Minnesota's e-Health Profile
Where are Rural Providers?
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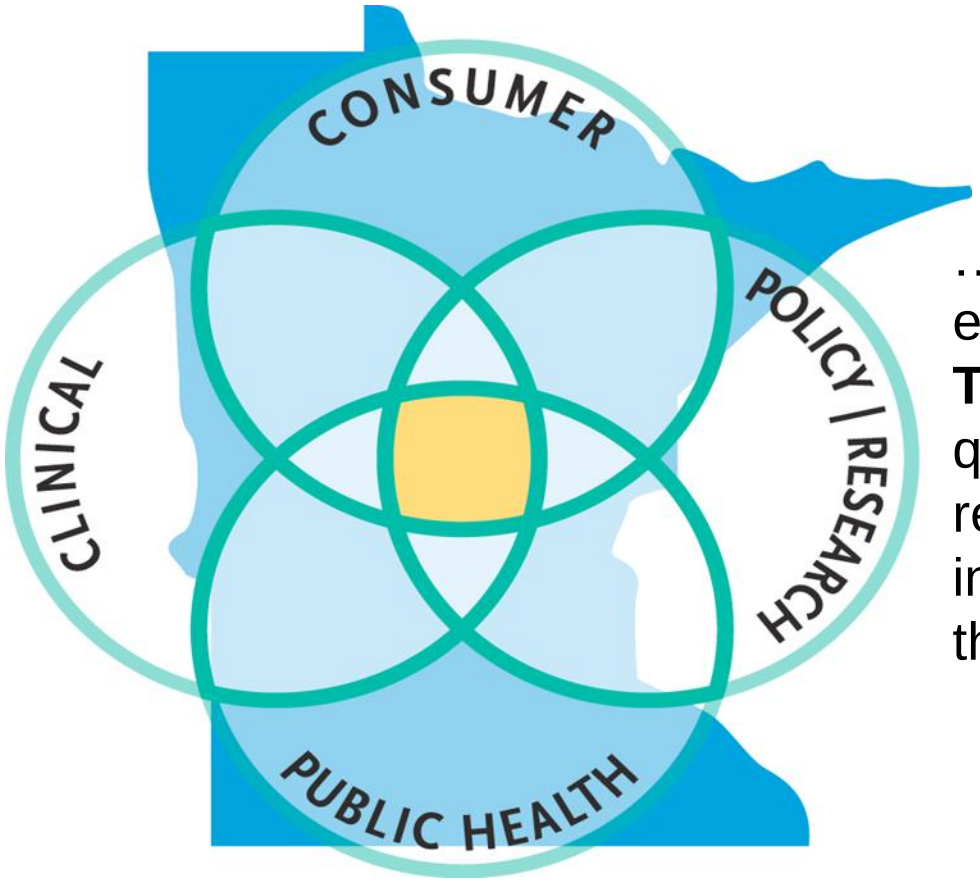
Topics for Discussion

- MN e-Health Profile
- e-Health Status: Focus on Rural Providers
- Bringing It All Together
- Questions

MN e-Health Profile Highlights

- Adoption rates are high & will continue to rise
- Utilization rates are low to moderate & gaps occur between urban and rural settings
- E-prescribing by pharmacies has rapidly increased but rural clinics are e-prescribing at lower rates
- Exchange rates are low with most exchange occurring between affiliated clinics & hospitals

MN e-Health Initiative



Vision….

…accelerate the adoption and effective use of **Health Information Technology** to improve healthcare quality, increase patient safety, reduce healthcare costs, and enable individuals and communities to make the best possible health decisions.

e-Health

e-health is the adoption and effective use of electronic health record (EHR) systems and other health information technology (HIT) to improve:

- Improve health care quality
- Increase patient safety
- Reduce health care costs
- Enable individuals and communities to make the best possible health decisions

Key Drivers for Investing in e-Health

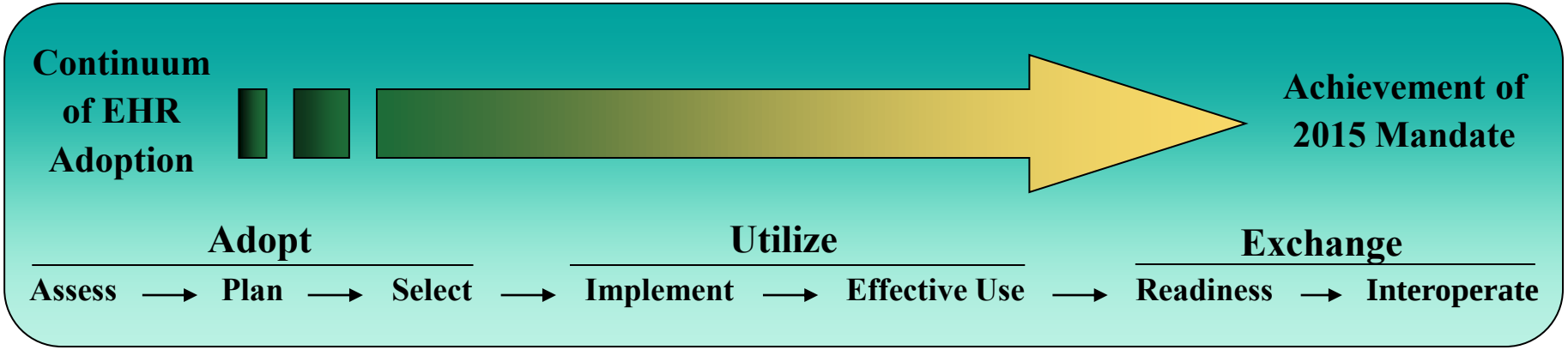
- Support clinical practice
- Increasing evidence relating to improvement in quality, safety and health outcomes
- Consumer needs and interest
- Demand for Information to follow the patient, i.e. around transitions of care
- Policy: Minnesota laws:
  - 2011 electronic -prescribing mandate
  - 2015 interoperable electronic health records (EHR) mandate
- Federal financial incentives and disincentives programs
  - Meaningful Use

MN e-Health Profile

The MN e-Health Profile is a method to uniformly collect and routinely share the results of MN's e-health assessment activities statewide. The assessment information is used to:

- **MEASURE** Minnesota's status on achieving state and national goals to accelerate adoption and use of electronic health records and other HIT and to achieve interoperability of health information
- **IDENTIFY** gaps and barriers to enable effective strategies and efficient use of resources
- Help **DEVELOP** programs and **INFORM** decisions at the local, state and federal levels of government
- **SUPPORT** community collaboration efforts

MN e-Health Profile Approach



- Used the MN Model for Adopting Interoperable EHRs
- Examined status, barriers & needs, and future plans across the continuum of care and multiple settings
- Coordinated collaborative effort with associations and other stakeholders
- Leveraged the expertise and knowledge of the Minnesota e-Health Advisory Committee, workgroups, and community

MN e-Health Profile Approach: Minnesota's Domains

- Ambulatory Surgical Centers
- Assisted Living
- Chiropractic Clinics
- Clinics and Physician Offices
- Complementary Medicine/Care
- Convenience Clinics
- Correctional Facilities
- Dental/Oral
- Emergency Departments
- Emergency Medical Services
- Habilitation (OT, PT, RT)
- Home Health Agencies
- Hospice
- Hospitals
- Jail Health
- Laboratories
- Local Health Departments
- Mental/Behavioral Health
- Pharmacies
- Radiology
- Skilled Nursing Facilities
- State Agencies
- Tribal Health Agencies
- Urgent Care Centers

MN e-Health Profile Use & Dissemination

- Online reports, factsheets, & brief
  - MN e-Health Reports
    - Comprehensive report for specific domains
  - MN e-Health Factsheets
    - Factsheet for specific domain
  - MN e-Health Briefs
    - Selected e-health indicators from multiple domains plus other topic areas
- Presentations & discussions
- Papers & articles

www.health.state.mn.us/e-health/assessment.html

Defining Rural: Rural-Urban Commuting Areas (RUCA)

Census tract-based classification scheme based on standard Census Bureau area definitions and commuting information

- Urban: Duluth, Rochester, Mankato, St. Cloud,
- Large Rural: Albert Lea, Alexandria, Bemidji, Willmar
- Small Rural: Two Harbors, Wadena, St. James, Park Rapids
- Isolated: Adrian, Tyler, Walker, Renville, Minneota

Adoption

Chiropractic Offices

Nursing Homes

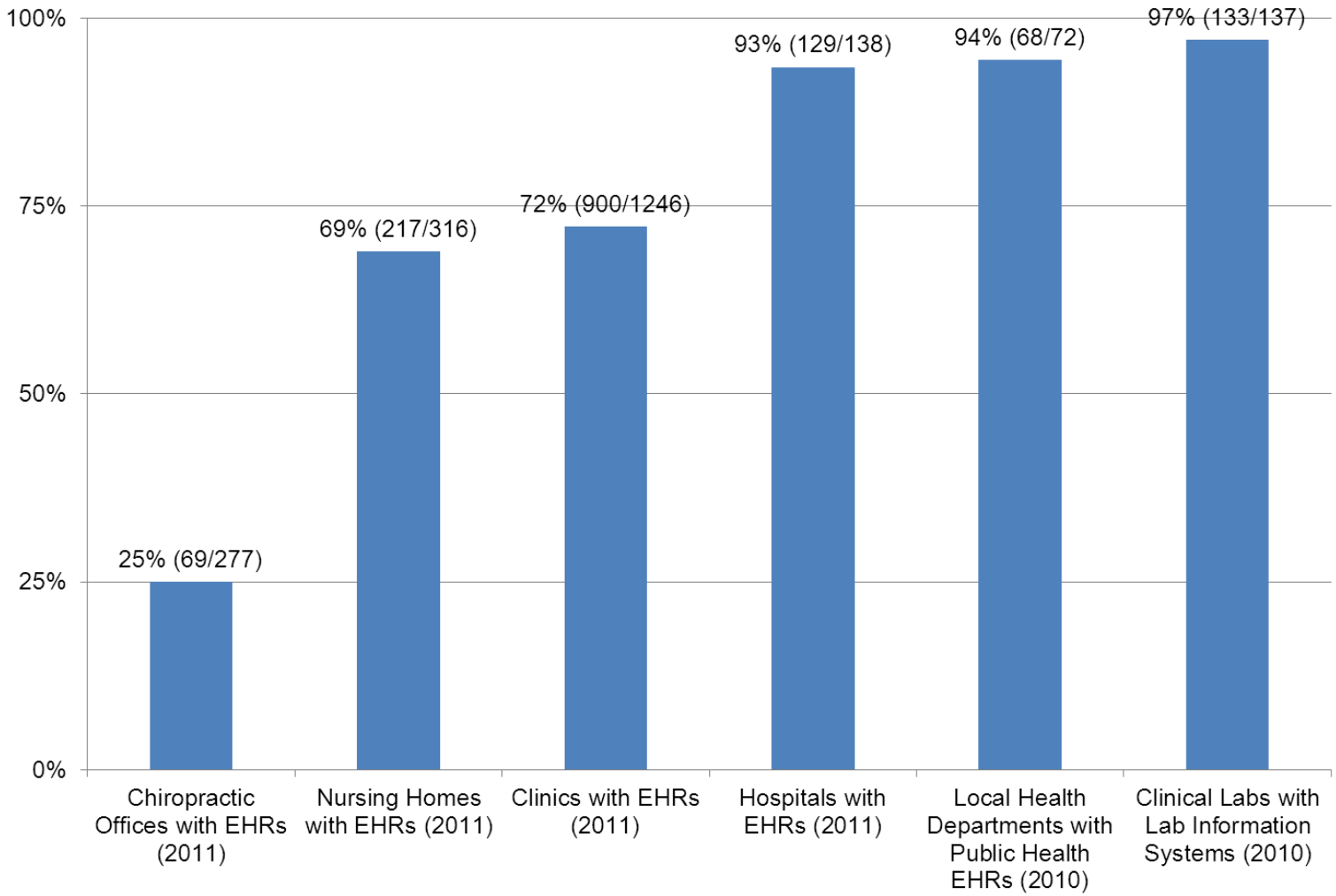
Clinics

Hospitals

Clinical Laboratories

Local Health Departments

MN Adoption of EHRs and Related HIT in Selected Settings



Source: Minnesota Department of Health, Office of Health Information Technology, www.health.state.mn.us/e-health/assessment.html

Adoption: Notable Findings Chiropractic Offices & Nursing Homes

- 9% (3/35) of chiropractic offices in isolated areas had EHRs compared to 25% (38/154) in urban areas
- The EHR adoption rate was lower for nursing homes in small rural and isolated communities

	Urban	Large Rural	Small Rural	Isolated Percent
EHR installed and in use (N = 217)	74% (108)	73% (37)	62% (24)	59% (48)

Adoption: Notable Findings Clinics & Hospitals

- 15% (51/338) of all rural clinics and 21% (190/908) of all urban clinics do not have an EHR
  - 74% of all clinics plan to adopt in the next 5 years
  - Common barriers to adoption: costs and staff to design and customize an EHR, trainers, computer / IT personnel, and staff to prepare the EHR for use
- 5 of 9 hospitals without an EHR were critical access hospitals (CAHs)
  - 3 CAHs plan to deploy in the next 18 months
  - Common barriers to implementation: upfront capital costs and staff to manage and process data, information, and knowledge

Adoption: Notable Findings Laboratories & Local Health Departments

Laboratories (N = 133)

- 94% (125/133) of all the LIS are commercial
- 53% (71/133) since 2003 or earlier

Local Health Departments

- No certified public health EHRs
- 95% (68/72)have an electronic client health records
  - 94% have either CHAMP (33), PH-Doc (24), or CareFacts (7)
- Local health departments use different systems and different combinations of systems to meet their needs

Source: Minnesota Department of Health, Office of Health Information Technology,
MN Clinical Laboratory Survey of Readiness and Needs for Electronic Health Information Exchange (2011)
Response Rate: 93% (151 of 163)

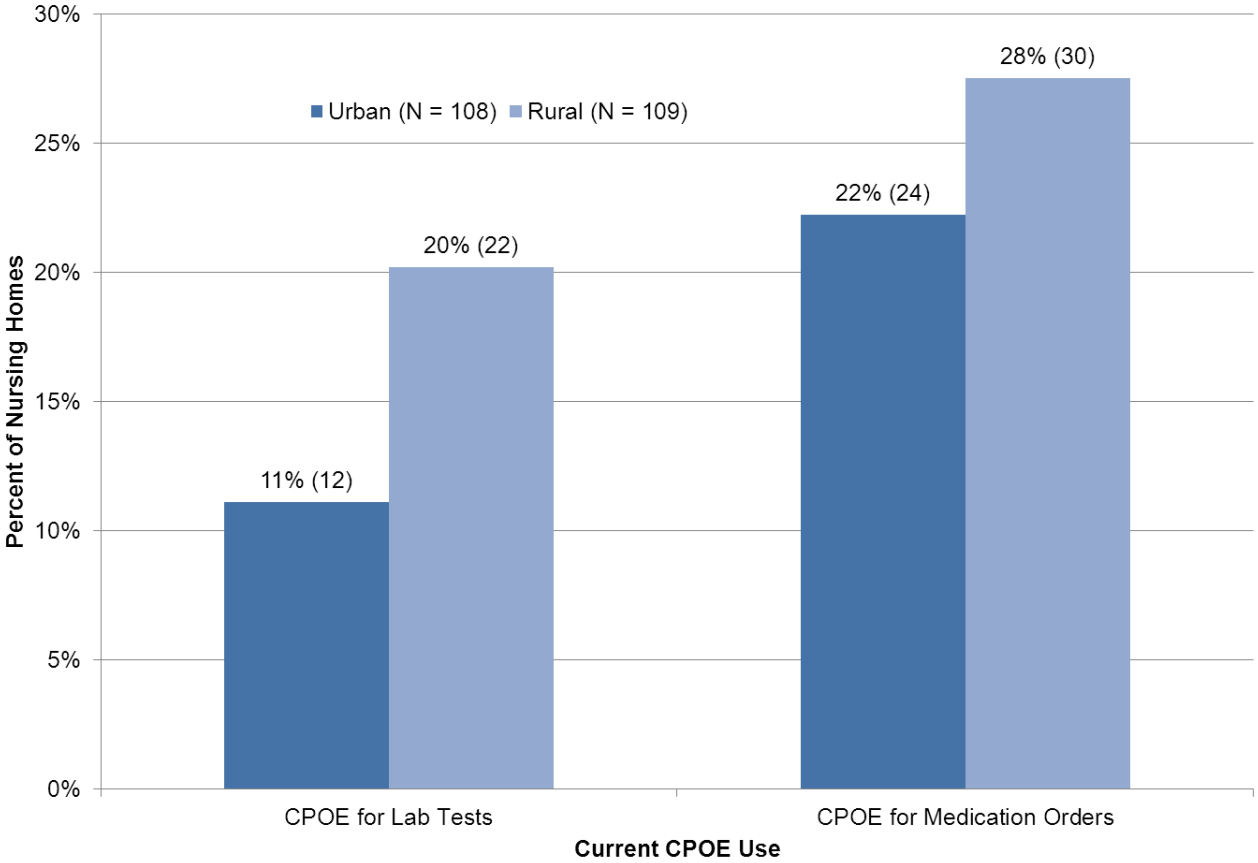
Use: CPOE

Nursing Homes

Clinics

Hospitals

MN Nursing Homes with EHRs Use of Computerized Provider Order Entry (CPOE) for Lab Tests and Medication Orders by RUCA (N = 129)



Source: Minnesota Department of Health, Office of Health Information Technology, MN EHR Nursing Home Survey (2011)
Response Rate: 83% (316/382)

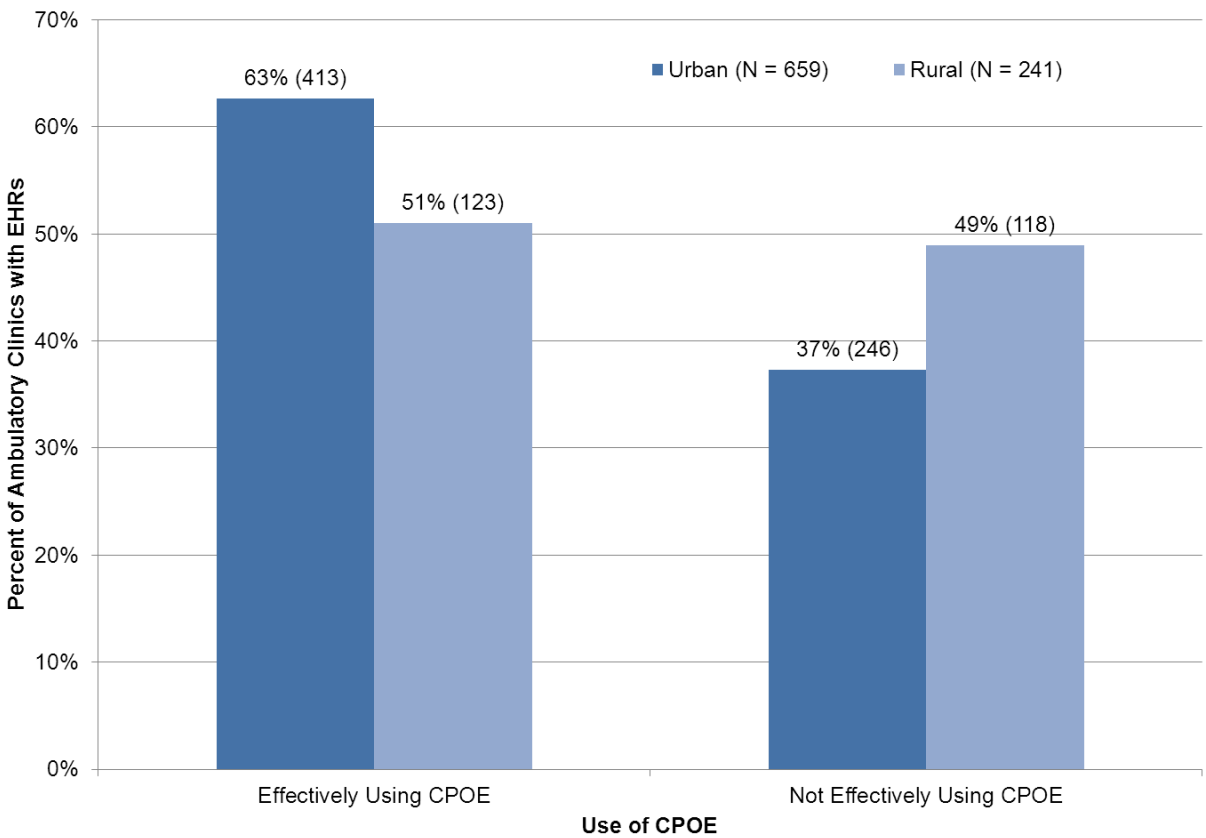
MN E-Health Report: Nursing Homes

Use

Twenty percent of rural nursing homes with EHRs were using CPOE for lab tests compared to 11% of urban nursing homes.

A higher percentage of rural nursing homes reported use of CPOE for medication orders than urban nursing homes.

Effective Use* of Computerized Provider Order Entry (CPOE) in MN Ambulatory Clinics with EHRs by RUCA (N = 900)



Source: Minnesota Department of Health, Office of Health Information Technology, MN HIT Ambulatory Clinic Survey (2011)
Response Rate: 92% (1246/1348)

MN E-Health Report: Ambulatory Clinics

Use

Sixty-three percent of urban clinics were effectively using CPOE compared to 51% of rural clinics.

*Effective use is defined as more than 80% of all provider orders completed using CPOE.

CPOE Use: Notable Findings
Clinics & Hospitals

Clinics

- 28% (67/241) of all rural clinics & 20% (134/659) of all urban clinics are under users of CPOE
- 21% (51/241) of all rural clinics & 17% (112/659) of all urban clinics are not using CPOE

Hospitals

- 80% (56/70) of critical access hospitals are not effectively using CPOE (46% under use and 34% no use) compared to 60% of all hospitals
- Two-thirds of hospitals not using CPOE plan to implement in the next year

Source: Minnesota Department of Health, Office of Health Information Technology, MN HIT Ambulatory Clinic Survey (2011)
Response Rate: 94% (1246/1348)

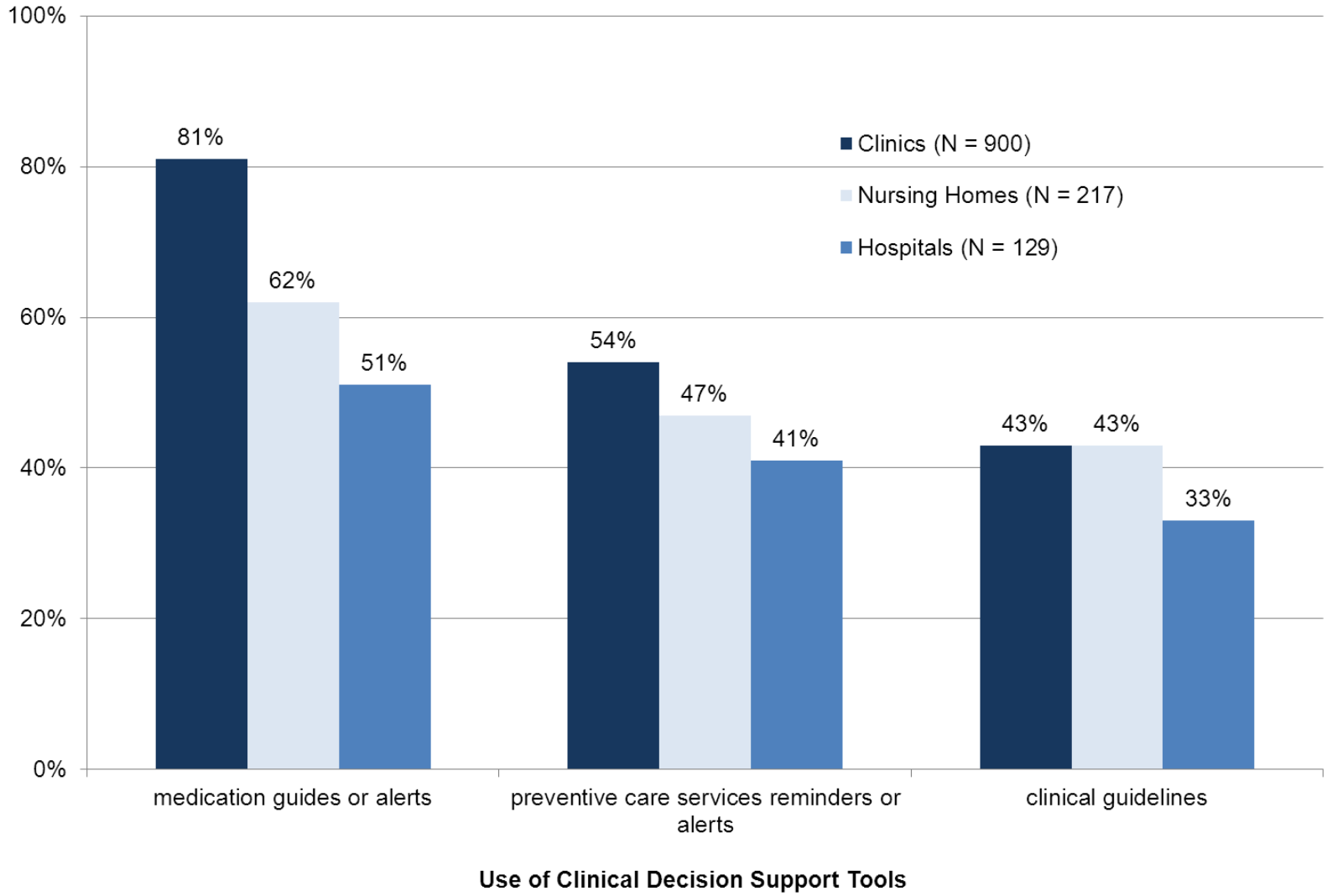
Use: Clinical Decision Support

Nursing Homes

Clinics

Hospitals

Use of Clinical Decision Support Tools by Minnesota Providers (2011)



Source: Minnesota Department of Health, Office of Health Information Technology, www.health.state.mn.us/e-health/assessment.html

Clinical Decision Support Use: Notable Findings
Nursing Homes, Clinics, & Hospitals

- Urban nursing homes were slightly more likely to use CDS tools
- 34% (81/241) of rural clinics and 56% (291/659) of urban clinics were routinely using more than three CDS tools
- 16% (11/70) of CAHs were not using any CDS tools
- Increase in use of medication guides, preventive care services reminders, and clinical guides for clinics and hospitals from 2010
- Common challenges were staff training, resources to build/implement, and staff resistance

Use: E-Prescribing

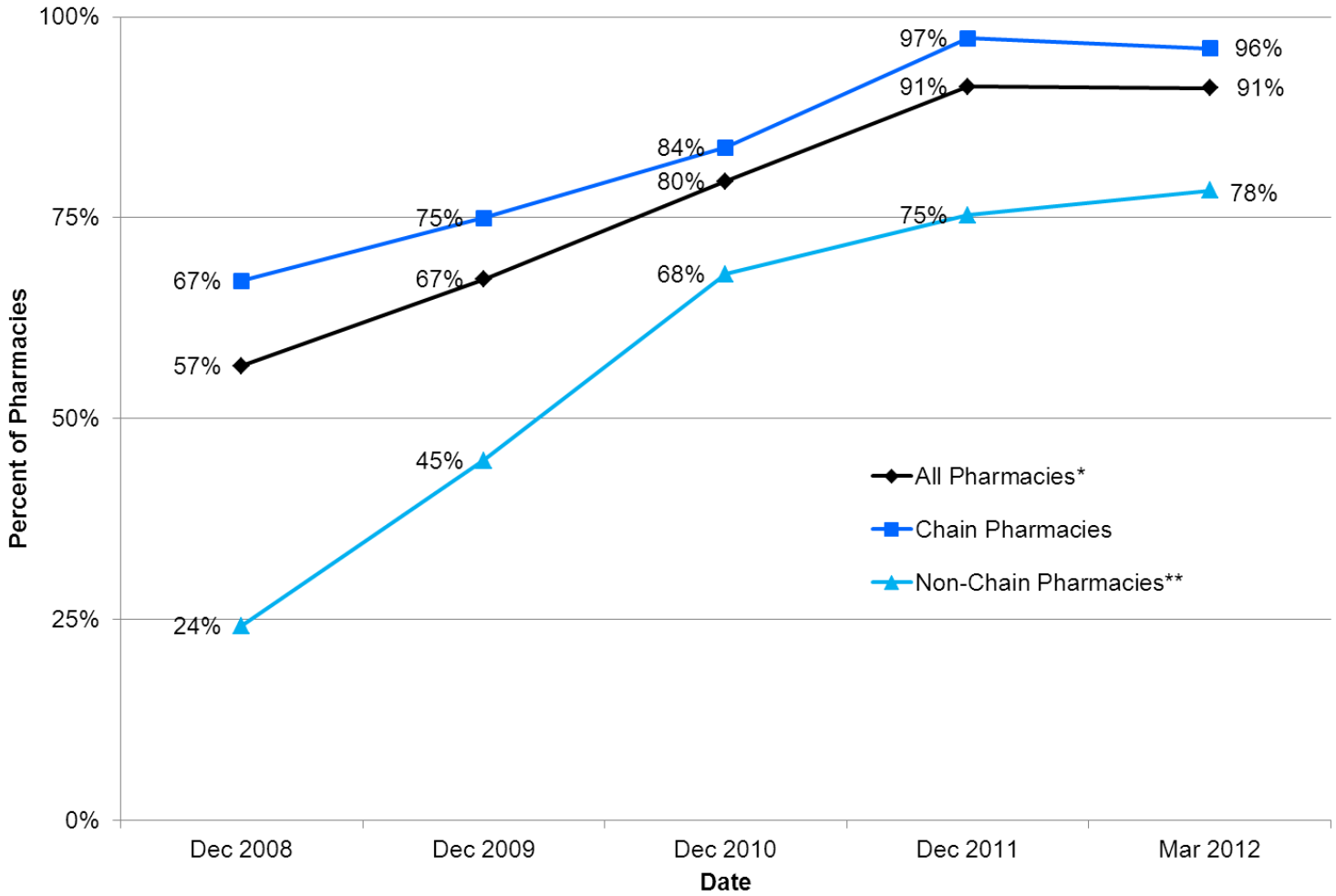
Pharmacy

Nursing Homes

Clinics

Hospitals

Minnesota Pharmacies* e-Prescribing (2008-2012)



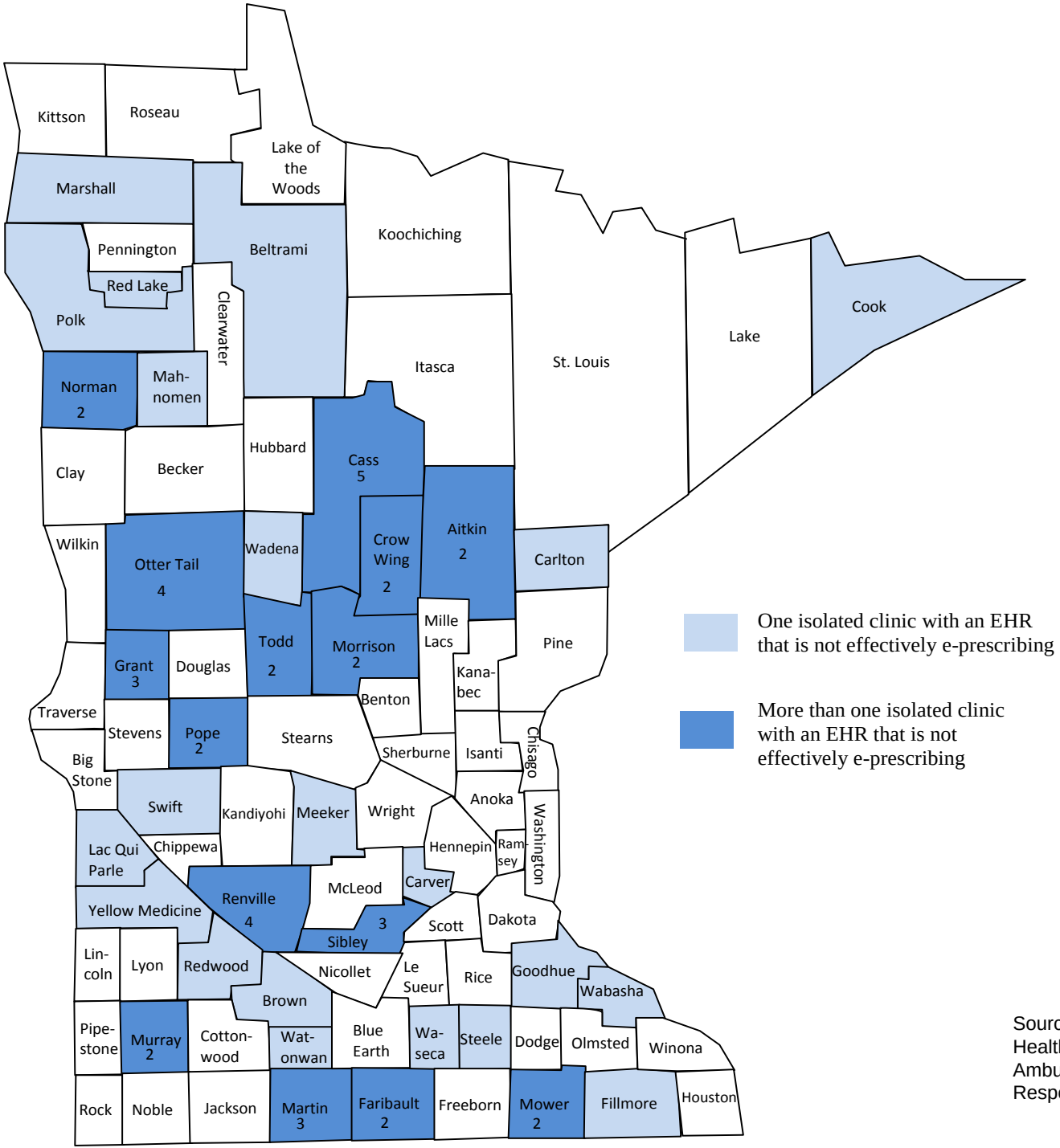
*Excludes pharmacies with the pharmacy class of medical device manufacturer
**Includes pharmacies with the pharmacy class of independent, franchise, and governemnt/federal
Source: Office of the National Coordinator, Surescripts

E-Prescribing by Clinics with EHRs by Rural-Urban Commuting Areas (RUCA) (N = 900)

Rural-Urban Commuting Areas	E-prescribing for 80% or more of prescriptions	E-prescribing for less than 80% of prescriptions	No e-prescribing
Urban (N = 659)	59% (391/659)	12% (78/659)	29% (190/659)
Large Rural (N=89)	48% (43/89)	12% (11/89)	39% (35/89)
Small Rural (N = 65)	51% (33/65)	17% (11/65)	32% (21/65)
Isolated (N = 87)	30% (26/87)	25% (22/87)	45% (39/87)

Source: Minnesota Department of Health, Office of Health Information Technology, MN HIT Ambulatory Clinic Survey (2011)
Response Rate: 94% (1246/1348)

Distribution of Isolated MN Ambulatory Clinics with an EHR Not Effectively e-Prescribing (N = 61)



Source: Minnesota Department of Health, Office of Health Information Technology, MN HIT Ambulatory Clinic Survey (2011)
Response Rate: 94% (1246/1348)

e-Prescribing: Notable Findings Nursing Homes & Hospitals

- 34% (24/70) of critical access hospitals were e-prescribing, slightly less than the total (39%)

- 3% (6/217) of nursing homes were e-prescribing
  - 51% (110/217) plan to e-prescribe in the next 18 months

Source: Minnesota Department of Health, Office of Health Information Technology, AHA Annual Survey (2011)
Response Rate: 93% (138/148)

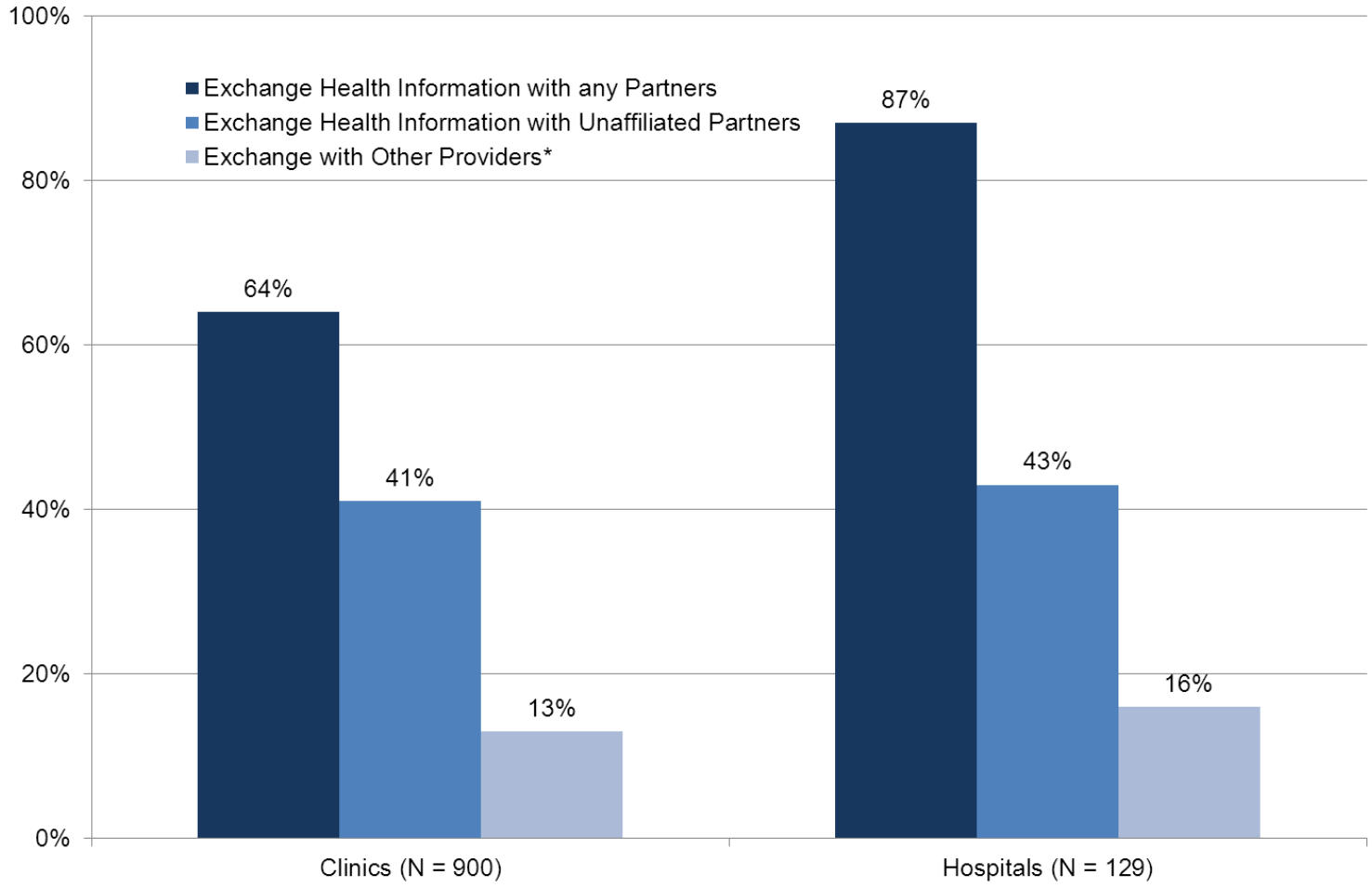
Exchange

Nursing Homes

Clinics

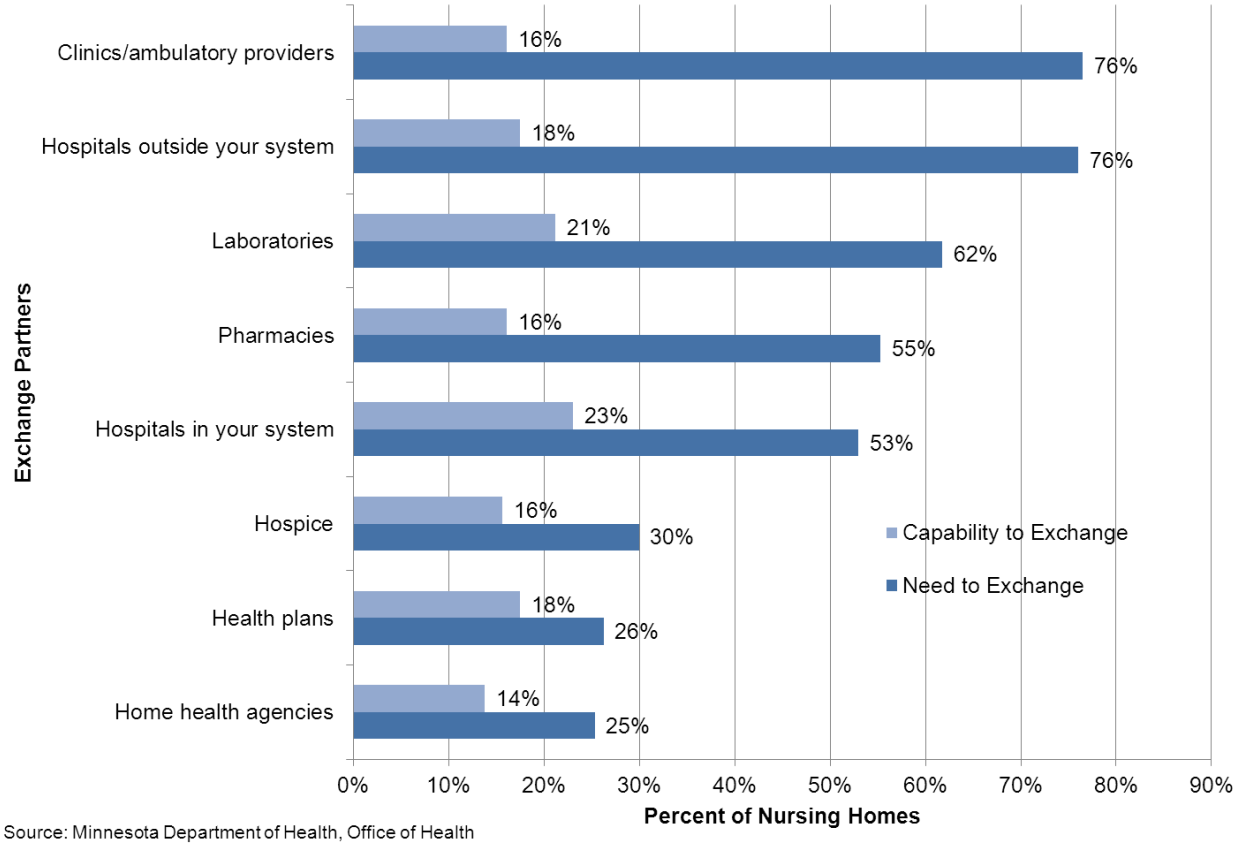
Hospitals

Health Information Exchange by Minnesota Clinics and Hospitals (2011)



*Other providers includes any provider that is not a clinic or hospital, can include nursing homes, assisted living, home health providers
Source: Minnesota Department of Health, Office of Health Information Technology, www.health.state.mn.us/e-health/assessment.html

MN Nursing Homes' Current Capability and Need to Electronically Exchange (N = 217)



Source: Minnesota Department of Health, Office of Health Information Technology, MN EHR Nursing Home Survey (2011)
Response Rate: 83% (316/382)

MN E-Health Report: Nursing Homes

Exchange

Nursing homes with EHRs indicated large gaps between the capability to exchange and need to exchange.

The largest gaps occurred with clinics, hospitals, labs, and pharmacies.

Coding Standards

LOINC

- Logical Observations, Identifiers, Names and Codes
- Terminology data set that includes standard codes for lab test names

Test name: Salmonella Stool Culture

LOINC code: 20955-1

Local or vendor-specific code: SSC

Others will be unable to interpret this code unless they have your local code lookup table or use the same vendor as your laboratory

SNOMED

- Systemized Nomenclature of Medicine
- Terminology system that includes standard codes for organisms and other results

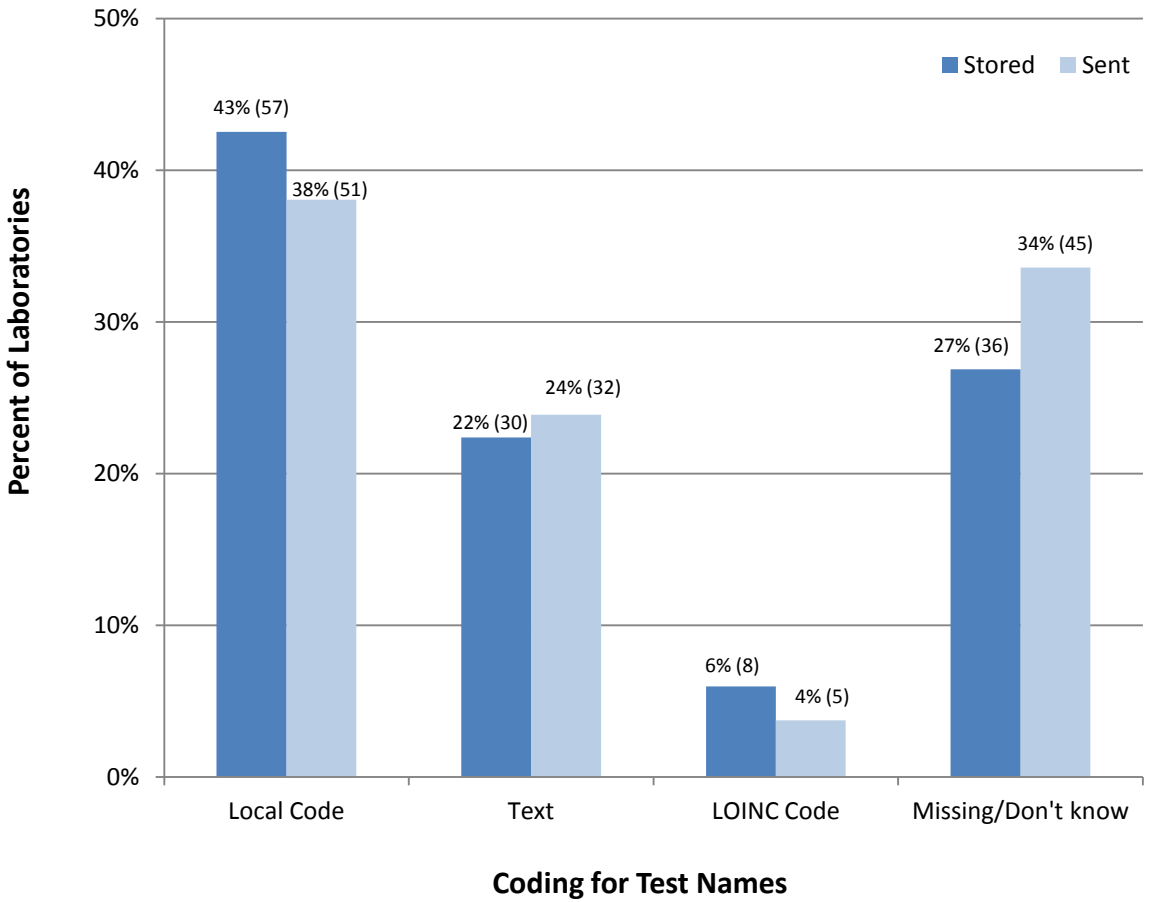
Test result: Salmonella Enteritidis

SNOMED code: 7352500

Local or vendor-specific code: Sen

Others will be unable to interpret this code unless they have your local code lookup table or use the same vendor as your laboratory

Codes† Most Used by Each MN Clinical Lab to Store and Send Test Names in 2010 (N=134*)



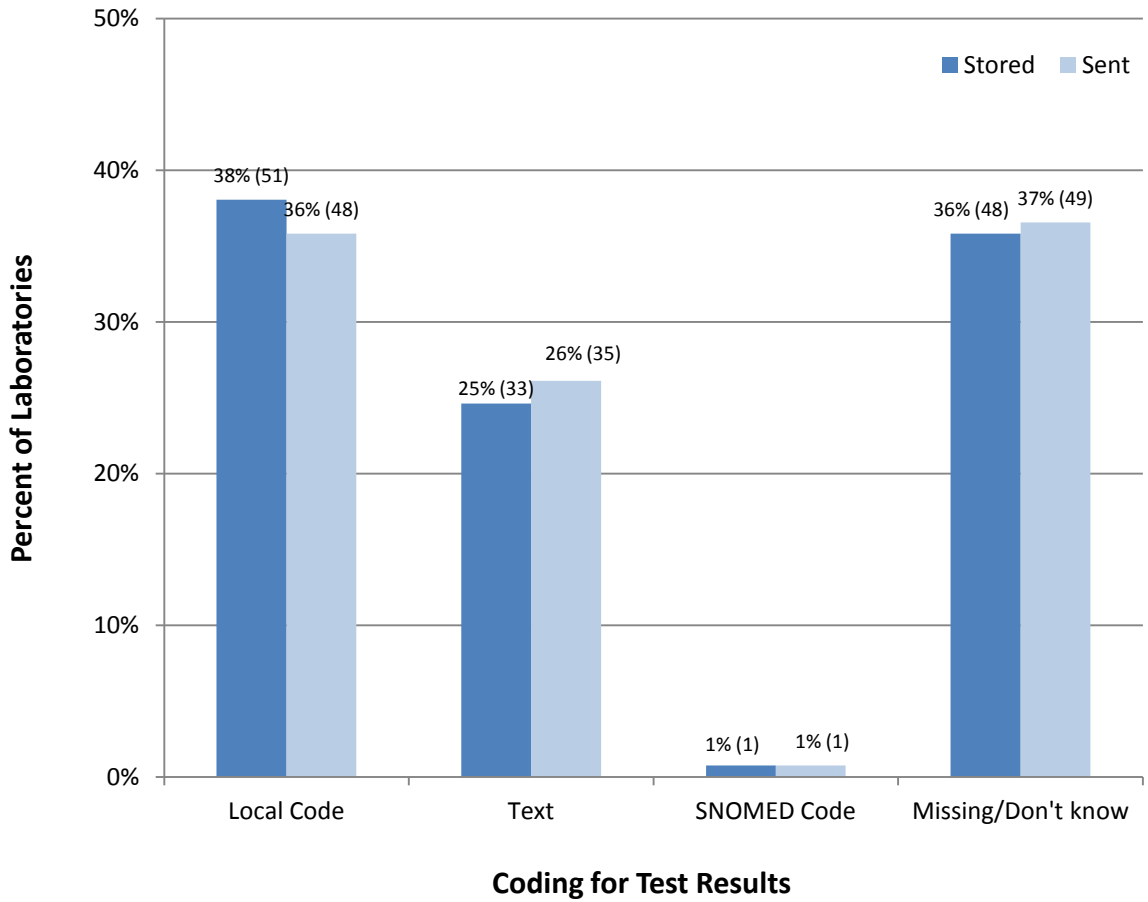
MN E-Health Report: Clinical Laboratories 2011

Exchange

LOINC codes were the least used coding for test names. About one-thirds of the clinical laboratories may not have sufficient knowledge to answer how they store and send test names.

†the code that a laboratory used the most and this code must be used more than 50% of the time.
*2 laboratories used charge codes to store test names and 1 laboratory used charge codes to send test names; 1 laboratory did not use any coding more than 50% of the time (no most used)
Source: Minnesota Department of Health, Office of Health Information Technology,
MN Clinical Laboratory Survey of Readiness and Needs for Electronic Health Information Exchange (2011)
Response Rate: 93% (151 of 163)

Codes† Most Used by Each MN Clinical Lab to Store and Send Test Results in 2010 (N=134*)

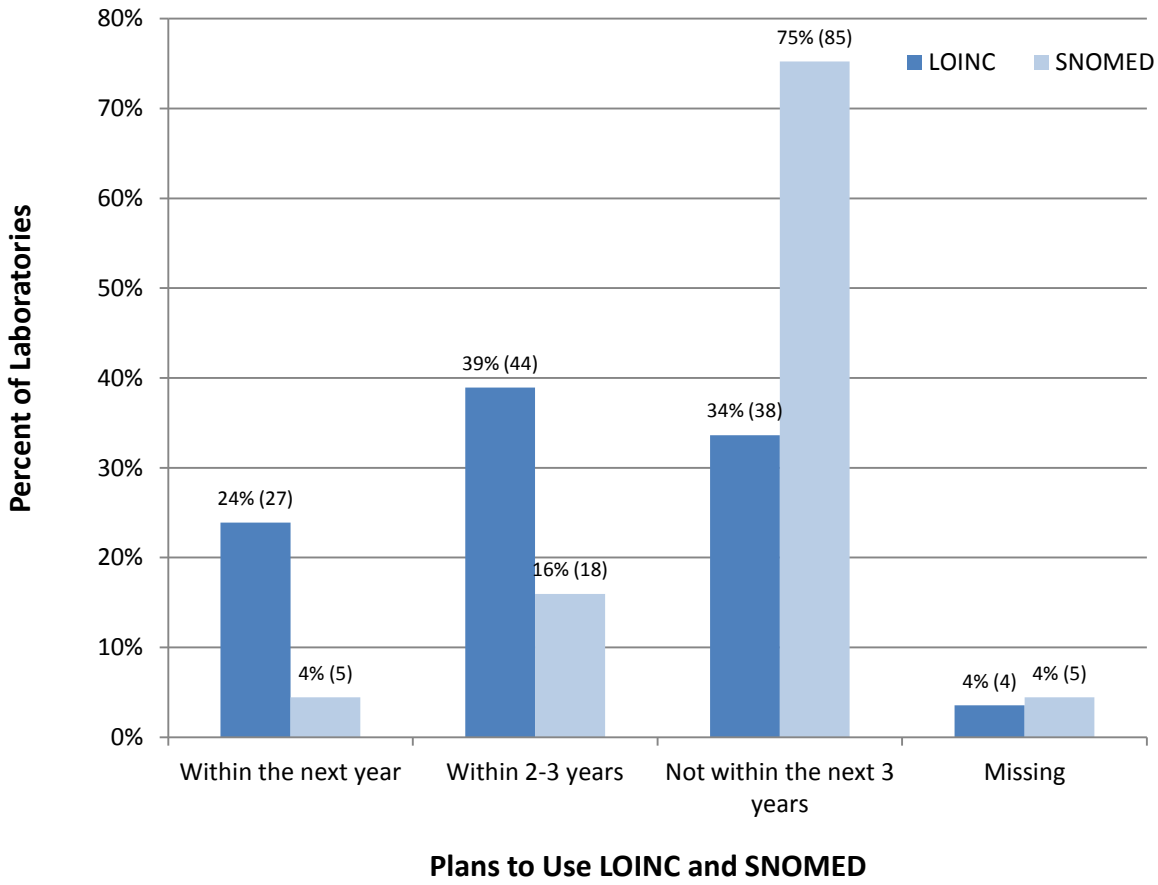


MN E-Health Report:
Clinical Laboratories 2011
Exchange

SNOMED codes were the least used coding for test results. About 37% of the clinical laboratories may not have sufficient knowledge to answer how their laboratory information system (LIS) store/send test results on lab report.

†the code that a laboratory used the most and this code must be used more than 50% of the time.
*1 laboratory used CPT codes to store/send test results
Source: Minnesota Department of Health, Office of Health Information Technology,
MN Clinical Laboratory Survey of Readiness and Needs for Electronic Health Information Exchange (2011)
Response Rate: 93% (151 of 163)

MN Clinical Labs Plans to Use LOINC and SNOMED Codes (N=113)



MN E-Health Report:

Clinical Laboratories 2011

Exchange

Within the next 3 years, 63% of the clinical laboratories (71) plan to use LOINC while 20% (23) plan to use SNOMED.

Source: Minnesota Department of Health, Office of Health Information Technology,
MN Clinical Laboratory Survey of Readiness and Needs for Electronic Health Information Exchange (2011)
Response Rate: 93% (151 of 163)

Exchange: Notable Findings

- Increase in exchange from 2010
  - 29% increase in hospitals exchanging medication history with affiliated clinics
- 52% (126/241) of rural clinics and 69% (454/659) of urban clinics were exchanging
- 66% (88/133) of labs use HL7 and 4% (5/134) use both LOINC and SNOMED (standards)
- Local health departments are primarily exchanging with MDH and DHS but need to exchange with clinics and hospitals
- Common challenges for exchange were competing priorities, cost, lack of technical support or expertise and insufficient information on exchange options available

The Minnesota e-Health Profile including assessment briefs, reports, factsheet, and surveys can be found at www.health.state.mn.us/e-health/assessment.html

Bringing It All Together

- Share best practices, templates and protocols
- Offer internship or field experience for students
- Engage in state and community activities
  - E-health workgroups, coordinated responses and assessment activities
  - Coordinate and engage in community exchange
- Sign-up for e-health listserv

www.health.state.mn.us/e-health

Bringing It All Together with HITECH Programs

- REACH (Regional Extension Centers)
  - Support providers in adopting & being meaningful users
- UP-HI & Normandale College
  - Workforce development
- CMS Incentives (Meaningful Use)
  - Incentives payments to eligible professionals and hospitals participating in Medicare and Medicaid
- BEACON
  - Demonstration communities for meaningful use of EHRs to achieving improvement in quality and outcomes
- SHARP
  - Achieving breakthrough advances to address key problems
- e-Health Connect (MDH)
  - Activities to assure health information exchange throughout MN
  - HIE Guidance (www.health.state.mn.us/divs/hpsc/ohit/hieguidance/index.html)

Bringing It All Together
Office of Health Information Technology

Focus	Example
Strategic Initiatives	▪ Minnesota e-Health Initiative ▪ Policy & oversight program and privacy ▪ e-Health Advisory Committee and Workgroups
Health Informatics Projects	▪ Public health informatics profile toolkit ▪ EHR assessment and evaluation ▪ Standards monitoring and recommendations ▪ Health information exchange ▪ Immunization interoperability ▪ e-Vital Records Interoperability
Health Informatics Capacity	▪ Mentoring and training of informatics graduate students ▪ Teaching, advising and consultation

Acknowledgements

- OHIT Colleagues
  - Marty LaVenture
  - Jennifer Fritz
  - Priya Rajamani
  - Rebecca Johnson
  - Anne Schloegel
  - Erica Christenson

Building Common Ground

If you want to go fast, go alone;
If you want to go far, go together.

African proverb

Questions

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