

Healthcare in the Age of Technology

Herberger College of Business
St. Cloud State University
December 3, 2008

Nancy E. Rehkamp, MPA, Principal

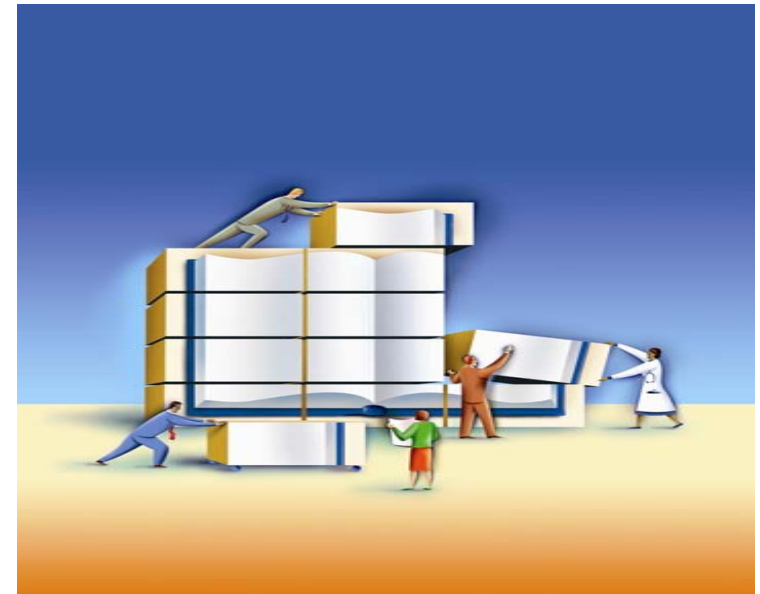


LarsonAllen
LLP
CPAs, Consultants & Advisors

**NOTICEABLY
DIFFERENT**

Our agenda for today...

- Our world is changing... health care in transition.
- Technology changes to meet health care needs.
- A town meeting... a time for reaction and discussion.



Doing Nothing Is Not An Option....

- 1. The US spends more per capita** than any other country, but we lag behind other developed countries on most health indicators.
 - Infant mortality
 - Obesity
 - Survival rates for selected cancers and heart disease
- 2. Health insurance premiums have increased 5.5 times faster** than inflation and 2.3 times faster than business income and 4 times faster than wages in the last five years¹.
- 3. Growth in Medicare, Medicaid and Veteran's Affairs health services** are expected to grow by almost 100% over the next 10 years.
- 4. The number of uninsured** has risen to over 45.7M people in 2007¹ and is expected to continue increasing if the economy weakens further².

¹ *5 Myths on Our Sick Health System*, New America Foundation; published in the Washington Post, 11/23/08; Shannon Brownlee accessed via the web at www.Newamerica.net

² *Call to Action Health Reform 2009*, Whitepaper published November 12, 2008 US Senator Baucus, Chair, Senate Finance Committee accessed via the web



Doing Nothing Is Not An Option....

5. **The cost of shortened life expectancy and delayed treatment** by those uninsured in Minnesota is estimated to be between \$1B to \$2B in 2007 and \$104B to \$207B nationally.¹
6. **Health care is about 16% of GDP** and is expected to grow to 25% if left unchecked by 2030.
7. 51% of those surveyed by EBRI said that “even though there are positive aspects of the current health care system, **major changes are needed.**”²
8. **RN shortages will be dramatic, growing** as high as 25% in some parts of the US by 2020.
9. **Primary care physicians are already in short supply** and expected to grow to 250,000 within the next ten years.
10. Waste in the US health care system is estimated to be up to 3.42% or \$65,099B.³

¹*The Cost of Doing Nothing A National Snapshot*, The New American Foundation page 57; accessed via the web at www.Newamerica.net

²*Implications of the Economic Downturn on Health Care Access*, Health Care Financing Organization Newsletter, Nov. 21, 2008 accessed via the web

³*Waste in the US Health Care System*, Milbank Quarterly journal, Vol. 8, #4, December 2008, pg. 648.



Minnesota Health Care Leads the Nation

	UCLA Med Center	Mass General	Mayo – St. Mary's
CMS Composite Score - Acute	81.5	85.9	90.4
Spending Among Medicare Patients in last 6 months of life (2006):			
Total Medicare Spending	\$50,522	\$40,181	\$26,330
Hospital Days	19.2	17.7	12.9
Physician Visits	52.1	42.2	23.9

Source: Elliot Fisher, Dartmouth Med School; presented by CBO with proposed 2008 Budget; 1/31/08; Data source is the Dartmouth Atlas, 2003. Accessed at cbo.gov 2/08

This data was presented by the Congressional Budget Office in its discussion of Growth in Health Care Costs 1/31/08. Changes in spending or hospitalization to reflect the St. Mary's Hospital – Mayo Clinic could have a significant impact on all levels of health care providers.

The 2008 Dartmouth Atlas of Healthcare found that the cost of end of life care at Mayo was still one of the lowest in the country.



Minnesota Health Care Leads the Nation

Key Medicare Metrics - 2005	St. Mary's Mayo	St. Cloud Hospital	Abbott Northwestern	Univ. of Mn. Med Center	St. Mary's Duluth	US
CMS Composite Score	90.8	90.8	89.7	86.0	94.1	--
Spending in last 2 yrs of life	\$39,984	\$45,113	\$50,871	\$63,652	\$53,432	\$52,838
% enrolled in Hospice	32.2%	24.7%	36.8%	32.7%	29.1%	31.6%
% reporting their doctor always communicated well	84%	80%	NA	71%	83%	80%
% rated the hospital a 9 or 10	74%	71%	NA	56%	65%	64%
Magnet Hospital Status	X	X	--	--	--	200+

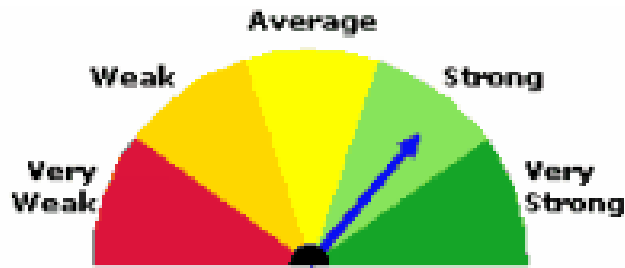
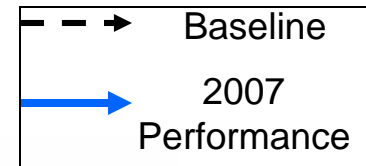
Source: Dartmouth Atlas of Healthcare, Benchmarking Report by hospital, accessed via the web 11/08. Hospital Compare, CMS website accessed 11/08.

Minnesota hospitals rank in the top on almost all measures used to measure quality and customer satisfaction. Additionally, health care costs in Minnesota are lower than other parts of the US, but there is still much to be done.

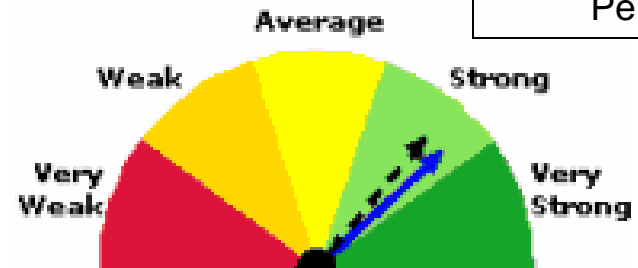


Minnesota Health Care Leads the Nation

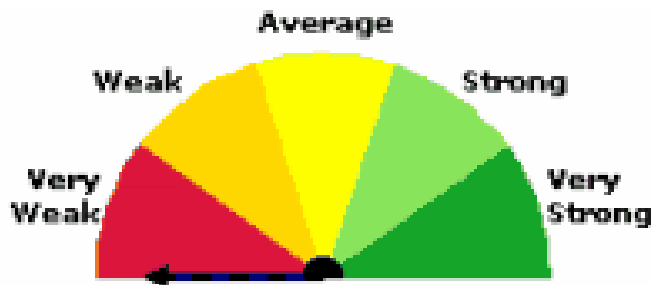
Minnesota Health Performance for 2007



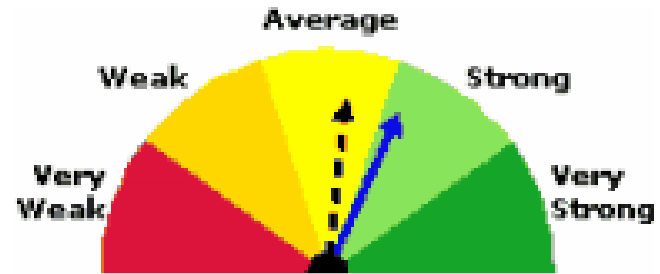
Performance Meter:
Hospital Care Measures



Performance Meter:
Ambulatory Care Measures



Performance Meter:
Home Health Care Measures

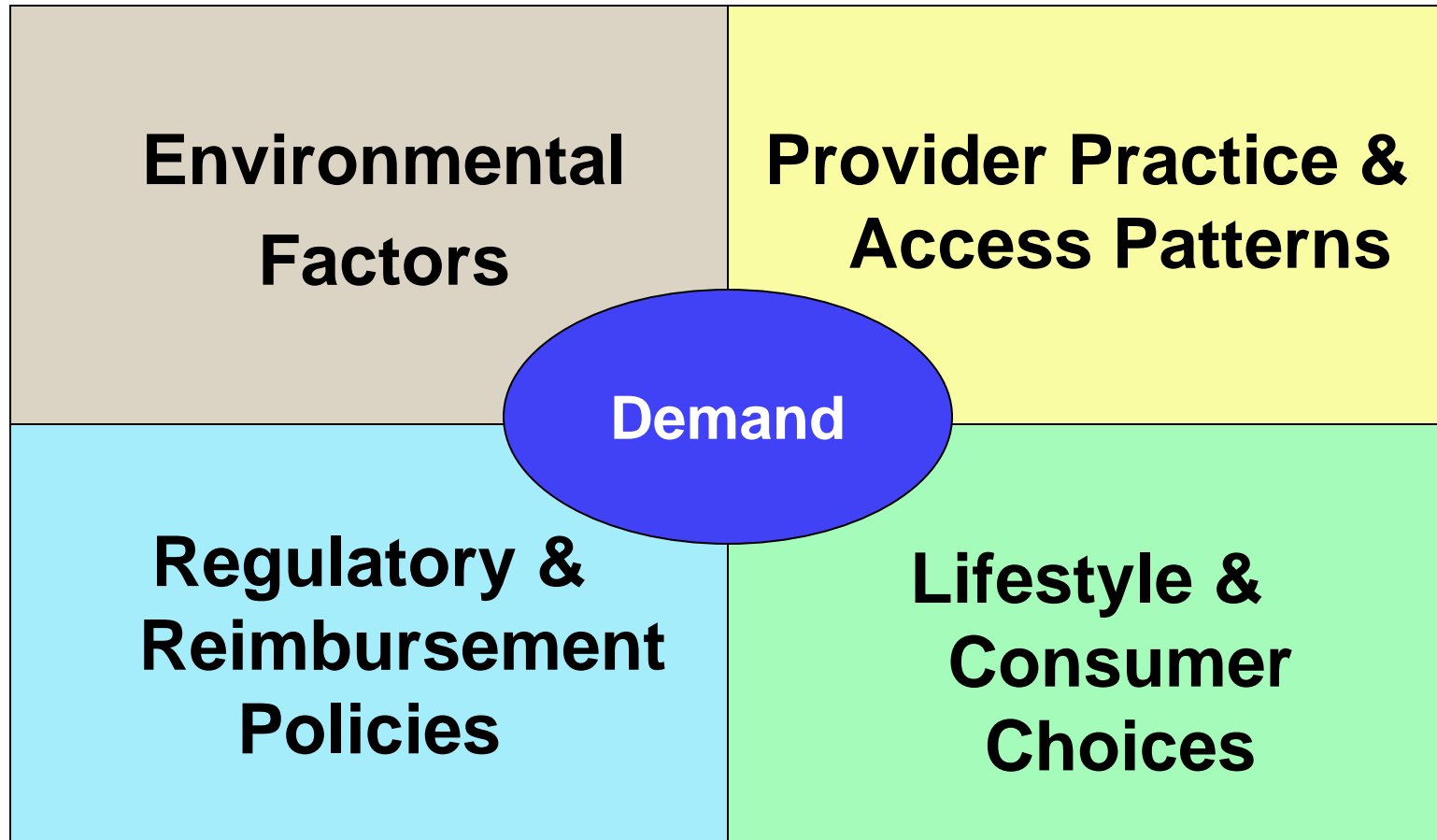


Performance Meter:
Nursing Home Care Measures

Based on 112 health care metrics Minnesota was the top performing state on the National Health Quality Report for 2007.



Demand Predictors & Influencers



Explosive Health Growth - Key Drivers

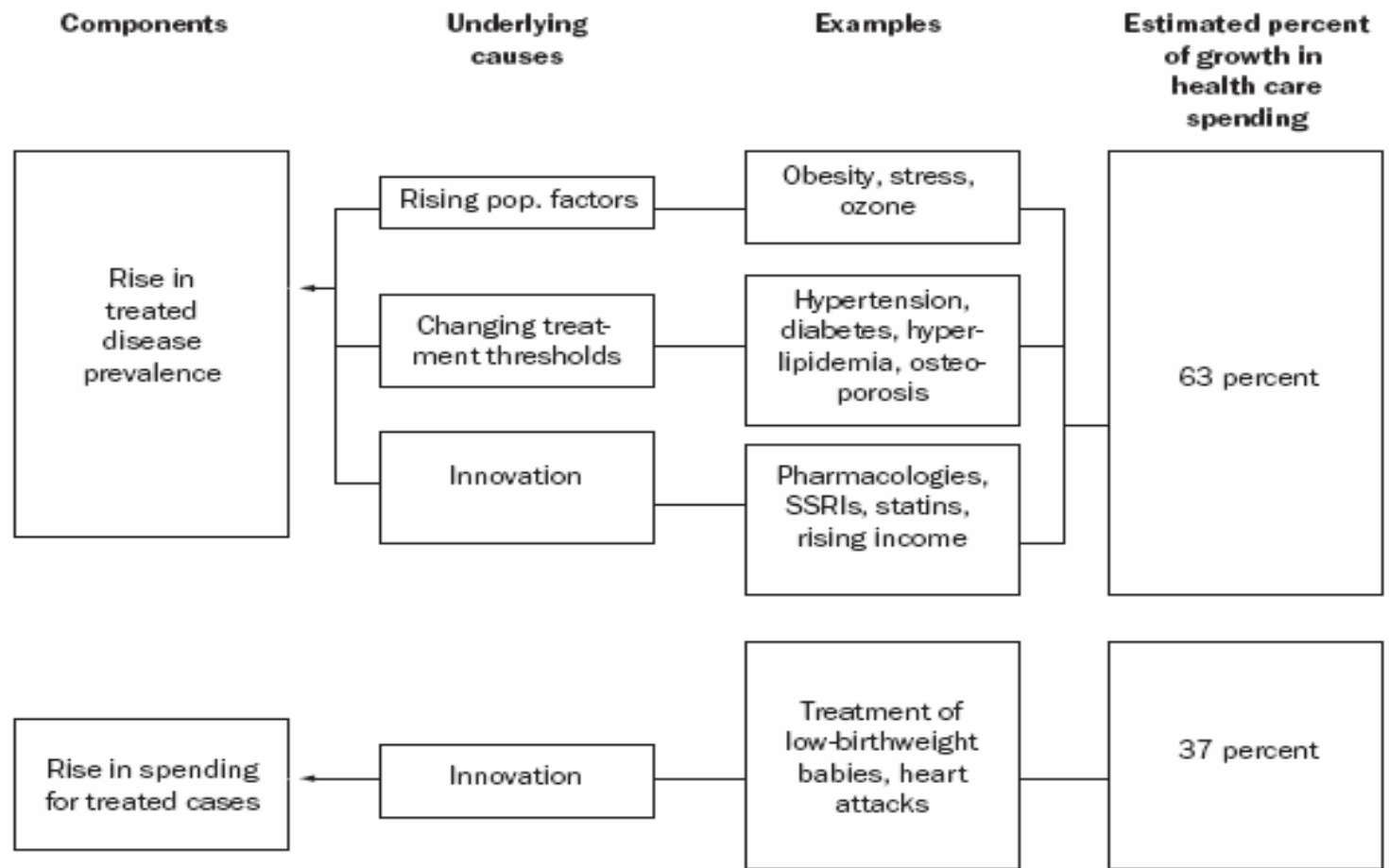
Health care utilization changes are resulting from:

- Advances in technology
- Earlier diagnoses and treatment
- Demographic changes
- Substitution of levels of care
- Quality improvement and measurement
- Workforce availability
- Changing customer expectations
- Changes in health status (obesity, Alzheimer's)



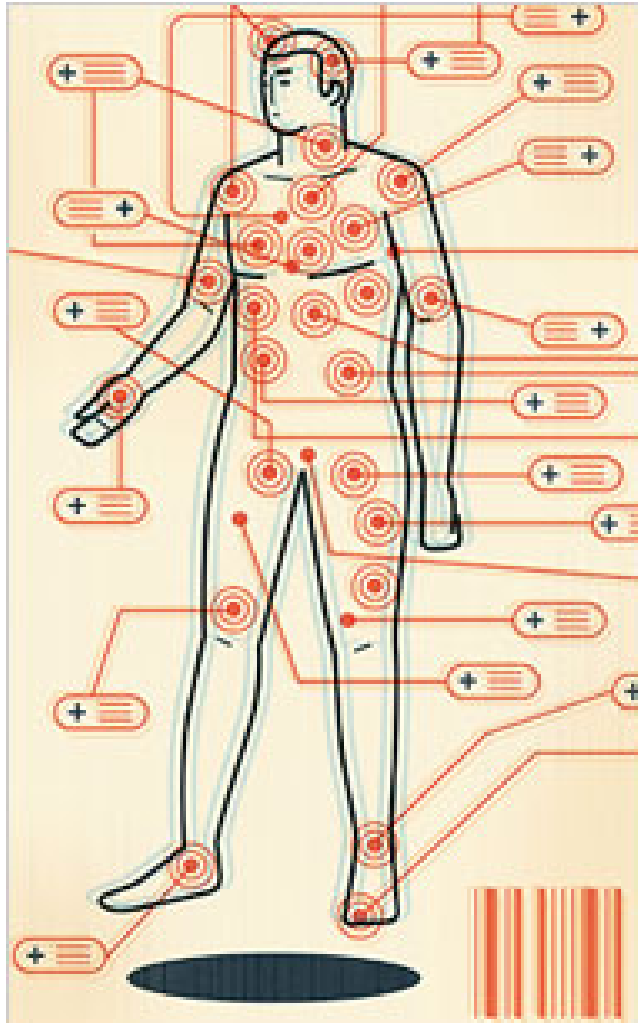
Financial Stress: Changing Economics

EXHIBIT 1
Factors Accounting For The Rise In Real U.S. Per Capita Health Spending



SOURCE: Derived from K.E. Thorpe et al., "The Rising Prevalence of Treated Disease: Effects on Private Health Insurance Spending," *Health Affairs*, 27 June 2005, content.healthaffairs.org/cgi/content/abstract/hlthaff.w5.317 (26 August 2005).

Epidemic of Diagnoses or Technology Advances?



A recent NY Times article outlined the epidemic of diagnoses that is occurring and raised the question about what is normal. The ability to identify and diagnosis conditions before they occur is resulting in greater health care utilization.

Source: NY Times, 1/2/07; *“What is making Us Sick Is an Epidemic of Diagnosis”*; H. Gilbert Welch, Lisa Schwartz & Steve Woloshin.

Regional Variation Matters: 1.3 million Over 65 in 2030

Pop: 45,270

Pop: 90,780

Pop: 30,777

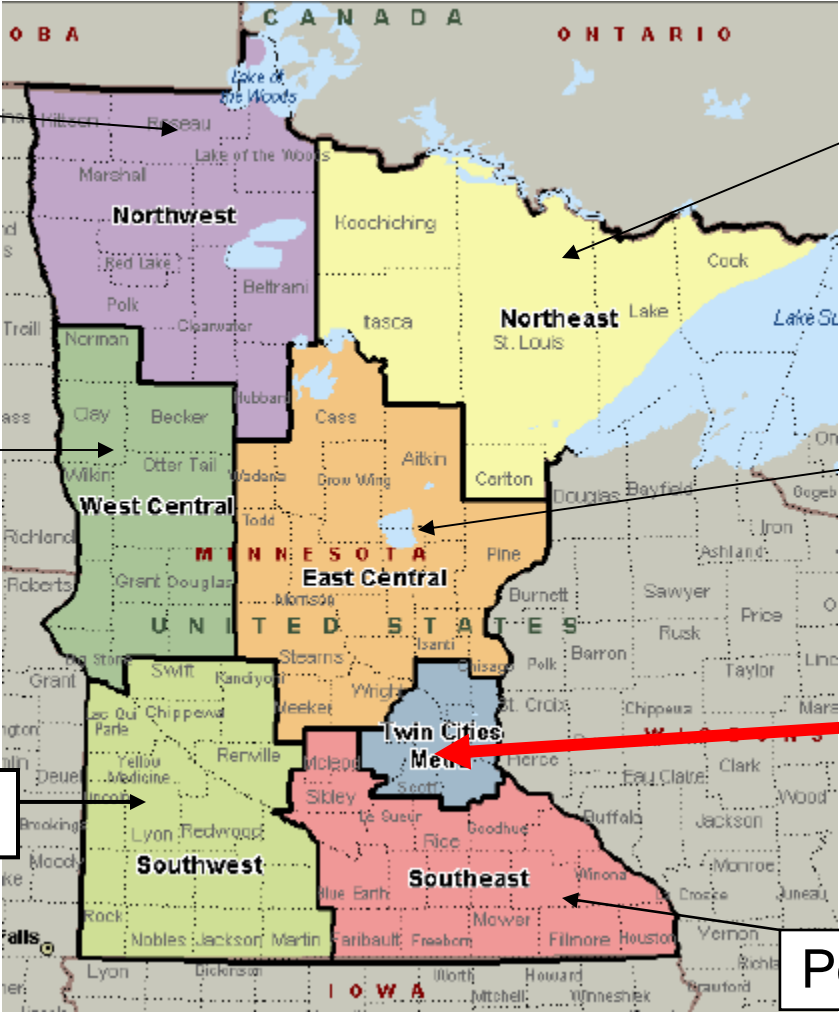
Pop: 200,480

Pop: 79,880

Metro has majority of older Minnesotans in 2030

Pop: 630,290

Pop: 174,120



Aging Does Not Always Translate to Higher Costs

Dynamic Equilibrium is:

The hypothesis is that increased life expectancy is translated into additional years in good health.

- ◇ The rate of disability in older adults is declining despite growth in chronic disease.
- ◇ Older adults are living independently longer and moving to alternative sites with the expectation that they will age in place.
- ◇ Medicare spending per person does not substantially change with the increased life expectancy.
- ◇ One of the fastest growing age cohorts of Medicare and disability is in the population 21 to 64 years.

Source: Projecting OECD Health and Long-Term Care Expenditures: What Are the Main Drivers?; Economics Department Working Papers No. 477; Page 9; CMS website and estimated budget report for FY2008.



Fewer Informal Care Givers Challenges Providers

**Variable Impact of Changes in Future Care Giver profiles –
(Higher ratios reflect fewer potential informal caregivers available to care for elders)**

	Care Giver Ratio 85+/100 Females 45-64 yrs		
	2000	2010	2030
East Central	16.0	14.8	24.1
Northeast	18.9	19.3	31.4
Northwest	21.4	19.9	30.9
Southeast	18.8	18.2	27.6
Southwest	29.0	25.9	37.5
West Central	24.5	21.6	33.2
Twin Cities Metro	12.8	11.5	18.8
Statewide Average	16.4	14.7	23.1

About 66% of persons 85+ live alone and rely on others to assist them with activities of daily living.

Each 1% change in caregivers results in about a \$30M increase in public spending for formal care.

Source: Population estimates by age – Mn. State Demographer; Ratio calculations & beds available from DHS & Transformation 2010.



Minnesota Hospital Use Rates Have Declined

	Use Rate per 1,000		
	<u>2005</u>	<u>2006</u>	<u>Change</u>
GRAND TOTAL			
0 -14	49.3	50.8	2.9%
15-44	82.4	82.0	-0.5%
45-64	108.6	108.0	-0.6%
65+	<u>331.7</u>	<u>329.3</u>	-0.7%
TOTAL	112.8	112.8	-0.1%

Source: Minnesota Hospital Association, January 2008; Discharge Use Rate by County.

The use rates have not declined in all age groups. Much of the 65+ decline is in 85+ individuals who are not seeing repeat admissions. The use rate decline is not uniform across the state and with the growth in the number of 65+ population the total hospital admissions increased.

It is anticipated that the overall use rates decline continued into 2007 and 2008.



Hospital 65+ Utilization Rates by Region – 2006 & 2005

Discharges per 1,000			
Region	2006	2005	% Change
→ East Central	336.04	339.37	-1.0%
Northeast	356.30	367.01	-2.9%
Northwest	307.39	315.46	-2.6%
Southeast	316.52	316.19	0.1%
Southwest	331.59	340.25	-2.5%
Twin Cities Metro	327.72	331.29	-1.1%
West Central	331.71	309.19	7.3%
Grand Total	329.27	331.71	-0.7%

Source: MHA

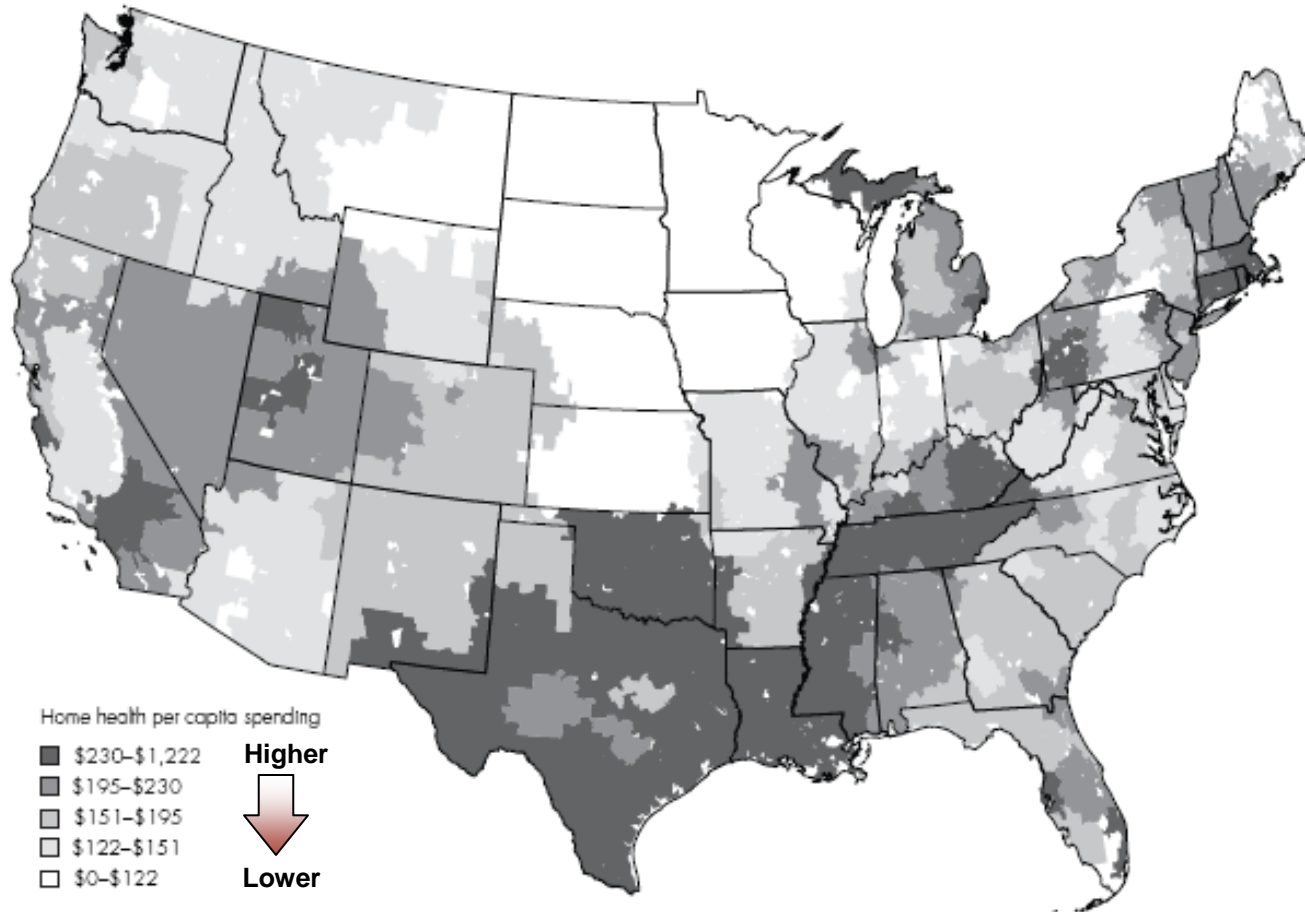
While the use rate is declining in most regions there are still some parts of the state experiencing growth. Those Regions that have higher use rates may experience a decline in future demand for aging services. The US rate of hospitalization for Medicare in 2005 was 354 per 1000 beneficiaries.



Home Care Utilization Varies...

**FIGURE
2E-1**

Significant variation in Medicare spending for home health



Medicare home health use post-acute is very low in the Midwest.

Substituting home care for other levels has met with mixed results.

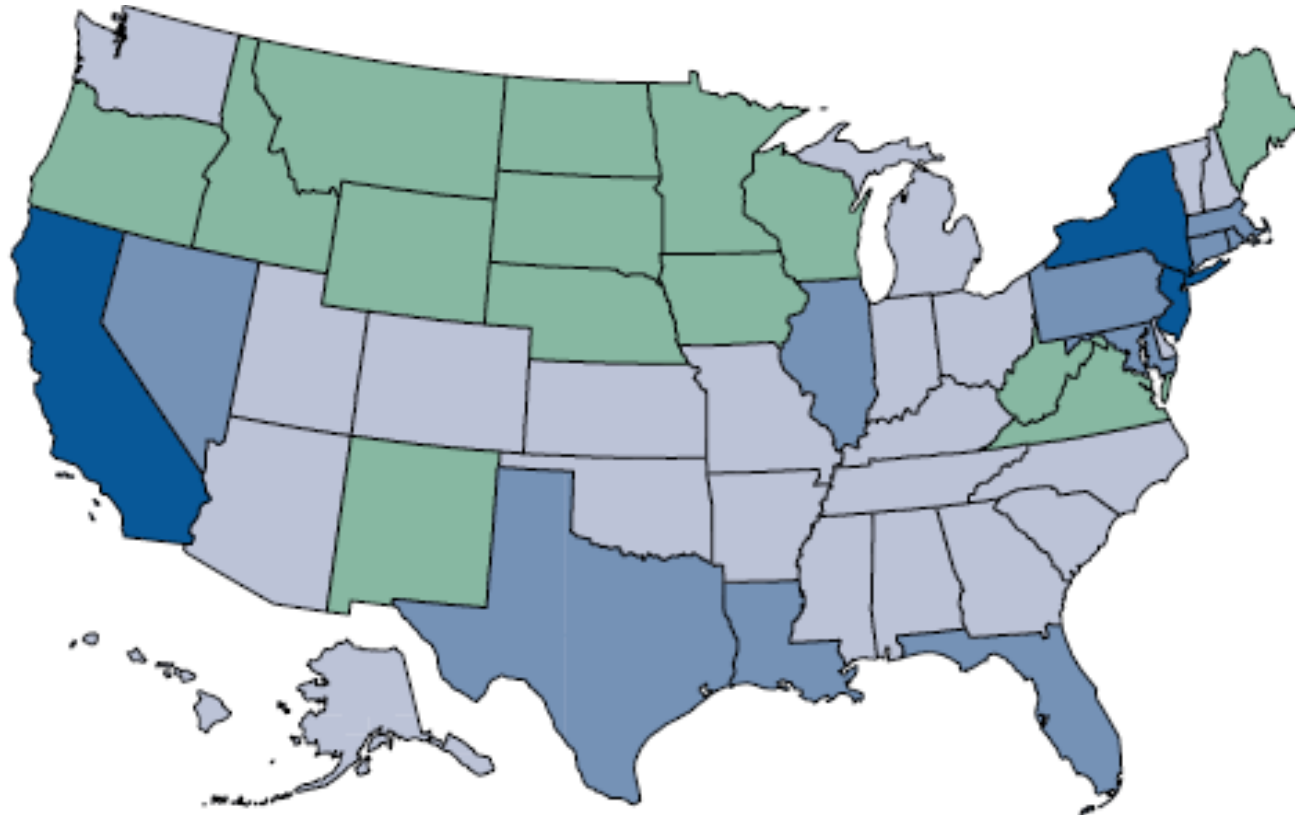
The challenge is to find the right balance for the clients and for payers.

Source: Report to Congress, MedPac Payment Policy March 2008, page 178

Source: Dartmouth Atlas of Health Care. <http://www.dartmouthatlas.org>.



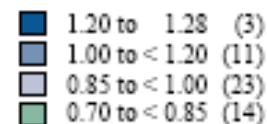
Medicare Spending During Last Two Years of Life



Minnesota spending at end of life is about 82% of the national average.

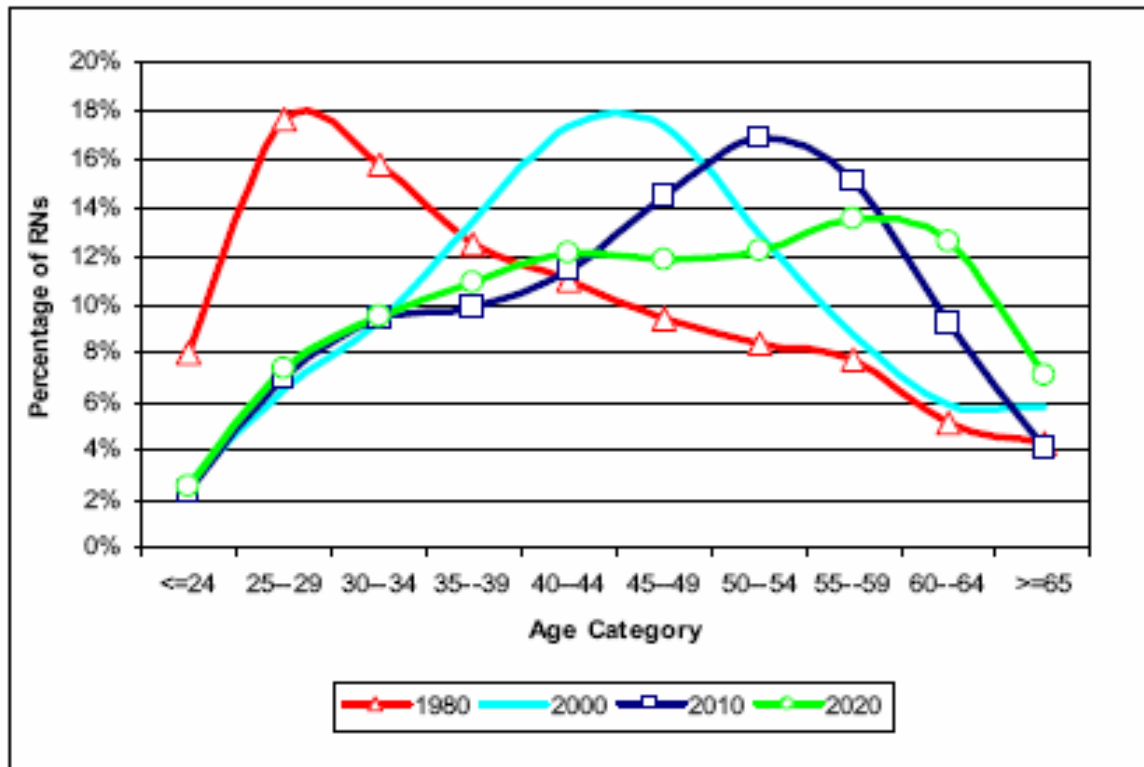
Source: Dartmouth Atlas of Healthcare 2008, *Tracking the Care of Individuals with Severe Chronic Illness*; page 27; accessed on line 11/08

Ratio of state to the U.S. average of total Medicare spending per chronically ill decedent during the last two years of life by State (deaths occurring 2001-05)



The RN Workforce is Aging

Exhibit 4. Age Distribution Trend of the RN Population



Sources: 1980 and 2000 SSRN; NSM projections for 2010 and 2020.

- The RN shortage is estimated to be over 1,000,000 by 2020 even assuming a 2% per year decline in hospitalizations.
- RNs are growing older and are not being replaced by new graduates.
- RNs typically leave the nursing profession in mid-50s for other fields or retirement.

Minnesota is expected to have RN shortages exceeding 20% by 2020 in many parts of the State. Source: *Nurse Workforce Demand Report 2000 – 2020*, HRSA, US Department of Health & Human Services,

Estimated Physician ShortagesParticularly in Primary Care

Current physician shortages are expected to grow. Current studies show the following:

- The number of Health Professional Shortage Areas has grown from 1,885 in 1997 to 3,814 in 2007.
- Currently 33% of active physicians are 55 years or older.
- International Medical Graduates currently make up 25% of physicians practicing in the US and 26% of the physician residency slots in 2005. IMG currently hold the following residency slots:
 - 42% of Internal Medicine
 - 37% of Family Practice
 - 24% of Pediatric
- Federal Policy is encouraging physician group practices of seven or more.
- The HSRA estimates the primary care physician shortage will reach 250,000 by 2020.

Sources: **What Works – Healing the Workforce Shortages*; PricewaterhouseCoopers Health Research Institute; 2007



Exploding interest in technologies to:

- **Increase diagnostic capabilities**
- **Expand consumer & professional education**
- **Increase quality & reliability**
- **Supplement scarce supply of health professionals and informal caregivers**
- **Reduce costs**
- **Increase independence/self reliance**
- **Enhance service value to residents/clients and their families**



This is today.....

*ST. PAUL, Minn., Nov 20, 2008 (BUSINESS WIRE) -- **Angeion Corporation today announced that its New Leaf division has partnered with iTMP Technology, Inc. to launch iNewLeaf(TM), a unique fitness application that transforms the Apple(R) iPhone and iPod(R) touch into a fitness monitoring system based on personal metabolic test results.***

Parkland Health & Hospital System Rolls Out Innovation's PharmASSIST Technology Platform Across Nine Pharmacy Sites
Dallas Institution Employs Technology Suite of Workflow, Counting Technology and Robotics to Fill 6000 Rxs Daily Source: PRNewsWire service, November 20, 2008 accessed via the web.

Officials at [General Electric](#) and its [GE Healthcare](#) unit said they will join forces with four health care institutions in a \$200 million project to develop a national electronic health record system and related technologies. As part of the five-year effort GE will work with partners University of California-San Francisco Medical Center, Intermountain Healthcare, an integrated health care system based in Salt Lake City; [Montefiore Medical Center](#), the university hospital for the [Albert Einstein College of Medicine](#) in the Bronx, New York; and the [Mayo Clinic](#) in Rochester, Minn. Source: Business Journal of Milwaukee, November 20, 2008



This is today

If Roy Schoenberg, co-founder and chief executive of American Well, has his way, patients will no longer have to wait a month to see a doctor, wait all day for a doctor to return their call, or leave work and drive a long distance for a routine appointment. Instead, patients will log on to their computers and find themselves face-to-face with physicians over Webcam. Source: NY Times, 11/20/08

Personal embedded tracking technology for those with disabilities or dementia is currently available but not widely used.

In-home sensor and queuing technology to assure medication compliance and to increase safety as individuals remain independent longer



And tomorrow.....what will we see?

Minnesota legislative mandate that all health providers have an operable electronic medical record by 2015.

Ten Western Minnesota counties are included in a demonstration project to build an electronic medical record by 2010.

New pharmacology solutions to major health issues such as obesity, alzheimer's disease, diabetes, etc.

Advances in non-invasive imaging technology to diagnose complex problems reducing surgery

Advances in surgery & operational robotics to improve quality and reduce staffing workloads

Increased personal responsibility for health care including new health insurance models, personal health records maintained by the patient, etc.



Technology Advances Do Not Guarantee Cost Reductions

- Technology advances to date have identified increased number of issues that require treatment
 - Preventative heart screening
 - Genetic testing
 - Home care monitoring
- Technology advances may prolong life at high costs with limited improvement in quality of life
 - Cancer treatments
 - Cardiovascular devices
 - Organ transplants



Healthcare Advances Will Pose Questions....

- **Are there limitations we are willing to discuss in health care?**
 - Colorado Governor Lamb – issues raised about limiting end of life care & care to patients with high risk behaviors, i.e., drinking & driving, HIV patients, etc.
 - Selection of patients to receive dialysis
 - European limitations on age for selected services
- **What are acceptable parameters for care?**
 - Long wait periods for non-life threatening procedures
 - Availability of experimental procedures and medicines under traditional health plans or Medicare/Medicaid

The advances in healthcare is creating new issues and questions that will need to be addressed. Limiting or reducing health care does not have to be the tradeoff for increased quality and access.



Thank You.....

*Thanks for including us in this educational series.
If you would like additional information, please feel
free to contact us at the following address:*

Nancy E. Rehkamp

nrehkamp@larsonallen.com

Allen Horn, MD

horna@centracare.com

