic population, one study evaluated the hospitalization outcomes of White, African American (AA) and non-AA minorities (Hispanics and Native Americans).<sup>10</sup> This study examined the records of 150,701 patients admitted for DFI, including 98,361 Whites, 24,583 AAs, 24,472 Hispanics, and 1,654 Native Americans (NAs).<sup>10</sup> The study found that the risk for major amputation was significantly higher for African American, Hispanic and Native American patients with diabetic foot infections compared to their White counterparts.<sup>10</sup> The study concluded that more should be done to mitigate racial and ethnic disparities to further promote equity in the treatment outcome in the at-risk diabetic patient population. Moreover, of particular concern is that AAs and Hispanic patients with PAD were more likely to undergo a primary amputation without any attempt at revascularization.<sup>10</sup> Minority patients are 2-3 times less likely to receive any endovascular procedure than Whites.<sup>10</sup> These findings suggest that there appears to be reduced access to medical care or vascular intervention procedures. Increasing patient access to professional wound management services for the treatment and prevention of wound deterioration is crucial.

The Woundtech approach to wound care consistently yields better healing outcomes for the diverse patient population we serve. Prior to implementing our own EMR, Woundtech used WoundExpert. A review of 16 months of data (Jan 2020 – April 2021) illustrates improved healing rates calculated against all users of WoundExpert.

Wound Type	Woundtech Days to Heal Avg.	WoundExpert Days to Heal Avg.
Abrasion	30	36
Allergic Reaction	35	25
Arterial Ulcer	83	81
Burn	36	42
Cellulitis	48	61
Diabetic Ulcer	72	90
Hidradenitis	106	108
Incontinence Associated Dermatitis	29	41
Laceration	32	38
Lymphedema	60	70
Malignant Wound	55	88
Other	52	60
Pressure Ulcer	59	68
Radiation Wound	32	135
Skin Tear	24	30
Soft Tissue Necrosis	82	74
Surgical Wound	60	73
Trauma Wound	43	52
Vasculitic Ulcer	62	87
Venous Ulcer	64	70
<b>Total Average Days To Heal</b>	<b>56</b>	<b>67</b>

Woundtech patients heal  
**20% FASTER**  
on average

Woundtech patients receive care in their homes from dedicated wound care trained advanced practice clinicians. Our providers have performed over 3.5 million wound care assessments to date. Based on calculations from the first 10,000 visits performed in 2022, it was determined that our advanced care providers spend an average of 36.6 minutes of face-to-face interaction time with each patient at each visit. In contrast, most U.S. physicians spend between 13 and 24 minutes with patients.<sup>11</sup> Woundtech clinicians take this extra time to treat the whole patient, not just the hole in the patient. Complete wound and patient assessments are performed at each and every visit. As a result, our patients are less likely to end up seeking care in emergency departments. Which translates to fewer in-patient hospital admissions.



Woundtech is dedicated to improving the quality of wound care while reducing the associated costs. An internal analysis of 2021 Woundtech clinical data illustrates a cost savings per patient as calculated in the table below. These figures are based on the difference between industry average and Woundtech cost for the particular type of wound.

Wound Type	Woundtech Cost / Patient	Industry Average	Approx. Savings / Patient	Cost Savings %
Arterial Ulcer	\$3,455	\$11,875	\$8,420	70.9%
Diabetic Ulcer	\$3,351	\$6,651	\$3,301	49.6%
Pressure Ulcer	\$2,631	\$5,593	\$2,963	53.0%
Surgical Wound	\$2,611	\$8,438	\$5,827	69.1%
Venous Ulcer	\$3,855	\$11,092	\$7,238	65.2%

**Calculation methodology:**

The benefits calculation is based on industry average figures from 2014 report with inflation factored in<sup>1,2</sup>

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  - WT averages are based on 12 months rolling numbers (Jan-Dec 2021) for visits and the cost per patient for that period.
  - Savings per patient calculated based on the difference between Industry average and WT cost for the particular type of wound.

Utilization of healthcare services is often disjointed in areas where health care disparities persist thus resulting in inefficiency and poor outcomes. Given increased awareness of health care disparities, incorporating the Woundtech model of care helps to overcome obstacles to healing in an at-risk population. Chronic wounds have a significant impact on quality of life and are a drain on the health care system. The number of patients suffering with chronic wounds is increasing. Woundtech clinicians make the best use of resources to produce the greatest long-term results for each patient in need throughout the US.

## References

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## About Woundtech

Woundtech delivers advanced wound care services to patients to drive higher rates of healing and improve quality of life, resulting in better access to care and lower cost. Our clinicians specialize in wound management and follow evidence-based guidelines to deliver superior outcomes.



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