The Role of Telehealth in Health System Change

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• Established in 1980 at the University of North Dakota School of Medicine and Health Sciences, Grand Forks, ND
• One of the country’s most experienced state rural health offices – only 4 states with older offices
• UND Center of Excellence in Research, Scholarship, and Creative Activity
• Recipient of the UND Award for Departmental Excellence in Research
• Home to 7 national programs (Native American Health, Research, Information Dissemination)
• 65 staff and faculty
• Focus on the following:
  o Working with Communities
  o Educating and Informing
  o Native Americans
  o Health Workforce
  o Research and Evaluation
  o Policy
  o Technical Assistance to Hospitals, Public Health, EMS, LTC, Mental Health, Health Delivery Systems
Objectives
1. Quick overview of U.S. health system policy
2. Quick overview of North Dakota rural health issues
3. Telehealth in ND
   a. How does ND Telehealth look today? What is done?
   b. What are the issues/challenges?
   c. What has changed over the years?
   d. What is on the horizon?
   e. What is the relationship with health reform?
4. Conclusions

How to Understand the U.S. Health System

You can always count on Americans to do the right thing – after exhausting all the alternatives.

- Cost is a focus
- But then, so is access
- Cost and access dominate health policy
- Health reform is process to address both cost and access through outcomes and improved health status – payments linked to outcomes ("volume to value")
- Triple Aims – better care, better health and lower costs or smaller increases
  - Quality and improved care coordination and system response for better outcomes
  - Health system reform – ACO, PCMH – new delivery platforms and payment models
  - Significant influence on and through workforce, telehealth, networks, integration
Overview of Health Issues in North Dakota

Significant 2014 CAH Issues – CAH CEO Survey
(combined problem, moderate problem, and severe problem scores)

- 94% Impact of the uninsured
- 94% Impact of the underinsured
- 89% Access to mental/behavioral health services – substance abuse
- 86% Hospital reimbursement (3rd party payer)
- 86% Primary care physician workforce supply
- 85% Access to mental/behavioral health services – inpatient & outpatient
- 84% Hospital reimbursement (Medicaid)
- 80% Nursing workforce supply
- 79% Hospital reimbursement (Medicare)
- 75% Impact of health care reform
- 74% Ancillary workforce supply (lab, x-ray, PT, and others)
- SO...basically we see: insurance coverage, mental/behavioral health, reimbursement, and workforce
Severe Problems - 2014

- Looking at the data from some other angles:
  - Isolate by severe problem
    - 51% Access to mental/behavioral health – inpatient & outpatient (only item with majority saying severe problem)
    - 47% Access to mental/behavioral health – substance abuse
    - 44% Hospital reimbursement (3rd party payer)
    - 43% Primary care physician workforce supply
    - 39% Hospital reimbursement (Medicaid)
    - 38% Hospital reimbursement (Medicare)
    - 35% Impact of the uninsured
    - 26% Nursing workforce supply
  - Isolate by Mean score (average)
    - Only 2 with mean over 4 – 2 mental health challenges

Survey Results Over Time

<table>
<thead>
<tr>
<th>Issue</th>
<th>2014</th>
<th>2011</th>
<th>2008</th>
<th>2005</th>
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<tr>
<td>Impact on Uninsured</td>
<td>94%</td>
<td>91%</td>
<td>79%</td>
<td>96%</td>
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<tr>
<td>Impact of Underinsured</td>
<td>94%</td>
<td>91%</td>
<td>75%</td>
<td>95%</td>
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<tr>
<td>Access to Mental/Behavioral Health Services – substance Abuse*</td>
<td>89%</td>
<td>79%</td>
<td>79%</td>
<td>73%</td>
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<tr>
<td>Hospital Reimbursement – 3rd Party Payer</td>
<td>86%</td>
<td>94%</td>
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<tr>
<td>Primary Care Physician Workforce Supply*</td>
<td>86%</td>
<td>91%</td>
<td>82%</td>
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<td>85%</td>
<td>79%</td>
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<td>73%</td>
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<tr>
<td>Hospital Reimbursement (Medicaid)</td>
<td>84%</td>
<td>Not asked</td>
<td>Not asked</td>
<td>Not asked</td>
</tr>
<tr>
<td>Nursing Workforce Supply</td>
<td>80%</td>
<td>85%</td>
<td>89%</td>
<td>81%</td>
</tr>
<tr>
<td>Hospital Reimbursement (Medicare)</td>
<td>79%</td>
<td>88%</td>
<td>86%</td>
<td>84%</td>
</tr>
<tr>
<td>Impact of Health Reform (2011 asked as readiness)</td>
<td>75%</td>
<td>94%</td>
<td>Not asked</td>
<td>Not asked</td>
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<tr>
<td>Ancillary workforce supply (lab, x-ray, PT)</td>
<td>74%</td>
<td>73%</td>
<td>86%</td>
<td>88%</td>
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Community Health Needs Assessments (CHNA)
2011-2014 (community members, leaders, and providers input)

• 39 hospitals (rural and urban) found 21 primary community health needs
  o 28 health care workforce shortages
  o 16 obesity and physical inactivity
  o 15 mental health (including substance abuse)
  o 12 chronic disease management
  o 11 higher costs of health care for consumers
  o 10 financial viability of the hospital
  o 9 aging population services
  o 7 excessive drinking
  o 6 uninsured adults
  o 6 maintaining EMS
  o 6 emphasis on wellness, education, and prevention
  o 6 access to needed equipment/facility update

Telemedicine or Telehealth

What is telemedicine? Telemedicine is the remote delivery of healthcare services and information using telecommunications technology.

What is telehealth? Telehealth is often used to refer to a broader scope of remote healthcare services than the term telemedicine. Telehealth includes remote non-clinical services, such as provider training, administrative meetings, and continuing medical education, in addition to clinical services. Although telehealth is broader in scope, the American Telemedicine Association and many other organizations use the terms “telemedicine” and “telehealth” interchangeably.

Telehealth technologies can include:
Videoconferencing,
Store-and-forward data, images or videos,
Remote patient monitoring, and
mHealth (mobile health) applications

Source: RAC https://www.raconline.org/
North Dakota Telemedicine and Telehealth Today

Tele-Psychiatry Residency Training
UND School of Medicine and Health Sciences

- Fall 2015 starts
- Add 1 residency slot a year (current is 4/yr = 16 so 5/yr=20) – most of training will be via technology external to campus – SE Human Services
- Emphasis on rural with two rural rotations in rural settings – over 2X the regular level of rural education/technology
- Provide services to rural patients
- Link the resident to rural primary care physician, consultation and referral
- 1st year residency all inpatient (no tele-psych that year)
- Some 2nd year, 3rd year – 1/3 of training will be telemed, 4th year – 1/2 of training telemed
- New faculty position to work with tele-psych (1/2 SE and 1/2 UNDSMHS)
- All residents get some telemedicine exposure but new position increased
ND Department of Human Services – Tele-mental Health

- All 8 regional service centers utilize tele-mental health
- Tele-psychiatry – children, adolescents, and adults
- Addiction assessments and Addiction therapy
- Tele-pharmacy
- Center to center – patient in Dickinson center treated by provider in Fargo
- Center to other setting – patient in hospital, clinic, LTC, county social services
- State hospital providers are also available
- Quality of care has been rated by patients to be on par with F-to-F
- Video quality is quite good
- Average 30 hours a week
- Use EHR so mental health provider can have access no matter patient location

Altru Health System (Grand Forks, ND)

- Work with about 40 hospitals, clinics and LTC facilities providing telemed
- 65 Altru providers, most specialists are involved
- Started in 2007 with nephrology due to the interest (champion) of a provider
- 2008 OAT grant – wound care, follow-up care, physician champion (again)
- 2015 offer the following
  - Psychiatry/mental health (including UND Psych. Rounds)
  - Infectious Disease
  - Dermatology
  - Nephrology
  - Urology
  - Oncology (nurse case management)
  - Diabetes education to physicians and nurses outside of Altru
  - E-Pharmacy
  - Radiology
  - Weight Management
  - Dietician Counseling
Altru Health System (Grand Forks, ND)

- Number 1 service provided is psychiatry (child psychiatrist is strong user), before had been wound care
- Provide specialty psychiatric care to nursing homes (e.g., medication review)
- Infectious disease - 2nd most used telemedicine service for Altru

CHI St. Alexius Health Center (Bismarck, ND)

- Services to 43 sites in ND – hospitals, clinics, LTC, and other agencies
- Initiated services in the 1970’s with remote cardiac monitoring of heart rhythms via phone lines – added teleradiology, EKG and EEG interpretation in 1980’s
- 1994 Telemedicine Task Force established to study feasibility of expansion to include real time tele-consultation
- 1995 started TeleCare Network with Garrison Memorial Hospital and Turtle Lake Community Memorial Hospital – then expanded to 25 rural
- TeleCare – cooperative telemedicine venture with Northland Healthcare Alliance, PrimeCare Health Group, and affiliated physicians
- TeleCare original focus was tele-medicine for clinical services but expanded to telehealth to include CME, CE, and administration
CHI- St. Alexius Health Center (Bismarck, ND)

- **Services**
  - Cardiac Surgery follow-up
  - Diabetes
  - Employee Assistance Counseling
  - Hospice Counseling
  - Mental Health
  - Nephrology
  - Neurology
  - Plastic Surgery
  - Podiatry
  - Speech Therapy
  - Pulmonology
  - Physician and Nurse CE
  - Alzheimer’s Support Group

Essentia Health System (Fargo, ND; Duluth, MN)

- Initiated telehealth/telemedicine about 2011
- 4 ND communities outside of Fargo (26 other states) – MN, ID, WI
- **Services**
  - Oncology outreach – added 2015
  - Cardiology outreach – 2015
  - Adult and child psychiatry/psychology/mental health providers
  - Dietician
  - Follow-up post procedure care
  - Medical Weight loss
  - Medication therapy

- **Some ND patients seen via telemedicine with Essentia subspecialists in Duluth or in other MN locations**
  - Children’s mental health from International Falls, MN
  - Weight loss – Ely, MN
Sanford Health (Fargo and Bismarck, ND)

- Telemedicine/telehealth to 16 hospitals and/or clinics in ND (33 in ND, MT, and MN)

- Hospital services
  - 1-Connect Emergency (e-emergency)
    - 8 ND CAHs (29 region wide)
    - ED physicians in Fargo, Bismarck, or Sioux Falls
    - Care consultation
  - Neonatal
  - Inpatient consultation (e.g., infectious disease)
  - Remote monitoring of ICU with 2-way audio/video
  - E-Pharmacy – after hours and the weekend
  - Radiology – inpatient and outpatient, remote services
  - Physician rounds – specialty care and primary care

Sanford Health (Fargo and Bismarck, ND)

- Clinic services
  - 35 specialty groups available for consultation
  - 70 clinics region-wide – 16 ND
  - 2 mobile clinics in the Bakken region (Tioga and Watford City) – nurse model but tele-connection with physicians

- Home-based
  - Video visits between patient in home setting and physician
    - Can use EMR to request a visit – intake form, schedule time
    - Need computer and web cam
    - Not reimbursed by Medicare – out of pocket by the patient
  - Home health monitoring – varies by the rules of the state you are serving
    - CHF is significant need
    - Provide home scale, blood pressure cup, etc. and data is conveyed to Fargo for review and analysis
    - 100 or so monitors are in homes in the region – CHF and Diabetes
    - Significant growth area for need
    - Growth in hand held devices and transfer to EMR
Sanford Health (Fargo and Bismarck, ND)

- **Community**
  - Education on a variety of subjects – eating, weight loss
  - Support groups – cancer survival, weight loss
  - Can connect from main site to one group, or connect groups in multiple locations

Avera Health System (Sioux Falls, SD)

- **E-care Program**
  - 20 years of experience with virtual care – SD, ND, MN, IA
  - Offer six service lines: e-emergency, e-pharmacy, e-ICU, e-consult, and e-LTC
  - 24/7 staffing
  - Focus on increasing rural access, improving quality and patient outcomes, reduced service delivery costs, support of local team

- **E-emergency**
  - 29 of ND’s 36 CAHs participate
  - 2-way audio and video connection with Avera Sioux Falls
  - Access to board certified emergency physicians and ED nurses
  - Allows for accessing specialized services immediately, initiate diagnostic testing sooner, streamline emergency transfers faster
  - Informal assessment: rural physician and nursing reassurance, confidence
  - Can serve to help recruit and retain rural physicians – due to support structure
Avera Health System (Sioux Falls, SD)

• **E-pharmacy**
  - 4 ND CAHs (56 hospitals in all the states)
  - Also SD, MN, IA, NE, WY
  - Hospitals need to have a pharmacist but harder and harder to either have their own or contract with local pharmacist
  - E-pharmacy allows electronic supervision for review and approval
  - Better accuracy, improved safety, comprehensive

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**What are the Issues or Problems in Telehealth/Telemedicine**
Issues, Problems, Challenges
Respondents Stated:

• Reimbursement
  o Medicare improved but still issues – rural patient in an MSA provider not reimbursed by Medicare (unless area is a HPSA then $ for $)
  o Medicare does not reimburse for PT, OT, medication counseling, audiology, genetic counseling, rehab therapy, direct to consumer (provider time), or home monitoring
  o Medicare – too many restrictions
  o Private 3rd Party improved but depends on payer
  o Medicare reimbursement nurses are not included – diabetes nurse education done by a nurse, not reimbursed, but done by a dietician it is (ND most who do it are nurses)

• Networks
  o ND is hospital or system specific for the telehealth/telemedicine network, controlled by a single provider while some states have a statewide network that the hospitals can all use – required dedicated lines, state dollars
  o Relationships between hospitals can be negotiated but need to want to work together and allow access via their telemedicine system – situational rather than systemic with a dependable, reliable process (Example of two ND tertiaries and rural patients)

• Credentialing
  o Good that physicians from one state need to be licensed in another; however, ND does not have a “fast-tract” or telemedicine registration system that could facilitate the process – Licensure Compact – Federation of State Medical Boards created the Interstate Medical Licensure Compact, but up to each board.
  o State specific – up to that state board and variation in attitude – time consuming

• Provider Involvement
  o Significant improvement over the years – champions – but still some reluctance – new generation of providers more accepting and appreciative of technology
  o Huge shift over the years in attitudes about telemedicine

• Tele-mental health
  o More prevalent but still shortage of providers to use it and sites
  o Need more awareness of potential
  o Need more mental health providers educated with it and use it with patients during their training
Issues, Problems, Challenges
Respondents Stated:

- Equipment costs
  - Overall costs are better, but still need grant dollars

- Board of Medical Examiners
  - Disagreement regarding EHR and direct contact between the physician and patient

- Workforce
  - Telemedicine and telehealth help with workforce needs (especially in rural and with time constraints); however, still need providers to want to use it – likely new arrangements like ACO will compel this
  - Each generation of providers has more familiarity with it in education which helps as they go into practice but still need more providers
  - Need urban specialists to be there and available; need rural (physician, PA, NP, and nurses) to be there and willing to use it
  - Regardless need more providers

What has Changed in Telemedicine/Telehealth
What has Changed in Telemedicine/Telehealth Over the Years?

Respondents Stated:

- **Old telemedicine system** was based on hard wire, big equipment/high cost, BTWAN, and everything was scheduled – **New telemedicine** is smaller, faster, less costly, timely, and sometimes can be held in the hand
  - Example – scheduling is built into Epic
  - Interactions can happen naturally, more real time not as reliant on a set schedule
  - More laptop to laptop, more direct to consumer, EMR, iPad, iPhone (data and comm.
  - Old system was time and place specific; now anywhere and whenever
  - Walgreens ,2015, offering virtual visits with doctors in their pharmacy – less than $50
- **Cost** of technology has declined greatly
- **Reimbursement is better** – more comprehensive in terms of services and providers, easier to gain access
- More **physicians are champions** – both in numbers and specialties – need physician champions
- **Public policy is more in tune** and supportive – reimbursement at federal and state levels (Medicare, Medicaid, and state policy on private insurers)
- Telemedicine and telehealth has been traditionally seen as **expanding access**, now seen as element for **cost control** - Triple Aim link to the **Affordable Care Act**

What has Changed in Telemedicine/Telehealth Over the Years? (10-20 years of so)

Respondents Stated:

- **Consumer is more comfortable** with telemedicine now
  - Internet savvy for personal purchases; accessing movies, music, TV; communication with Facebook, etc. – comfortable
  - Phone, internet, e-mails, Facebook all accessible in a hand held device
  - See the convenience of technology – improves life
  - Expect health and medical services, care, and education to be delivered the same way
- **Significant increase in broadband**
- **Increase usage for mental health** – long way to go though
- **Time is right** for big strides – policy and market confluence
What is on the Horizon for Telehealth and Telemedicine

Respondents Stated

- **Continued development of virtual care** and increased role in health care
  - New technology being developed
  - New access points – “Uber consultation” – I-Watch, I-Phone, whoever is available
- **Will help with follow-up care** which is where system is going
  - ACO has more accountability for how physician manages patient care, providers need more contact/communication to improve care and increase their payments – vendors increasing practice management systems
- **More support from public sector** as it is essential for health reform – more things reimbursed, parity, ACOs required to use so reimbursement will follow, more states pushing for private payers to reimburse
- **Direct to consumer care** – more in the home services beyond personal computer
  - Hand held (I-Phone, I-Pad, I-Watch, wireless, Telehealth Apps)
  - Home otoscopes, dermatoscopes, stethoscopes, home lab kits (to facilitate diagnosis), BP cups, pulse oximeters, glucometers, scales, motion detectors, etc.
  - Team, patient, patient health coach, and provider working electronically
Telehealth – What is on the Horizon
Respondents Stated

- Continued increase in **consumer demand** – “patients want more telehealth” and even more so with Millennials who expect it
- **Competition works** – telemedicine costs per encounter decline (CT scans)
- **EHR/EMR** – more and better technology with more video features – not just test results and messaging but video connection and video display of conditions and patient data
- **Increase use in LTC** – reduce ED visits (40% avoidable) also relates to health reform push to reduce readmissions – many discharged to LTC
- More interaction with **physicians outside of system** – rural Family Medicine in ND with a specialist in CA and not affiliated with a ND tertiary – ACO development will create new networks where state border does not matter – this example if CA physician is part of the ACO maybe more contact but if not part of it then maybe not? (Uber Consultations)

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Telehealth – What is on the Horizon – Respondents Stated

- **Increased use in health and medical education**
  - remote education (e.g. new UNDSMHS tele-psychiatry residency as example)
  - Increased frequency and improved quality of the interaction for student in rural site with a patient, and with a teacher at UND or other education site
  - IPad and IPhone
  - EHR/EMR and health science and/or medical student, medical resident access

- **Increased use in worksite wellness** – telehealth kiosk
  - Most applicable in a large work site or remote site
  - Prevention, wellness, CD management, health education, but also telemedicine with ability read patient data or transmit images to physician provider many miles away

- **Continued growth in specialty providers** seeing the potential and feasibility of telemedicine (e.g., tele-stroke services)

- **Workforce considerations**
  - National shortage of providers and use telehealth to compensate for shortage – specialist in city work with PC physician, PA, NP - Rural can rely more on PA and NP
  - E-care provides specialty support to physicians and others with e-emergency
  - Example of Georgia Rural School Based Telehealth clinics
Health Reform and Telehealth/Telemedicine

Respondents Stated:

• Builds a platform for improving quality – easier to interact with patients, gain patient data, assess, and respond

• Strengthens patient relationship with providers
  - Patient in Ashley, ND and 80 miles from Bismarck – follow-up care for 2 or 3 post visits through telemedicine save patient money, time, inconvenience to the family and system saves money

• Strengthens rural facilities – can keep follow-up care in the rural with FP physician, NP, or PA.

• Insurance – Telehealth is reimbursable for the patient and provider, rural gains a site facility fee

• ACA has high focus on prevention and wellness – CDM – and telehealth has been used for this so ACA will usher in greater usage of telehealth (telehealth is made for health reform)
Telehealth and Health Reform
Respondents Stated:

- Health reform fosters **higher level of provider and system integration** – new delivery and reimbursement models in ACO, CIN, bundling payments
  - E-health strategies used for better care coordination, quality improvement, patient data management, more efficient communication
  - Patient data is no longer in a single silo – easily shared between providers and patients and system integration is focused on lowering costs and improving outcomes – value not volume
  - Telehealth helps with system integration – shared budgets, shared personnel, shared services

- **Increase use of home monitoring** (blood pressure, heart rate, caloric level, respiration rate, weight, temperature, glucose, pace maker checks) – medical and mental health monitoring

- **Volume to value** is also movement away from strictly “mortar and brick” health system – telehealth or e-care is part of this movement

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Telehealth and Health Reform
Respondents Stated:

- Telehealth and health reform focus on **better resource management** (cost control with improved quality and outcomes) – outreach services are costly with providers going 60 and 120 miles to rural site; more telehealth can reduce those costs combined with more system networking

- **Cost of chronic disease management** is high and growing and telehealth is way to control cost

- **Value and quality improvement** – as specialty groups are added to telehealth systems will see increased quality and have over the years as more have adapted. Quality of face-to-face and telehealth are seen the same by patient satisfaction surveys

- Telehealth reduces unnecessary hospital re-admissions and lower ER visits –focus of health reform

- **Significant increase in elderly patients** over next 20 years and use prevention, wellness, care coordination, and telehealth to meet growing needs more efficiently
Telehealth and Health Reform

Respondents Stated:

- **Enhanced integration via a ACO model** could improve quality and outcomes, lower costs, and meet incentives needs for the provider:
  - Renal dialysis best practice recommendation is 4 reimbursable visits per month – urban area this is generally easy (access is there) but for a rural patient they may only do 2 visits due to the travel, not enough – with ACO model the incentive is there for the physician as the payment is associated with improved outcomes not just the number of visits, so likely better outcome for the patient with 4 visits, and this compensates the provider. The Telehealth system is available for the consult, (lower cost) so ultimately likely to see better outcome, lower cost, with the physician being adequately reimbursed (based on outcome not number of face to face visits)
  - Foot or leg ulcer can lead to amputation – leg salvage is the goal - podiatry consults through telehealth can increase within an ACO which can lessen chance of leg amputation – better outcome with use of telemedicine and at a lower cost (note: this meets the Triple Aims of better health, better care, and better cost)
  - Actual case of amputation for patient in community about 270 miles from tertiary – diabetes complication and wound would not heal – many trips and if had telehealth at that time could have saved many trips – money for patient, time, discomfort traveling 540 miles

Conclusion

- High presence of Telehealth and telemedicine in ND – and a long history
- Evolution in technology, application, and process
- Reimbursement has improved but there are significant issues remaining
- Policy is more in line with technology change but still lags behind – states vary in rules and regulations (sometimes expectations from policy makers are unrealistic)
- Technology continues to expand and improve; cost has come down
- Physician demand has increased – number and types of specialists – role of the “physician champion”
- Consumer demand and expectation has increased significantly
- Many ways technology is smaller, faster, more reliable, and cheaper than even 5 years ago
- Significant opportunity for telehealth in health reform implementation – new payment and system models will incorporate more technology to address the Triple Aims
- Broadband access is better
Contact us for more information!

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