

Amputations and Diabetic Foot Disease in the VHA

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Preservation Amputation Care and Treatment (PACT)

- National directive
- Establish a system of care to:
 - Identify patients at risk for amputation
 - Diabetes
 - Peripheral vascular disease
 - End Stage Renal Disease
 - Screen for amputation risk
 - Assign a risk score
 - Timely and appropriately refer

PACT ProClarity Cube

- Collects data on all VA PACT Patients

- Measures

- Conditions

- Diabetes, ESRD, PVD, Neuropathy, Ulcers, Amputations, Infections, Gangrene, Charcot, foot deformities, etc.

- Continuity

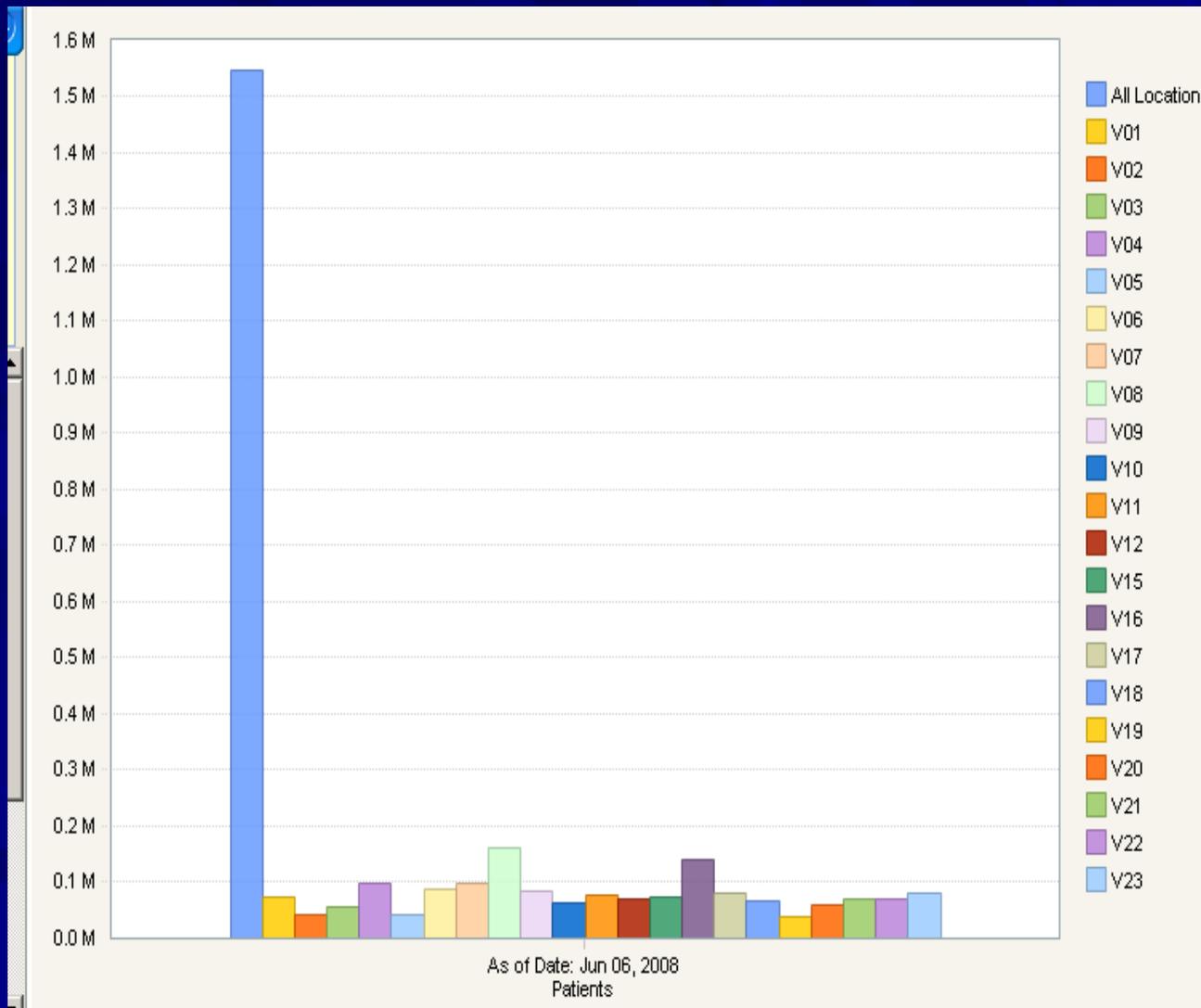
- Primary care visits within the past 18 months, foot visits within the last 18 months, other special outpatient visits last 18 months.

What does the data tell us?

1. Current and future burden
2. If we are doing the right things right the first time

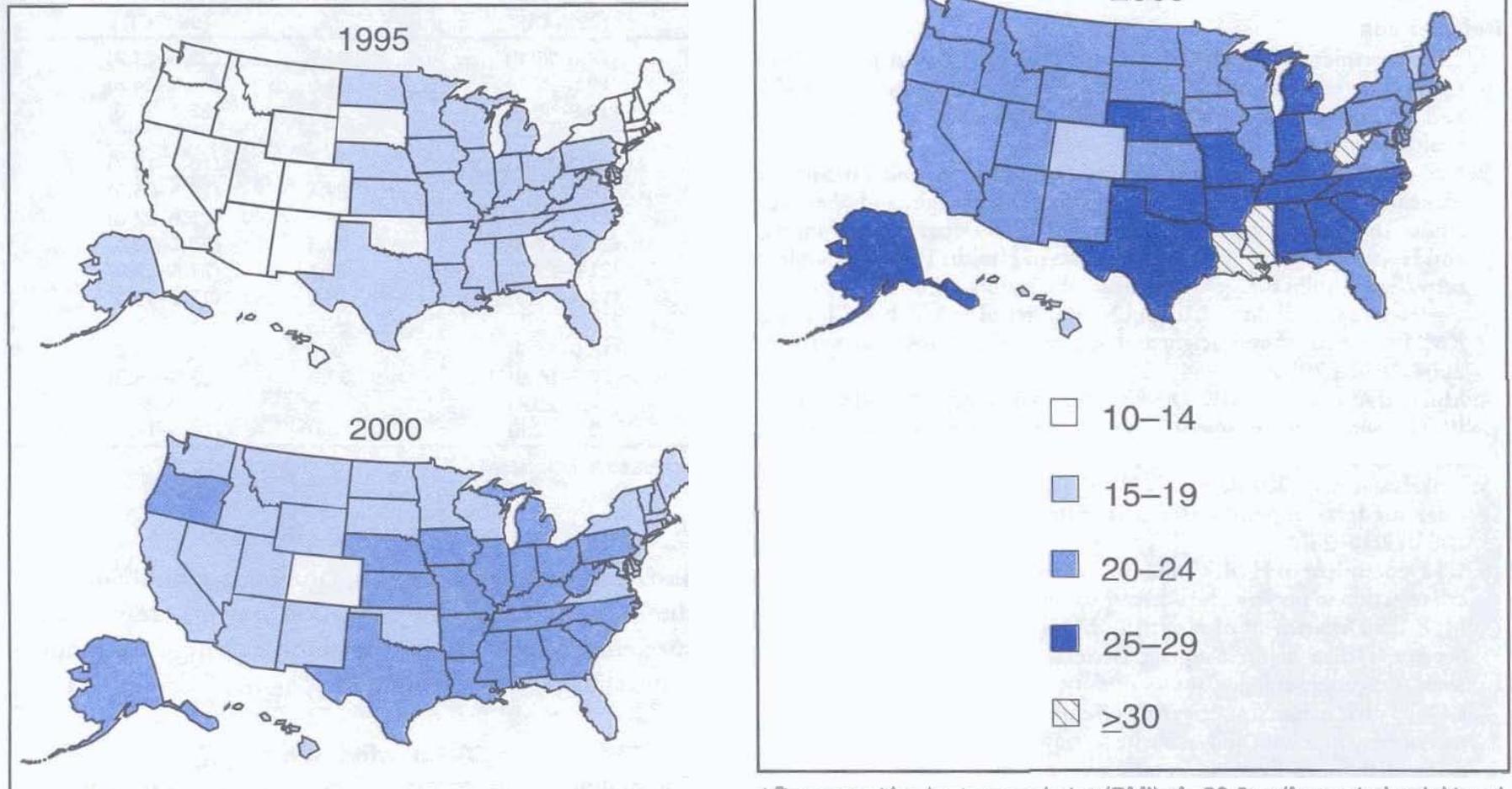
PACT Patients

| | |
|--------------|----------------|
| All Location | 1,545,789 |
| V01 | 75,236 |
| V02 | 41,403 |
| V03 | 54,558 |
| V04 | 98,666 |
| V05 | 40,670 |
| V06 | 88,139 |
| V07 | 99,587 |
| V08 | 163,050 |
| V09 | 84,637 |
| V10 | 64,311 |
| V11 | 75,906 |
| V12 | 70,907 |
| V15 | 74,345 |
| V16 | 140,745 |
| V17 | 79,907 |
| V18 | 66,876 |
| V19 | 40,023 |
| V20 | 59,429 |
| V21 | 68,779 |
| V22 | 71,348 |
| V23 | 80,528 |



Controllable risk factors....

FIGURE. Percentage of adults aged ≥ 18 years who were obese,* by state — Behavioral Risk Factor Surveillance System, United States, 1995, 2000, and 2005



* Persons with a body mass index (BMI) of ≥ 30.0 ; self-reported weight and height were used to calculate BMI (weight [kg] / height [m]²).

...and the consequences

FIGURE 4. Prevalence of adults who reported ever being told by a health professional that they had diabetes, by state — United States, Behavioral Risk Factor Surveillance System, 1991

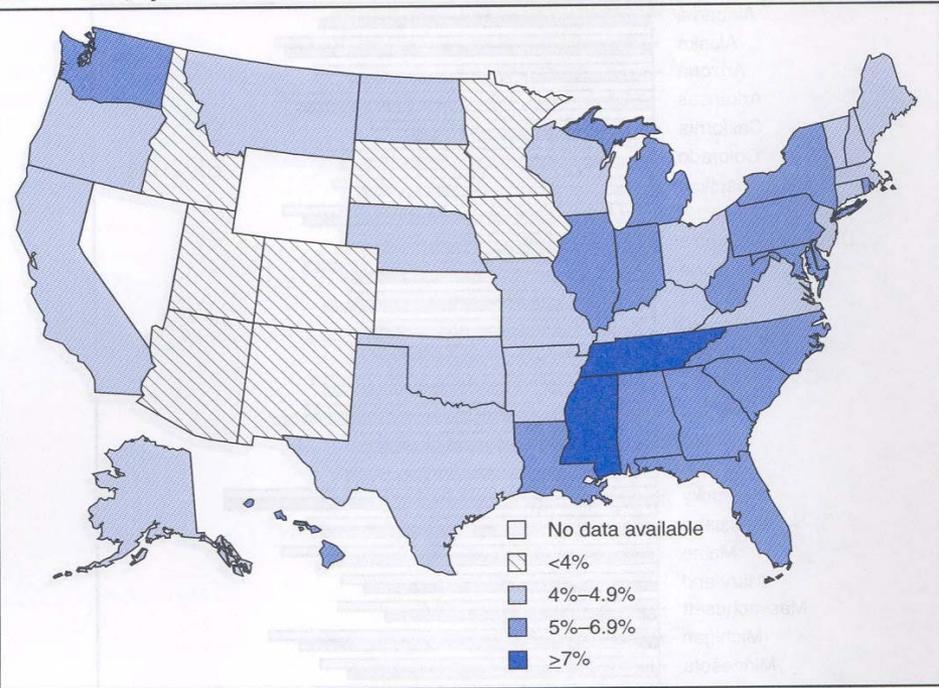


FIGURE 5. Prevalence of adults who reported ever being told by a health professional that they had diabetes, by state — United States, Behavioral Risk Factor Surveillance System, 2001

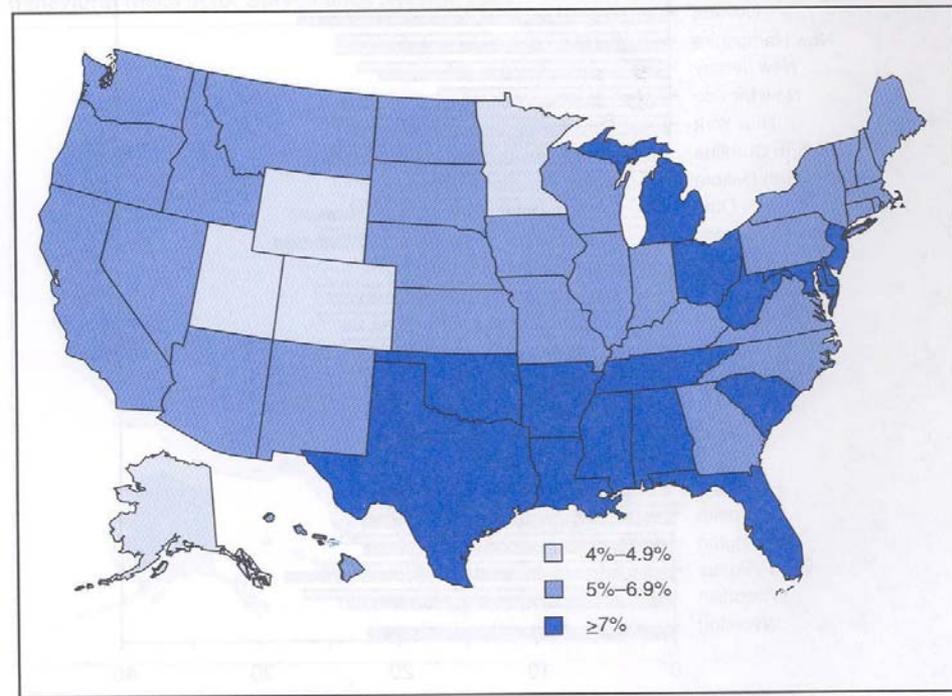
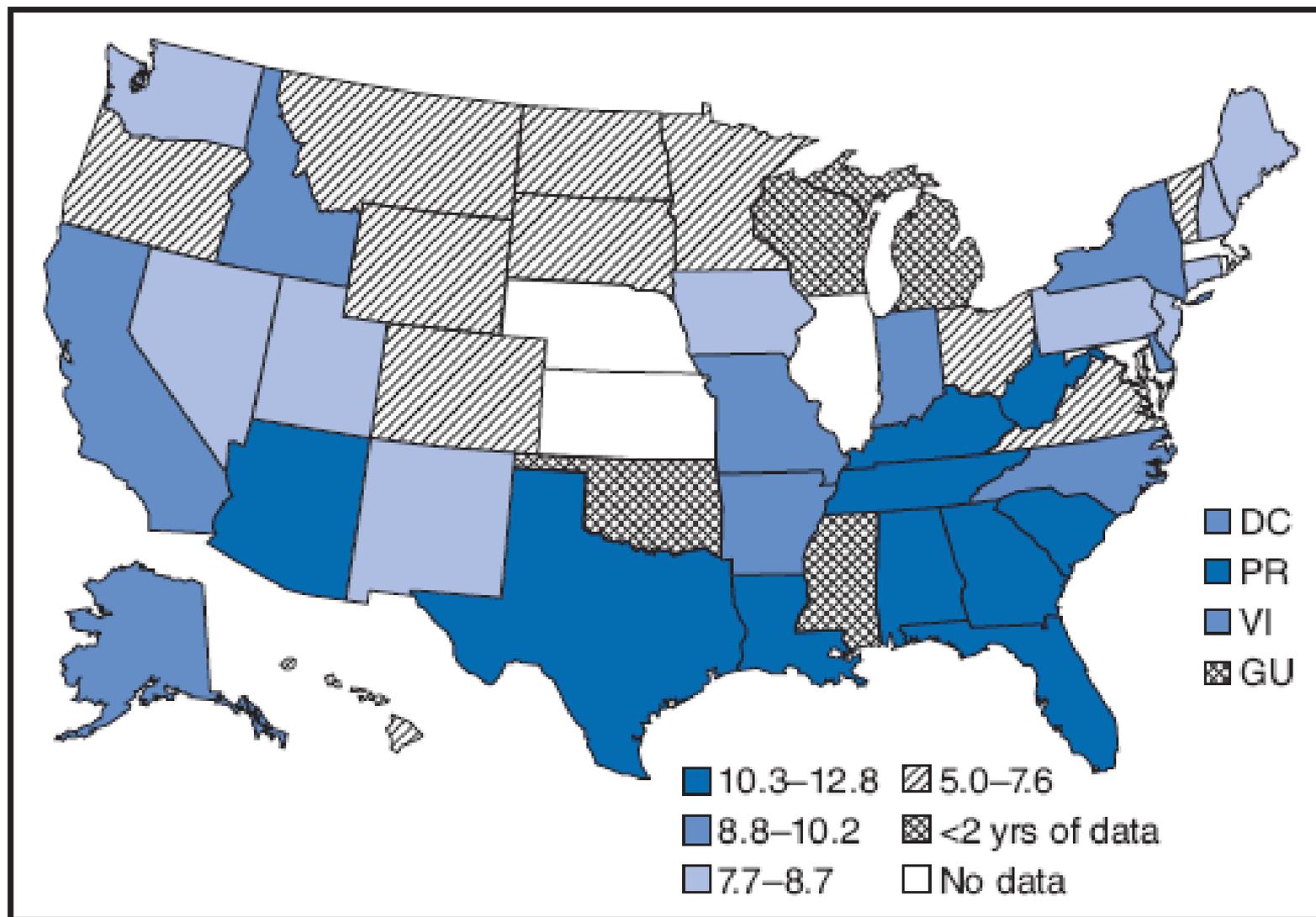
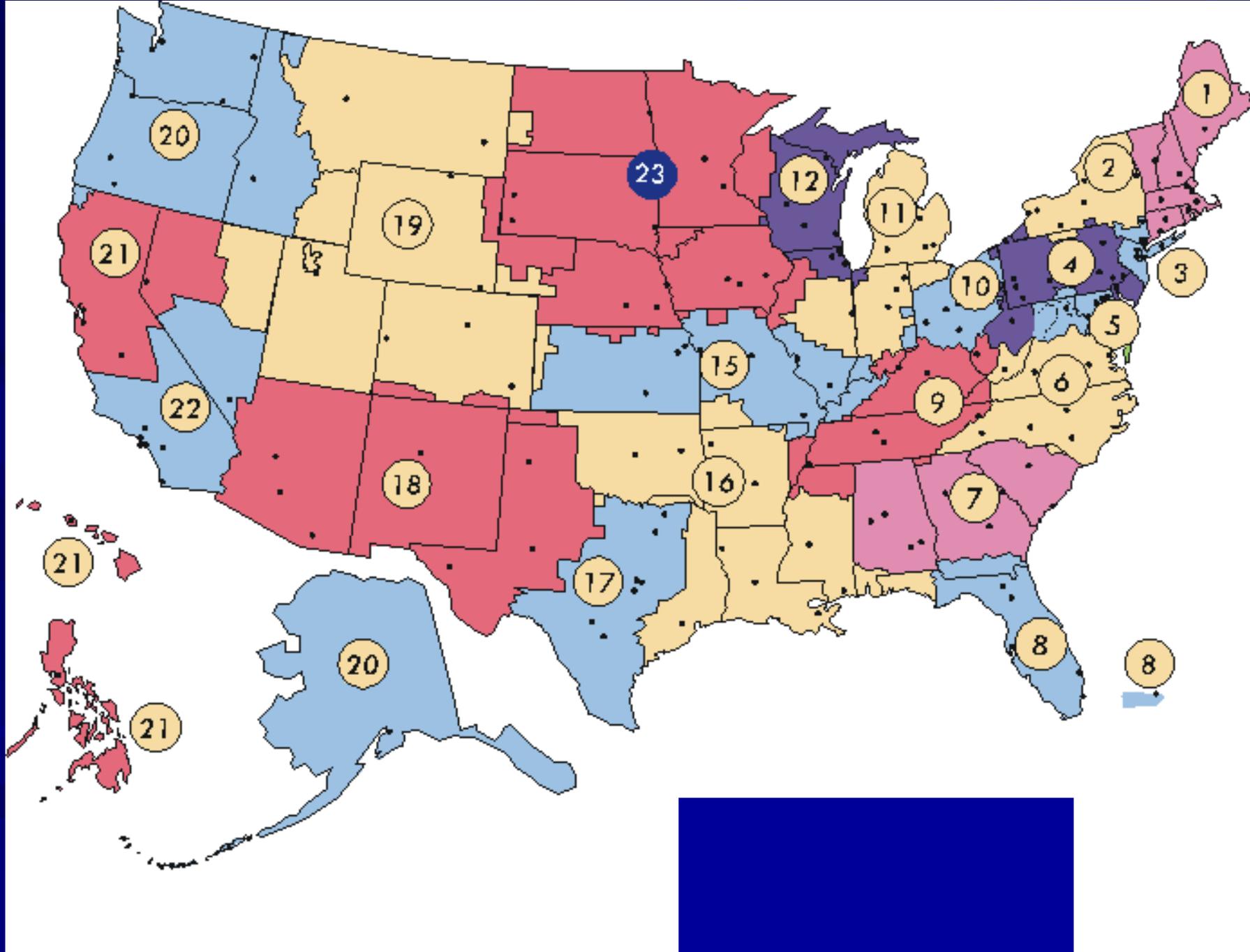


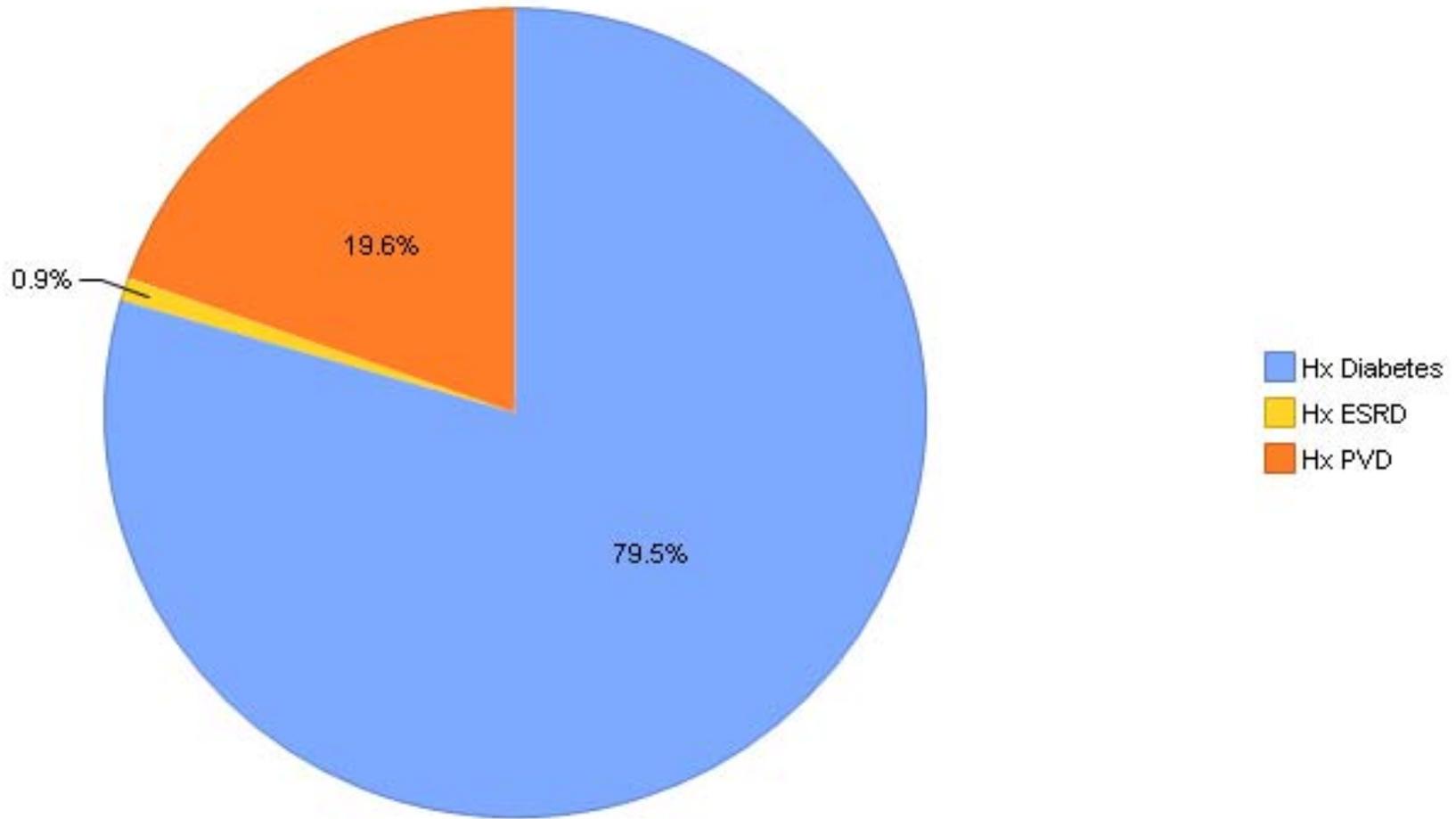
FIGURE. Average, annual age-adjusted incidence rate of diagnosed diabetes* among adults aged ≥ 18 years — Behavioral Risk Factor Surveillance System, United States, 2005–2007



* Per 1,000 population.



Distribution of PACT Patients



PVD vs. PVD Surgery (Past 18 months)

As of Date: Jun 06, 2008

All Location

Hx PVD

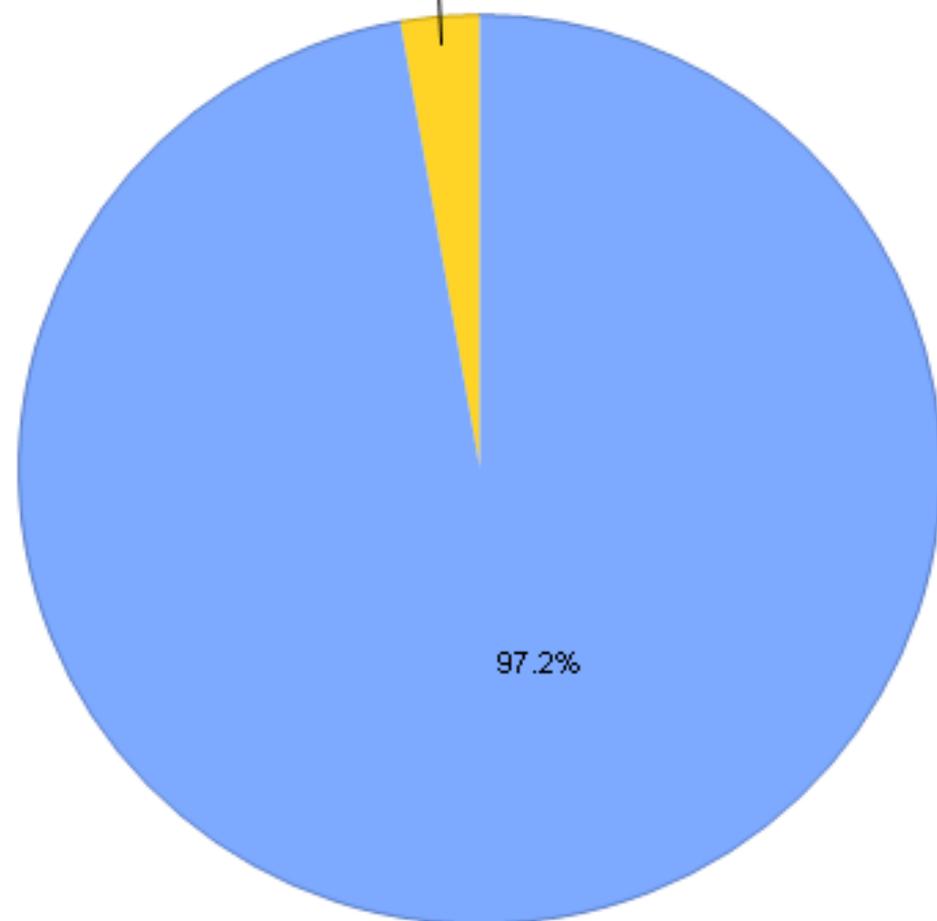
320,261

Hx PVD Surgery

9,133

PVD vs. PVD Surgery

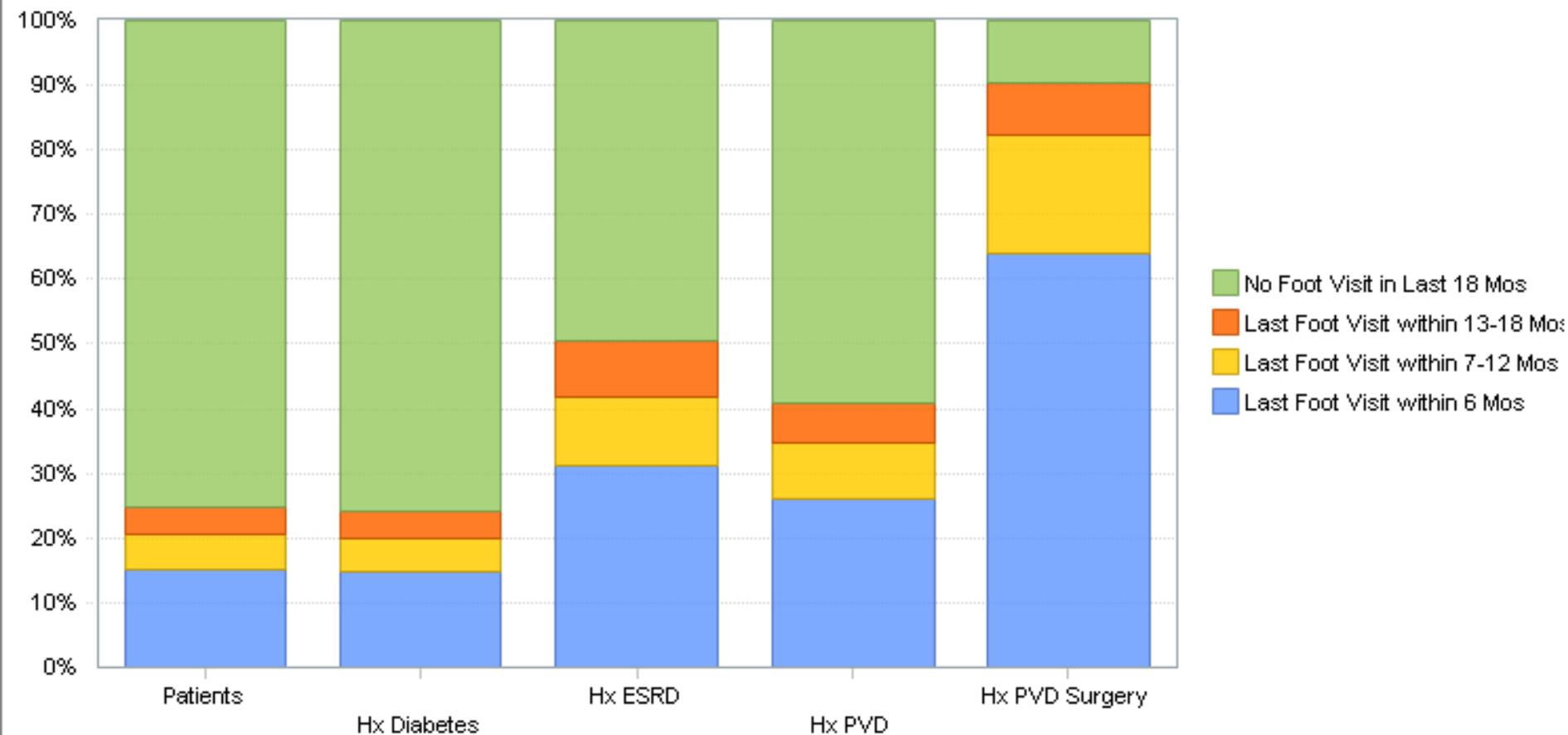
2.8%



97.2%

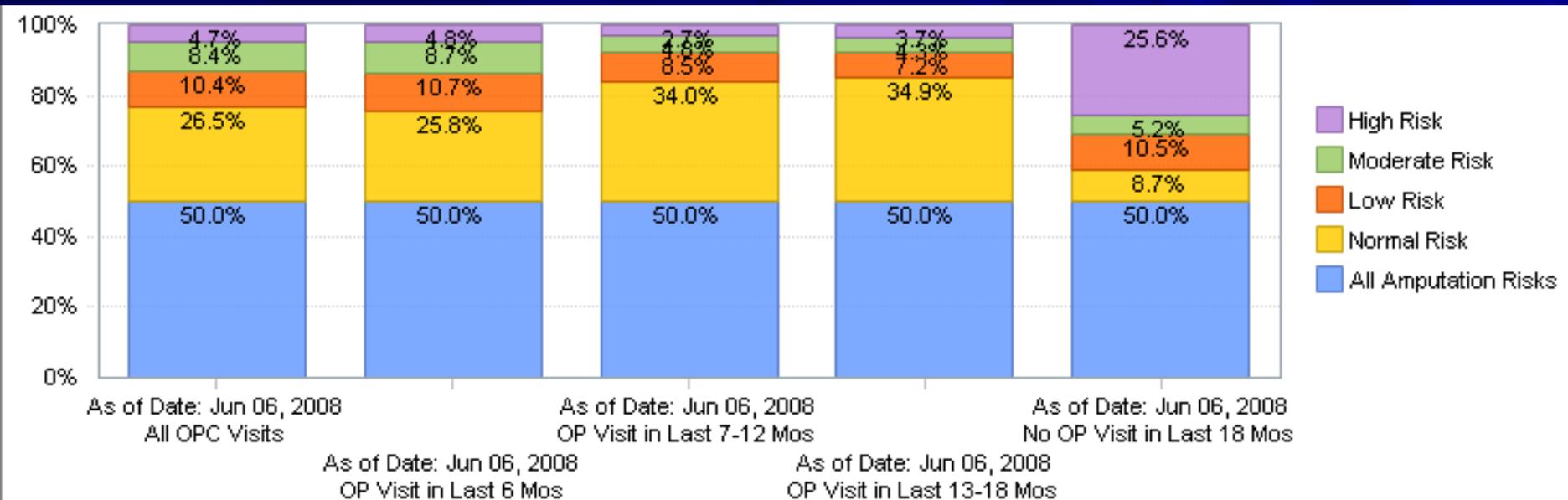
- Hx PVD
- Hx PVD Surgery

Are these patients getting foot care in the private sector?



| | Patients | | Hx Diabetes | | Hx ESRD | | Hx PVD | | Hx PVD Surgery | |
|----------------------------------|------------------|----------------|------------------|----------------|---------------|----------------|----------------|----------------|----------------|----------------|
| Last Foot Visit within 6 Mos | 219,832 | 15.07% | 178,876 | 14.66% | 4,382 | 31.07% | 78,114 | 25.99% | 5,399 | 63.93% |
| Last Foot Visit within 7-12 Mos | 79,131 | 5.42% | 62,423 | 5.12% | 1,499 | 10.63% | 26,130 | 8.69% | 1,554 | 18.40% |
| Last Foot Visit within 13-18 Mos | 64,379 | 4.41% | 51,475 | 4.22% | 1,248 | 8.85% | 18,674 | 6.21% | 689 | 8.16% |
| No Foot Visit in Last 18 Mos | 1,095,300 | 75.09% | 927,326 | 76.00% | 6,975 | 49.45% | 177,626 | 59.10% | 803 | 9.51% |
| Grand Total | 1,458,642 | 100.00% | 1,220,100 | 100.00% | 14,104 | 100.00% | 300,544 | 100.00% | 8,445 | 100.00% |

Are these patients getting foot care in the private sector?



| | | As of Date: Jun 06, 2008 | | | | |
|----------------------|-----------|--------------------------|---------------------------|----------------------------|-------------------------|----------------------------|
| | | All OPC Visits | | | | |
| | | OP Visit in Last 6 Mos | OP Visit in Last 7-12 Mos | OP Visit in Last 13-18 Mos | OP Visit in Last 18 Mos | No OP Visit in Last 18 Mos |
| All Amputation Risks | 1,458,642 | 1,322,812 | 106,492 | 26,595 | 2,743 | |
| Normal Risk | 773,657 | 682,278 | 72,363 | 18,537 | 479 | |
| Low Risk | 304,714 | 282,232 | 18,066 | 3,842 | 574 | |
| Moderate Risk | 244,071 | 231,214 | 10,304 | 2,268 | 285 | |
| High Risk | 136,200 | 127,088 | 5,759 | 1,948 | 1,405 | |

Deceased: 

Amputation Last



As of Date: Aug 08, 2008

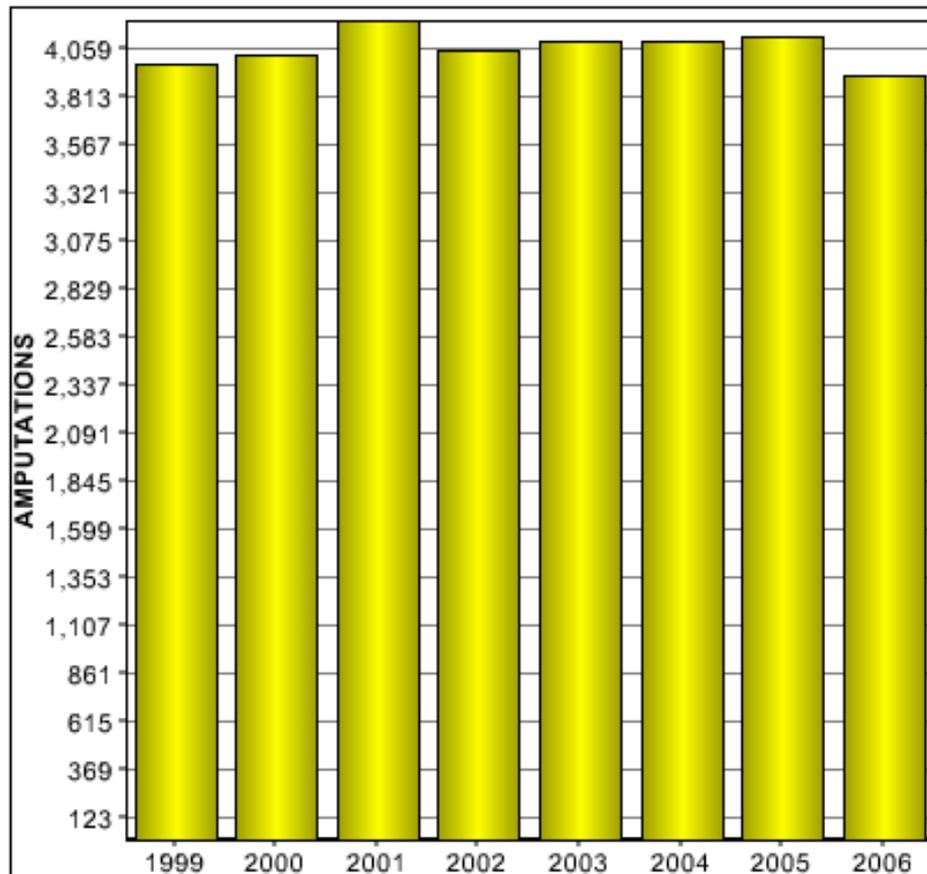


All Location

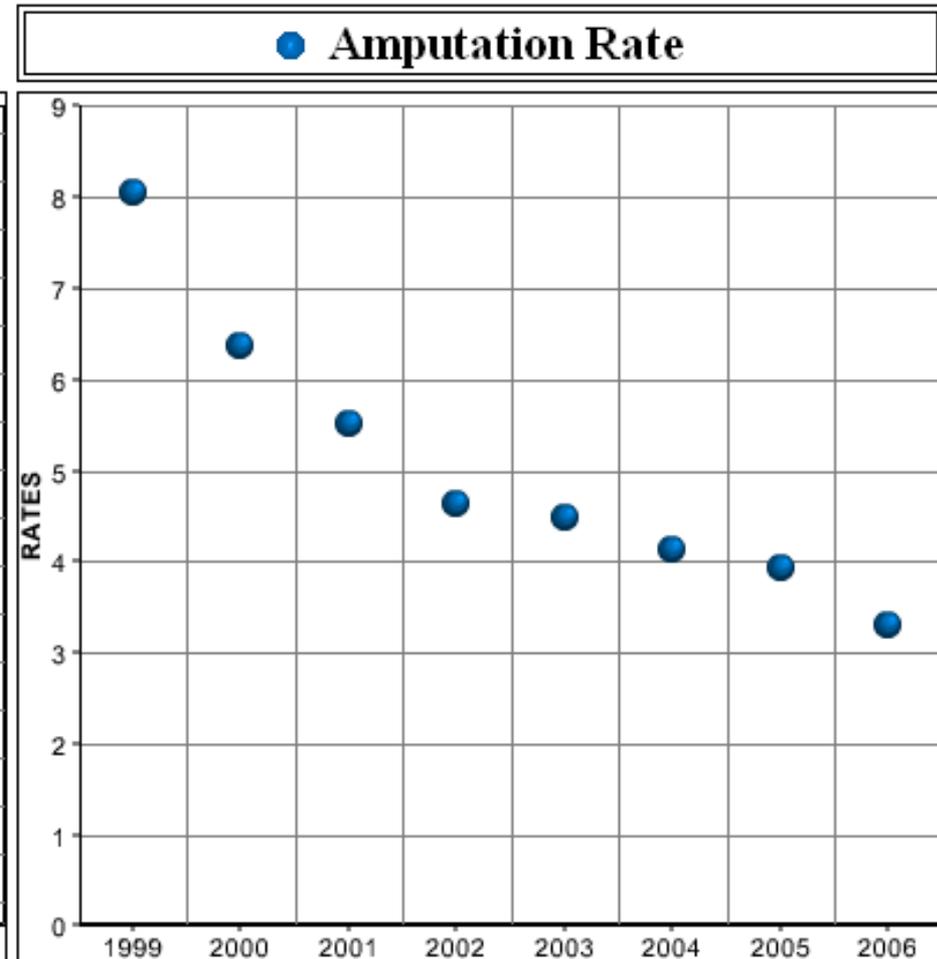
| | |
|--------------------------------------|-----------|
| Patients | 1,478,806 |
| Age Avg | 68.5 |
| Deceased | |
| Deceased% | 0.00% |
| Amputation Last 18 Mos | 5,512 |
| Hx Amputation Last 10 Years | 41,833 |
| Hx Charcot Foot | 4,415 |
| Hx Diabetes | 1,234,889 |
| Hx ESRD | 14,851 |
| Hx Foot Deformity or Surgery | 324,476 |
| Hx Gangrene | 6,732 |
| Hx Neuropathy | 248,196 |
| Hx Non-Healing Ulcer | 51,317 |
| Hx Osteomyelitis | 11,185 |
| Hx PVD | 306,124 |
| Hx PVD Surgery | 8,682 |
| Hx Smoking | 266,946 |
| Hx Smoking % | 18.05% |
| LTC Admission | 6,583 |
| Visit in OPC Last 18 Mos | 1,476,087 |
| Visit in Foot Clinic Last 18 Mos | 381,973 |
| Visit in PC Last 18 Mos | 1,456,794 |
| Visit in Other Specialty Last 18 Mos | 282,864 |

Age Standardized Amputations Patients with Diabetes/MaxAmp per Discharge

Number of Amputations



Amputation Rate

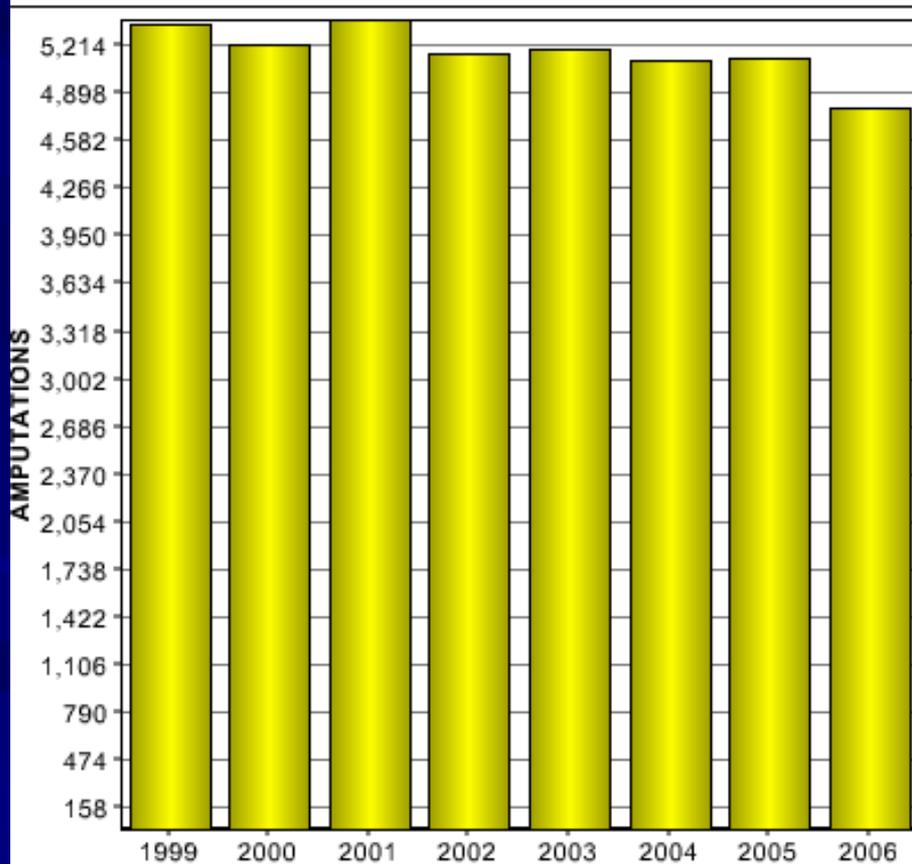


Age Standardized Amputations Patients with Diabetes/MaxAmp per Discharge

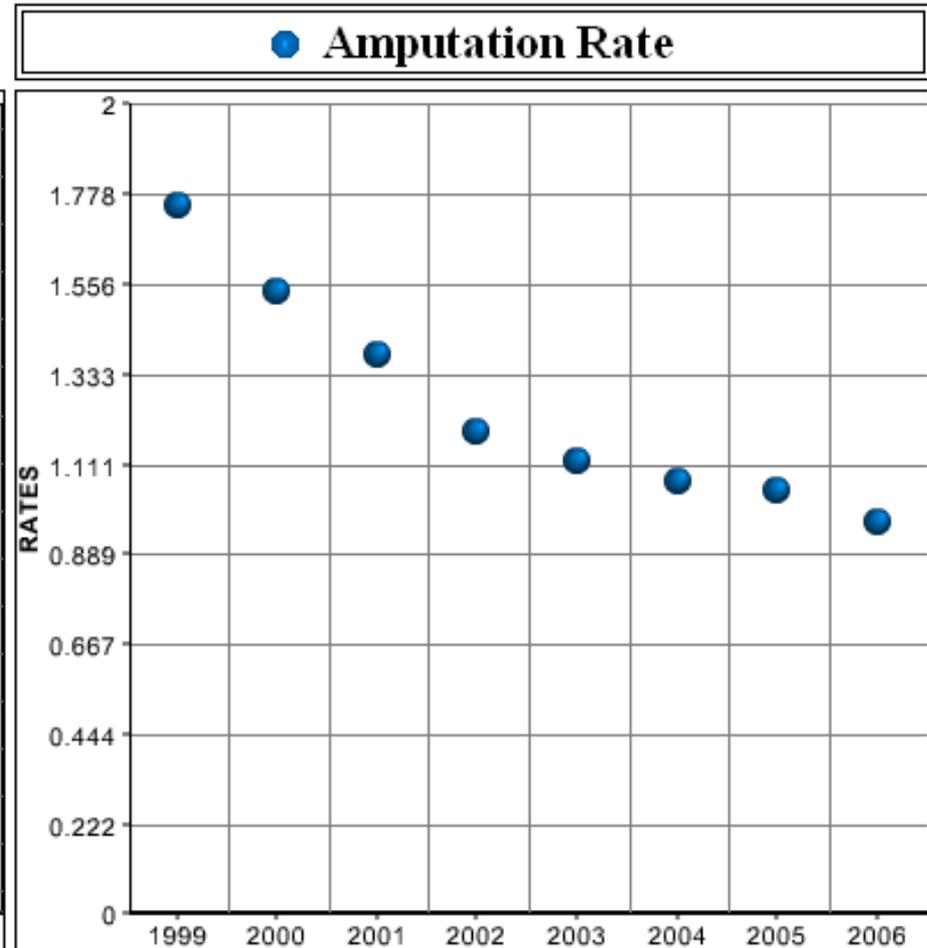
| Year | Amputations | Rate |
|-------------|--------------------|-------------|
| 1999 | 3983 | 8.05 |
| 2000 | 4030 | 6.38 |
| 2001 | 4195 | 5.53 |
| 2002 | 4051 | 4.63 |
| 2003 | 4090 | 4.49 |
| 2004 | 4095 | 4.14 |
| 2005 | 4124 | 3.94 |
| 2006 | 3922 | 3.31 |

Age Standardized Amputations All Patients /MaxAmp per Discharge

Number of Amputations



Amputation Rate



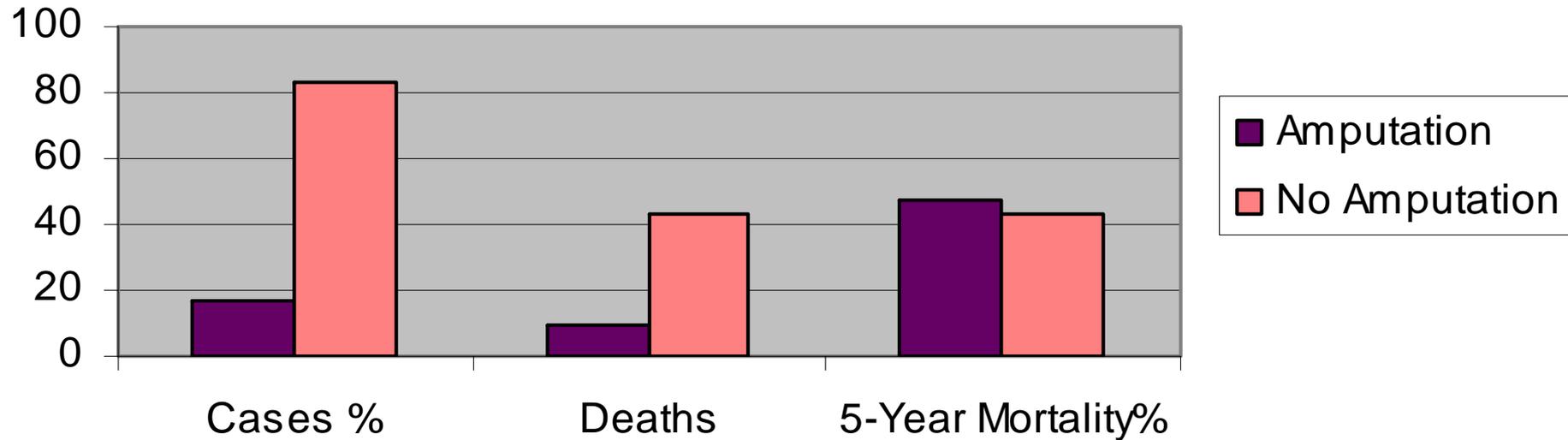
Age Standardized Amputations All Patients /MaxAmp per Discharge

| Year | Amputations | Rate |
|-------------|--------------------|-------------|
| 1999 | 5353 | 1.75 |
| 2000 | 5210 | 1.54 |
| 2001 | 5375 | 1.38 |
| 2002 | 5162 | 1.19 |
| 2003 | 5189 | 1.12 |
| 2004 | 5107 | 1.07 |
| 2005 | 5123 | 1.05 |
| 2006 | 4793 | 0.97 |

Amputation and Mortality in New-onset Diabetic Foot Ulcers Stratified by Etiology

- “All types of foot ulcers are associated with high morbidity and mortality.”
- Probal, MK, Mtonga, R, Gill, GV, Diabetes Care, Volume 26, Number 2, February 2003

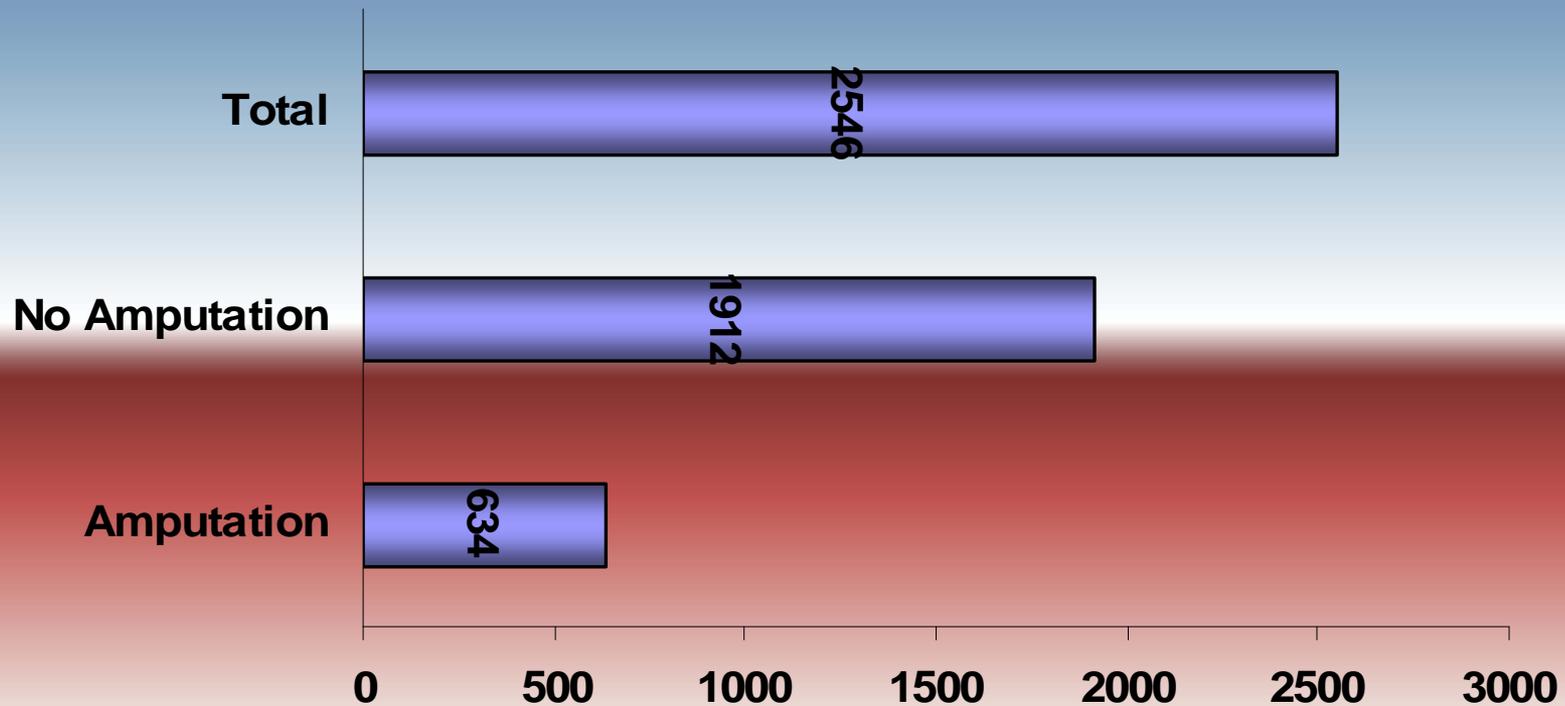
Amputation/No Amputation and Mortality



| | Cases # (%) | Deaths | 5 Year Mortality |
|---------------|-------------|--------|------------------|
| Amputation | 30 (17) | 9 | 47 |
| No Amputation | 153 (83) | 43 | 43 |

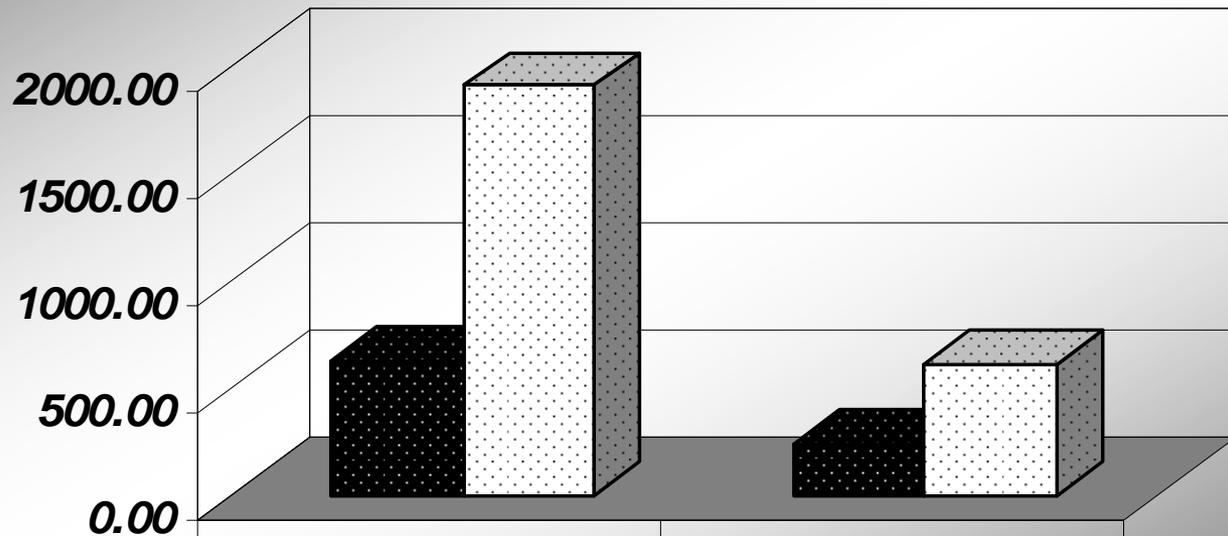
New Data

Amputations Vs No Amputation



New Data

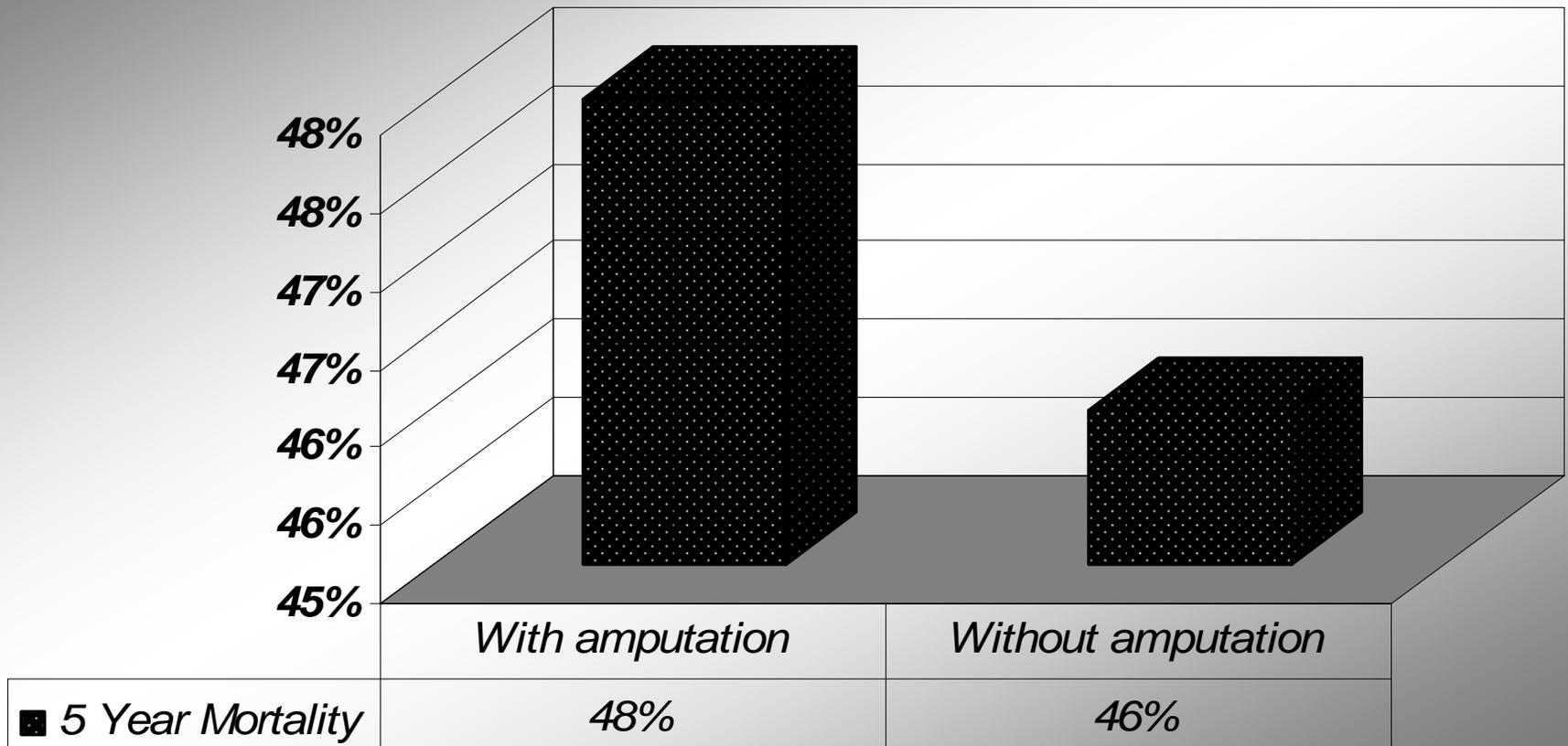
Cases and Deaths



| | <i>Cases</i> | <i>Deaths</i> |
|-----------------------------|--------------|---------------|
| ■ <i>With amputation</i> | 634.00 | 236 |
| □ <i>Without amputation</i> | 1912.00 | 612 |

New Data

5 Year Mortality



Risk Communication

- Diabetes as a malignant and metastatic disease
- Better Risk Communication
 - Motivate not frighten patients into the same type of resolve to beat diabetes that they would have for a diagnosis of cancer
- “Improved Survival of Diabetic Foot Ulcers Patients 1995 – 2008, Mathew Young et al, Diabetes Care November 2008
 - Survival improved after an aggressive cardiovascular risk management policy in diabetic foot clinics.

Are Amputations Worse Than Cancer?

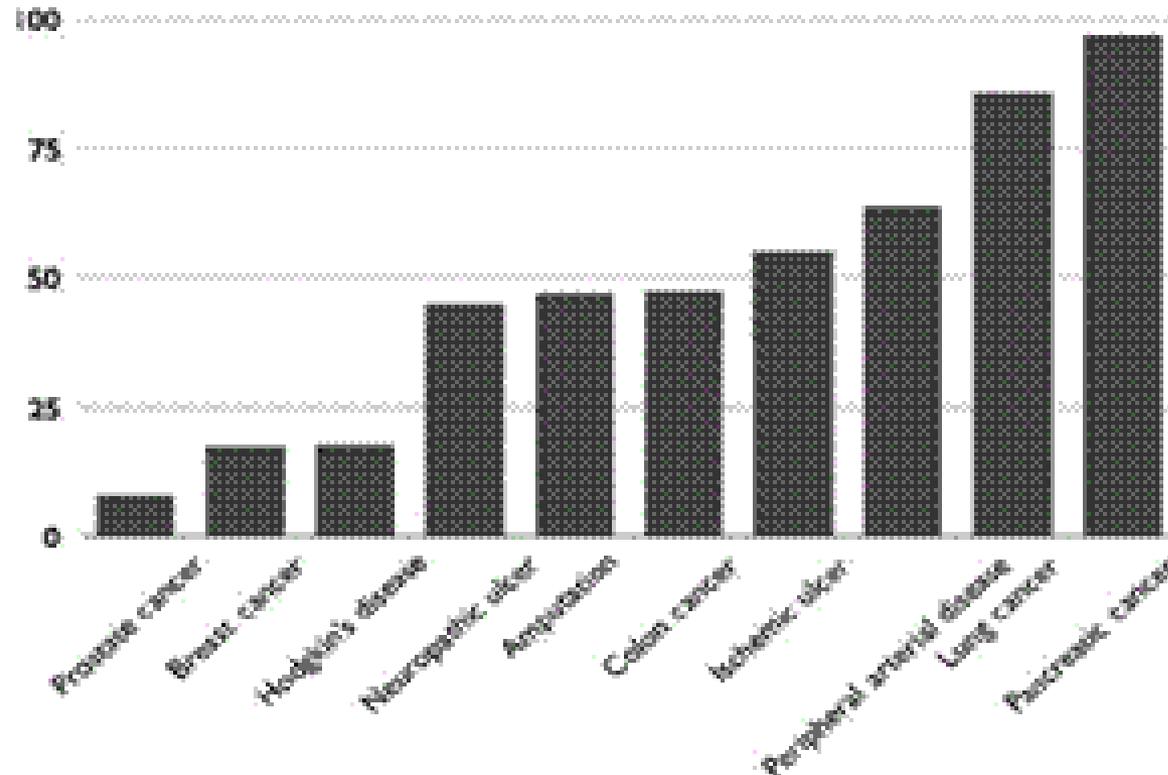


Figure 1. Five-year mortality (%). Perhaps now is the time to change our discussion with health-care administrators, policy makers and especially ourselves. The disease state that many of us treat routinely is, quite literally, killing our patients at a rate comparable to cancer. Addressing this issue aggressively may alter this and make a difference for millions of people worldwide.

Armstrong DG, Wrobel JS, Robbins JM. Are diabetes-related wounds and amputations worse than cancer? *IWJ*, 2007; 4(4) 286-7

Conclusion

- VA is the benchmark in amputation prevention programs
- Need to do an even better job doing “right things right the first time”. AT THE DIAGNOSIS OF DIABETES and MANDATORY AT FIRST ONSET FOOT ULCER
- “At risk” population is increasing
- Will continue to focus on better methods of prevention, treatment and rehabilitation to provide the highest functional capacity for veterans.