

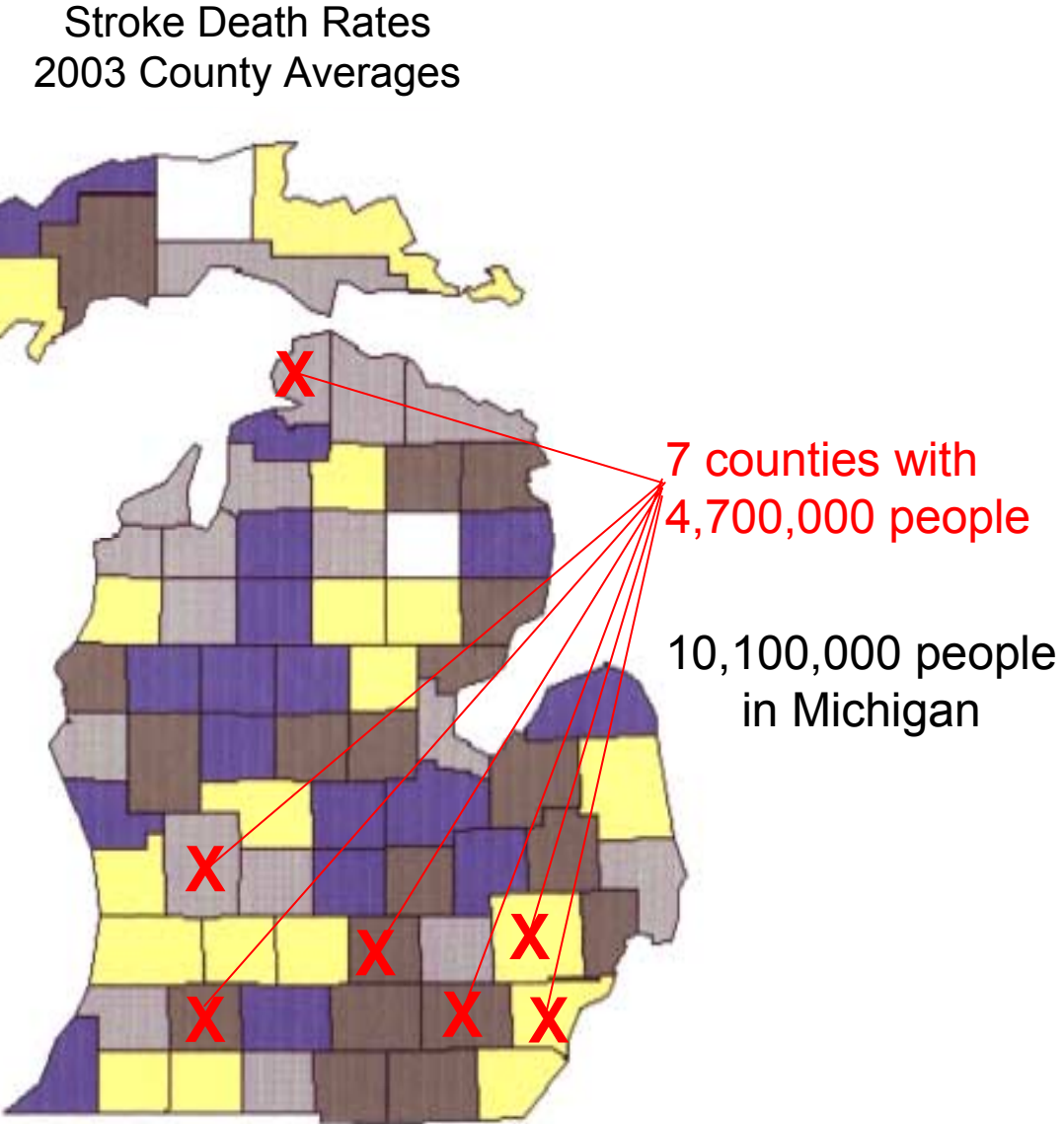
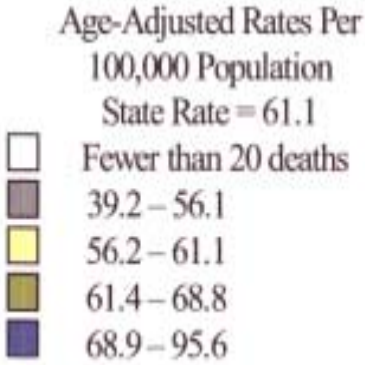
Why We Need Telemedicine for Emergency Stroke Healthcare: The Michigan Example



Lack of Emergency Access to Stroke Centers is Associated with High Stroke Mortality Rates

Stroke Death Rates
2003 County Averages

X = JCAHO stroke centers



Why Emergency Stroke Healthcare Needs Immediate Neurology Consultation

- accurate stroke diagnosis requires an expert (i.e., a neurologist)
- strokes < 3hr in duration can be emergently treated on-site (intravenous “clot busting” thrombolytics = i.v. t-PA)
- strokes 3 - 6hr in duration can be treated by interventional therapies, **but** these patients must be appropriately diagnosed and then referred to a large medical center

Stroke Telemedicine Can Safely and Effective Deliver i.v. t-PA Therapy

	<i>Audebert et al.</i> Stroke <u>36</u> (2005) 287-91.	<i>Hess et al.</i> Stroke <u>36</u> (2005) 2018-20.	<i>Schwamm et al.</i> Acad Emerg Med <u>11</u> (2004) 1193-7.	<i>S. Wang et al.</i> Stroke <u>35</u> (2004) 1763-8.	<i>LaMonte et al.</i> Stroke <u>34</u> (2003) 725-8.	overall
# underserved hospitals in network	12	8	1	7	1	29 total hospitals, 6 per network avg
# patients evaluated	356	194	24	75	23	672 patients total
% t-PA use BEFORE telemedicine	3%	n/a	0%	0%	0%	< 2%
% t-PA use AFTER telemedicine	30%	16%	25%	16%	24%	24%
% brain hemorrhage	8%	0%	17%	0%	n/a	≈ 5%

Stroke Telemedicine Can Safely and Effective Deliver i.v. t-PA Therapy

the German TEMPIS system

- 5 hospitals with stroke telemedicine compared against similar 5 hospitals without
- 3122 stroke patients evaluated over 2 year period
 - stroke severity comparable between hospital groups
- in hospitals with stroke telemedicine...
 - greater use of necessary diagnostic tests (dysphagia tests, carotid ultrasound, etc.)
 - 5% t-PA use (vs. 0%)
 - equivalent, if not better, 3 month measures of death, institutionalization, or severe disability (measured with the Rankin Scale and Barthel Index)

Summary

- telemedicine is an effective means for neurologists to evaluate stroke patients and guide their treatment
- telemedicine can provide a valuable stroke healthcare service to communities that would not otherwise have access to it

What is the Northern Stroke Alliance (NSA)?

a group of advocates who promote
the development of video
conferencing networks that provides
immediate consultative service from
stroke-specialized neurologists to
physicians treating stroke patients in
rural and small-urban community
hospitals

Core Goals of the NSA

- to assist with the development of continuous and reliable consultative service to assist with the provision of stroke healthcare, with particular focus on diagnosis and treatment in the acute setting
- increase the appropriate use of thrombolytic agents (I.V. t-PA) in stroke patients to 10-20% of the hospital's stroke patient volume

Other Activities of the NSA

- develop referral plans with participating hospitals, as needed
- provide written subacute stroke care guidelines
- provide stroke CMEs at participating hospitals and train local staff in the use of the NIH stroke scale
- obtain feedback from participating hospitals by...
 - organizing a secure, on-line web log
 - organizing network meetings
- monitor adequacy of the service with standard clinical outcome measures

The Northern Stroke Alliance

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