Solutions & Next Steps

Searching for solutions to reduce leg amputation disparities in Texas

Reducing health disparities in hospitalization for PAD-associated foot complications and variability in the treatment options provided for these complications will require more extensive, coordinated approaches. The following are some recommended actions to reduce preventable leg amputations and associated disparities in Texas:

- Pursue efforts to avoid leg amputation in the majority of people presenting to the hospital with limb-threatening complications associated with PAD
- Develop a media campaign engaging those most at-risk for limb loss and their healthcare providers to raise awareness ways to prevent amputation and promote foot care
- Fund demonstration projects aimed at reducing preventable amputations with an emphasis on primary prevention to lower incidence of conditions that lead to amputation risk
- Implement multicomponent, multidisciplinary interventions that follow standardized guidelines to reduce amputations
- Focus initial prevention efforts on Harris county or the Houston-Galveston metropolitan area since this is an area with the highest concentration of limb-threatening complications but where there is interest among health system leaders to address leg amputation disparities

Texas hospitals and health systems can take the lead by:

- Collaborating with the Texas Department of State Health Services to find ways to improve access to high quality cost-effective care that can reduce amputations rates downstream
- Creating and strengthening relationships with individuals and organizations who will support long-term systems changes necessary to reduce preventable leg amputations at the population level
- Convening a collaborative group represented by different disciplines and sectors with a common concern for preventing leg amputations
- Hosting meetings, developing communication platforms for the collaborative group, and holding conferences and educational events for the public and policy makers
- Implementing social media and text messaging campaigns to increase awareness of lower limb loss.
- Developing white papers, demonstration proposals, and guidance documents on implementing interdisciplinary interventions and approaches to reduce preventable amputations

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Leg Amputations in Texas: Massive Disparities in an Avoidable Procedure

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Leg amputations are a devastating consequence of complications related to diabetes or peripheral artery disease (PAD, also described as "poor circulation"). This preventable procedure is common in Texas, and occurs disproportionately among people living in high-poverty areas, who lack health insurance or are covered by Medicaid, and who are black or Hispanic.

This brief presents findings from an analysis of Healthcare Cost and Utilization Project data that reveal disparities in diabetes– and PAD-related amputations in Texas. Policy and practice issues in the health care system that contribute to disparities are also presented along with proposed solutions to reduce leg amputations.

Consequences for patients

Patients who undergo amputation encounter a host of life-changing challenges:

- 20-30% face anxiety and/or depression
- Social isolation from impaired mobility and poor body image
- Many suffer persistent pain and poor healing of surgical wounds
- Among those who can walk and are living in the community, only half receive and use a limb prosthesis
- 27% will require institutionalization
- The mortality rate for patients is 35%-80% within 5 years of surgery

Causes and treatment

Leg amputations are typically performed when complications like ulcers, infections, or gangrene of the foot go untreated for too long. Alternative treatments for PAD that improve circulation and treat infection are available and can avoid amputation; however, these treatments are not always applied, resulting in disparities in who undergoes amputations.

When alternative treatments were provided, Texans categorized as black or Hispanic, those without insurance, or those with Medicaid coverage were just as likely as other groups to avoid amputation.

FAST FACTS

~8000 Texans underwent leg amputation related to diabetes or PAD between 2004-2008

26.3 per 100,000: The incidence of hospital admissions resulting in amputation

The Gulf Coast region of Texas and the Southeastern U.S. have significantly higher rates of diabetes-associated leg amputations than the rest of the country. Leg amputations were more commonly performed without PAD treatment in certain regions of Texas

AMPUTATION RATES ARE HIGHER AMONG AFRICAN AMERICANS, NATIVE AMERICANS AND THE POOR...

1.5x higher among African Americans than whites (2009 data)

2x higher among Native Americans than whites (2008 data)

2x higher annual incidence of surgery for PAD-/diabetes–related foot complications in zip codes with the highest proportion of residents below the poverty level, compared to zip codes with the lowest proportion

Policy Issues & Challenges to Reducing Amputations

Disparities in amputations stem from a chain of policies and practices in the health care system and larger community. Primary challenges include investment in primary prevention activities, reducing contributing factors, patient education, inadequate access to care, reimbursement structures, varying treatment options, urgent/emergency hospital admission practices, and post-amputation care to prevent recurrence. For health systems, limb preservation produces cost-savings over leg amputation. Costs are also significantly higher for those undergoing urgent or emergency room hospitalization for foot complications, indicating a greater need for emphasis on primary prevention.

PREVENTION → **INTERVENTION**

Disease prevention → Complication prevention → Treating complications early → Treating severe complications → Amputation → Subsequent amputation

Primary prevention investment

Primary prevention aims to avoid the risk factors and causes of diabetes and PAD disparities. A healthy diet and physical exercise help to prevent obesity which is a major predictor of diabetes and PAD. Quitting smoking is also crucial for good blood flow to extremities.

However, investment in primary prevention is generally much lower than investment in disease treatment.

Reducing contributing factors

Smoking cessation and managing high blood sugar (hyperglycemia), high blood pressure (hypertension), high level of cholesterol (hypercholesterolemia), renal diseases, neuropathy and PAD reduce risk of developing foot ulcers and other complications.

Reimbursement structures

Reimbursement structures are typically not aligned with patient-centered outcomes, so needed care may be fragmented or sporadic.

Treatment options

Race/ethnicity, insurance status and social stratum are among the predictors of the treatment options available to a patient.

For example, studies show lower use of diagnostic imaging that could identify PAD and a lower rates of treatments to address PAD among patients categorized as black or who have Medicaid coverage.

→ There are no uniform guidelines on when amputation is necessary versus when other interventions are called for.

Preventing recurrence

Post-amputation discharge care/ services are essential to prevent further complication/ amputations.

The recurrence rate for foot ulcers is about 35% at one year, and 77% by five years.

42% of patients who have an amputation will have their other limb amputated within 3 years.

Inadequate access to care

Alternative treatments to avoid amputation require coordinated care and action among multiple health care specialists.

However, referrals to the proper health care providers are frequently delayed or nonexistent. Differing access to specialists such as podiatrists, vascular surgeons, educators and dieticians leads to disparities.

→ Safety net hospitals, often used by those groups most at risk of complications, may lack the resources and equipment to perform alternate treatment options, resorting to amputation instead.

→ Leg amputations without PAD treatment attempts were much more commonly performed on Texans without medical insurance or who have Medicaid coverage or those categorized as black or Hispanic.

Conversely, having medical insurance (other than Medicaid) was less frequently associated with leg amputations done without PAD treatment.

Patient education

People at risk of foot complications are infrequently educated on how to keep feet healthy or how to recognize problems.

Daily foot self-examinations by patients and regular exams by physicians are recommended.

Urgent/emergency admission practices

Urgent or emergency hospital admission for PAD foot complications was much more common among Texans without insurance, those age 18-65, and those categorized as black.

→ Urgent/emergency room admission was related to a 50% increased rate of leg amputation.