

# Montana's Rural Health Plan

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## **Acknowledgement**

There are roughly 736,000 people who call rural Montana home. That's approximately 76% of the state's population that live and work in small towns, farms and ranches of Montana. The Montana Rural Health Plan attempts to describe the health care situation for this unique portion of our state's citizens. As rural health advocates, the Montana Rural Health Plan Task Force knows that what works for urban folks does not necessarily work for rural counterparts. Rural Montana is unique and therefore requires unique approaches to today's health care challenges. We would like to acknowledge all those who deliver health care in rural Montana and their willingness to take what limited resources they have and make it work for them to serve the needs of their community.

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## Table of Contents

|   |           |
|---|-----------|
| Title Page.....   | i         |
| Acknowledgements.....   | ii        |
| Table of Contents.....  | iii       |
| List of Maps, Tables and Graphs.....                              | v         |
| Purpose of Montana’s Rural Health Plan.....                       | vi        |
| <b>Section I. Montana’s Health Demographics.....</b>              | <b>1</b>  |
| Geography.....  | 1         |
| Census.....   | 1         |
| Montana’s Access Barriers.....                                    | 4         |
| Health Status Indicators.....                                     | 5         |
| Economy.....  | 6         |
| Montana’s Health Care Economy.....                                | 7         |
| Montana’s Rural Health Care Challenges.....                       | 8         |
| Montana’s Rural Health Care Recommendations.....                  | 9         |
| <b>Section II. Workforce, Workforce, Workforce.....</b>           | <b>10</b> |
| Montana’s Rural Health Care Organizations.....                    | 10        |
| Montana’s Health Care Workforce Shortage.....                     | 11        |
| National Health Care Workforce Shortage Trends.....               | 12        |
| Physicians and Mid-Levels.....                                    | 12        |
| RNs, LPNs and CNAs.....   | 12        |
| Pharmacists, Physical Therapists and Dentists.....                | 13        |
| Other Health Care Workers.....                                    | 14        |
| Workforce Challenges.....   | 14        |
| Workforce Recommendations.....                                    | 14        |
| <b>Section III. Quality.....</b>                                  | <b>16</b> |
| Quality.....  | 16        |
| ED Transfer.....  | 16        |
| Reducing Preventable Falls.....                                   | 16        |
| Improving the Management of High Alert Medications.....           | 17        |
| Improving Pressure Ulcer Prevention, Management and Outcomes..... | 17        |
| Improving Trauma Clinical Care.....                               | 18        |
| PIN and Mountain-Pacific Health Collaboration.....                | 18        |
| Clinical MRSA Collaborative and Clinical Improvement Study.....   | 18        |
| Surveys.....  | 18        |
| Data.....   | 19        |
| Champions for Quality Medical Staff Leadership Conference.....    | 19        |
| Medication Reconciliation.....                                    | 19        |
| Wound Care Training.....  | 19        |
| Quality Challenges.....   | 19        |
| Quality Recommendations.....                                      | 20        |
| <b>Section IV. Connection and Integration: EMS.....</b>           | <b>21</b> |
| EMS-Safety Net for Montana’s Rural Health Care System.....        | 21        |
| Connection and Integration: EMS Challenges.....                   | 25        |
| Connection and Integration: EMS Recommendations.....              | 25        |
| <b>Section V. Technology in Montana’s Health Care.....</b>        | <b>26</b> |
| Telehealth.....   | 26        |

## Table of Contents

|   |           |
|---|-----------|
| Information Technology.....   | 26        |
| Health Information Technology Workforce.....                        | 27        |
| Technology Challenges.....  | 34        |
| Technology Recommendations.....                                     | 35        |
| <b>Section VI. Networks.....</b>                                    | <b>36</b> |
| Healthcare Networks: Framework for Success.....                     | 36        |
| Network Challenges.....   | 37        |
| Network Recommendations.....  | 37        |
| <b>APPENDICES</b>   |           |
| <b>APPENDIX A Montana Rural Health Plan Task Force Members.....</b> | <b>38</b> |
| <b>APPENDIX B Acronyms, Abbreviations and Definitions.....</b>      | <b>40</b> |
| <b>APPENDIX C Maps and Graphs.....</b>                              | <b>44</b> |
| <b>APPENDIX D Footnotes and Additional References.....</b>          | <b>61</b> |

## List of Tables, Graphs and Maps

|   | Page |
|---|------|
| #1: Map—Montana Overlaid on a U.S. Map.....   | 2    |
| #2: Table—Montana’s 56 Urban, Rural & Frontier<br>Counties—With Population Density.....                 | 3    |
| #3: Table—Urban, Rural and Frontier Definitions.....  | 4    |
| #4: Table—Distance From Select Rural & Frontier Communities to Urban Areas.....                         | 4    |
| #5: Table—Top 10 Causes of Death - Montana/U.S. Comparison - 2007.....                                  | 6    |
| #6: Table—Five Key Health Indicators for Montana and U.S. including<br>Healthy People 2020 Targets..... | 6    |
| #7: Table—Median Household Income, 2006 - 2009, ID, MT, ND, SD & WY.....                                | 7    |
| #8: Table—All Ages Poverty Rate, 2007 - 2009, ID, MT, ND, SD & WY.....                                  | 7    |
| #9: Table—Health Insurance Coverage of Nonelderly 0-64.....   | 8    |
| #10: Table—Bed Capacity - Montana Health Care Organizations.....  | 10   |
| #11: Table—Select Critical Access Services, 2011.....   | 11   |
| #12: Graph—RN Supply vs. Demand 2010 - 2020.....  | 13   |
| #13: Table—RN, LPN & CNA Vacancy and Turnover Rates, 2011.....  | 13   |
| #14: Table—Montana’s Under-represented Health Care Workers.....   | 14   |
| #15: Graph—Types of EMS Incidents.....  | 21   |
| #16: Graph—911 Response and EMT Workforce.....  | 21   |
| #17: Table—Leading Causes of Death in Montana, 1999-2007.....   | 22   |
| #18: Table—Reasons for Calling 911 for EMS Care.....  | 23   |
| #19: Table—EMS Units vs. Number of EMTs.....  | 23   |
| #20: Table—Age and Length of Service for EMTs.....  | 23   |
| #21: Table—Proximity of Montana’s Population To EMS-Urban vs. Rural.....                                | 24   |
| #22: Table—American Indian Population on Reservations and Proximity<br>to EMS per Reservation.....      | 24   |
| #23: Graph—Internet Access.....   | 27   |
| #24: Graph—Providing Telemedicine/Telehealth.....   | 28   |
| #25: Graph—Medical Records.....   | 28   |
| #26: Graph—Plans to Invest in EHR.....  | 29   |
| #27: Graph—Method to Receive Lab Results.....   | 29   |
| #28: Graph—Do You Have a System for E-Prescribing?.....   | 30   |
| #29: Graph—Status of E-Rx Implementation at your Organization.....                                      | 30   |
| #30: Graph—Where are Lab Orders Sent?.....  | 31   |
| #31: Graph—Method to Receive Lab Results.....   | 31   |
| #32: Graph—Have You Selected a Technology Manager/Coordinator?.....                                     | 32   |
| #33: Graph—Level of Education for Technology Manager/Coordinator.....                                   | 32   |
| #34: Graph—Education Focus for Technology Manager/Coordinator.....                                      | 33   |
| #35: Graph—How Does Your Pharmacy Receive Prescriptions/Refills?.....                                   | 33   |
| #36: Graph—Status of e-Rx Implementation.....   | 34   |
| #37: Map—Montana Urban, Rural and Frontier Counties.....  | 45   |
| #38: Map—Reservations and Associated Tribes of Montana.....   | 46   |
| #39: Map—Montana CAH & PPS Hospitals.....   | 47   |
| #40: Map—Critical Access Hospitals in the U.S.....  | 48   |
| #41: Map—Montana Population Projection 2000 - 2030.....   | 49   |
| #42: Map—Montana 2007 Health Insurance Coverage Status: Uninsured.....                                  | 50   |

## List of Tables, Graphs and Maps

|  | Page |
|--|------|
| #43: Map—Montana Primary Care Health Professional Shortage Areas.....      | 51   |
| #44: Map—Montana Mental Health Professional Shortage Areas.....            | 52   |
| #45: Map—Montana Dental Health Professional Shortage Areas.....            | 53   |
| #46: Map—Geographic Distribution of Montana’s Air Ambulance Services.....  | 54   |
| #47: Graph—Rural EMS Response.....   | 55   |
| #48: Map—Licensed EMS Units.....   | 56   |
| #49: Map—Proximity of EMS Units to American Indian Reservations in MT..... | 57   |
| #50: Map—EMS Advanced Life Support Care 24/7.....                          | 58   |
| #51: Map—Montana Telehealth Alliance (MTA).....                            | 59   |
| #52: Map—Montana’s 3 Trauma Regions.....                                   | 60   |

# Purpose of Montana's Rural Health Plan

The primary purpose of *Montana's Rural Health Plan* is to guide Montana's Critical Access Hospital (CAH) program and future Rural Hospital Flexibility (Flex) Program grant expenditures. This document is also intended for use by other rural, Montana health care stakeholders to assist them in the work they do. The plan was developed with input from the Montana Rural Health Plan Task Force, a broad-based group of rural health care leaders and representatives that are dedicated to rural Montana. In preparing this plan, the Task Force focused on the current status of health care in Montana while focusing on the issues presenting the biggest challenges in today's changing health care landscape. This health plan looks at the trends, the challenges and the approaches needed to ensure that rural Montanans receive excellent health care across the lifespan and across the state.

The Task Force utilized existing data and information from a variety of state and national sources while keeping an over-riding goal of creating a useful, practical guide for the future for Montana's critical access hospitals that is fact-based and data-driven. Montana's Rural Health Plan is intended as a flexible document, responsive to the changing needs and landscape of Montana.

The 2011 Montana Rural Health Plan Task Force identified six main focus areas. While these issues are addressed separately, they are in truth intertwined as will become evident in this document.

## 1. MT Health Demographics

Montana's geography is a "natural" barrier with its broad prairie expanses that are prone to high winds and blizzards in the winter, to steep mountain passes each presenting their own travel challenges- not to mention sheer distance alone. Access is also influenced by other limitations such a shortage of health care professionals across the board, lower than national average income, high unemployment rates and high uninsured rates, as this document will demonstrate.

## 2. Workforce

At any given point in time, Montana health care organizations seek employees in almost all sectors for a wide variety of positions, from physicians and technologists to CNAs and ancillary staff. The pool of available trained professionals is inadequate. This seemingly insurmountable obstacle forces Montana health care organizations to work collectively within networks and think outside the box when recruiting staff.

## 3. Quality

Montana CAHs have proven time and time again that rural health care can be a driving force in developing and sustaining quality care to its patients. The Montana Rural Healthcare Performance Improvement Network and Mountain-Pacific Quality Health, Montana's Quality Improvement Organization have built a framework upon which Montana CAHs can work together to build quality programs in their facilities. However, the definition of quality and performance improvement implies that work in this area is never done.

## 4. EMS

Forty percent of people entering the health care setting come via EMS, yet this vital and very important health care service is in serious condition in Montana. One important factor is lack of trained technicians and the aging EMS/EMT workforce. Challenges exist around meeting the EMT continuing education requirements. Creative solutions such as cross-training and cross certification must be explored.

## 5. Technology

The rapidly changing technology landscape presents many challenges to Montana’s rural health care organizations. The costs related to technological implementation are mind boggling for rural facilities that are struggling to make ends meet in the first place. Confusion about incentive payments, certification requirements and vendor selection in addition to sketchy broadband coverage across the state adds to the already difficult task of funding and implementing needed and required IT infrastructure.

## 6. Networks

Montana health care organizations participate heavily in networks as a method of survival. The spirit of cooperation and collegiality runs deep and strong throughout the state. A wide variety of associations provides many networking opportunities but other networks focus on quality improvement, group purchasing, tele-communications, and many other services that help the rural facility survive in turbulent times.

The “Recommendations” suggestions, which conclude each section are not in any priority order and are not the only activities that will be incorporated into future Flex grant activities, nor is there any guarantee they will be included in future Flex grant applications. However, Montana SRHP Task Force members identified them as potential strategies for addressing Montana’s rural health care challenges.

### Core principles:

- Quality and performance improvements are fundamental values and expectations.
- There is a compelling need for local, regional and cultural sensitivity.
- Rural citizens must play critical roles in determining rural needs and strategies.
- Collaboration must be promoted and service fragmentation reduced.
- Funding sources must be better aligned to targeted strategies.
- Rural health care is a critical factor in sustaining and developing strong rural communities.
- Decision making must be supported by quality and accurate data and data analysis.

# Montana's Health Demographics

## Geography

Montana is the fourth largest state (147,040 square miles), ranking behind Alaska, Texas and California in total area.<sup>1</sup> It's 630 miles east to west and 255 miles north to south; Montana's northern border is shared with three Canadian provinces (more than any other state) and is bordered to the east, south and west by the states of North Dakota, Wyoming and Idaho.<sup>2</sup> It would take nine hours (without stopping) to drive across the state at 70 miles per hour on an Interstate highway, longer if traveling on one of Montana's many two-lane roads. The designated frontier areas of Montana contain 133,133 square miles, 90 percent of the total area.<sup>3</sup>

Map #1 shows the State of Montana overlaid on a U.S. map. The map clearly shows Montana's large size taking up a good portion of the land mass in the eastern United States. The size of Montana from west to east is approximately the same distance as traveling from Chicago, IL to Washington, DC. In the same token, the size of Montana from north to south would be the same distance as traveling from the Great Lakes to Tennessee.

## Census

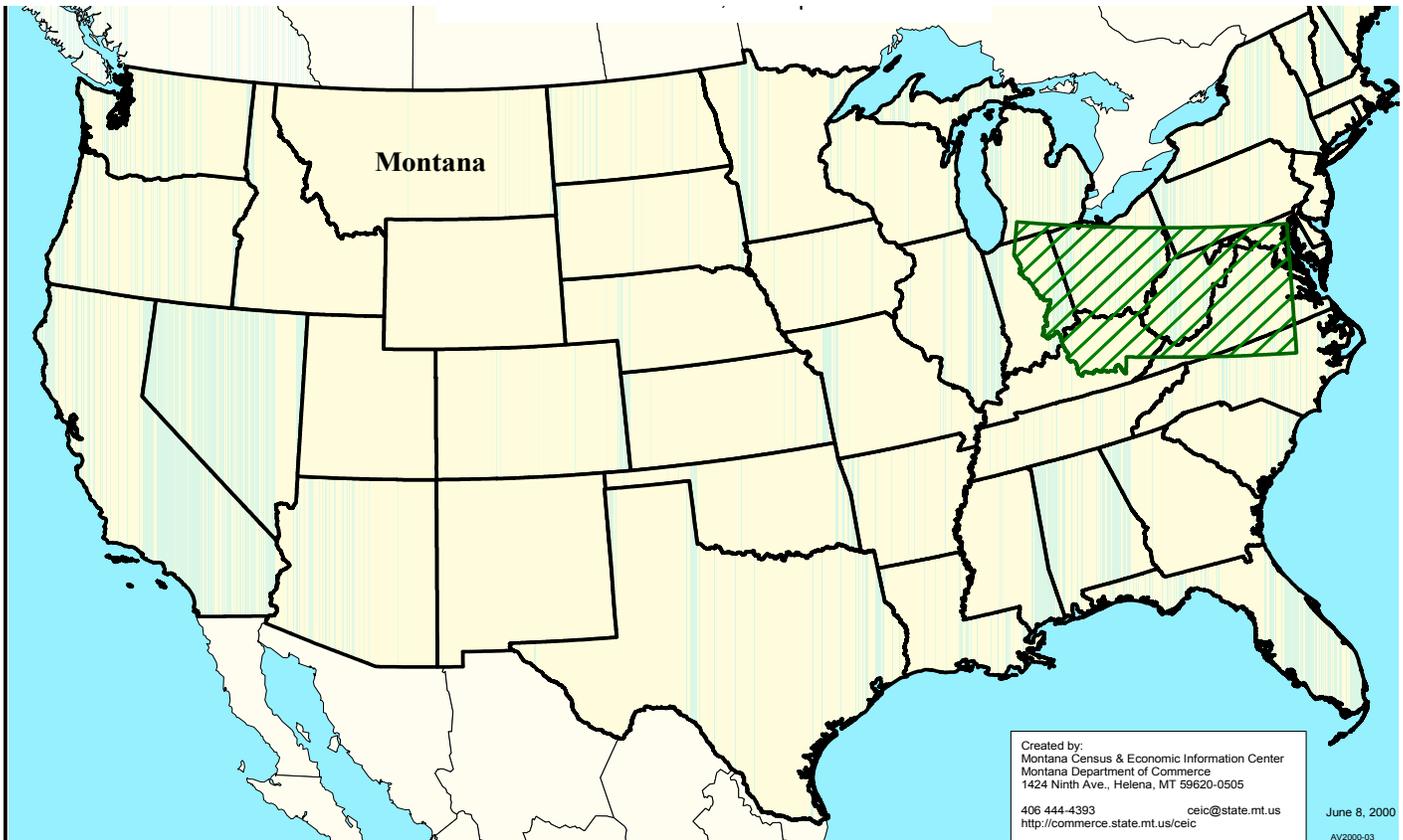
Of the 56 counties in the state, 45 are considered frontier based on population density, that is, having population densities of less than 6 persons per square mile.<sup>4</sup> Montana's one urban county (Yellowstone), as well as its 45 frontier and 10 rural counties, are listed in Table #2 along with population densities for each county. Map #37, located in Appendix C, provides density by county information as well. The 2010 estimated population of Montana was 989,415 putting the overall population density at 6.73 per square mile for the state.<sup>5</sup> This document uses the U.S. Census Bureau's population density definitions; however it is important to note that there are many differing definitions for urban, rural and frontier.

Montana has 129 incorporated cities and towns, ranging in size from Billings (105,845) to Ismay (25).<sup>6</sup> There are only seven cities and towns (Billings, Missoula, Great Falls, Bozeman, Helena, Butte, Kalispell) with populations above 20,000 and there are no communities with populations between 10,000 and 20,000.<sup>7</sup> This means that the remaining 122 incorporated communities are very small, with populations ranging from a high of 9,656 to a low of 25. The vast majority of the communities (74 of 122) have populations below 1,000.<sup>8</sup> The rural and frontier culture of Montana is even more clearly demonstrated by the fact that 423,917 residents live outside of incorporated cities and towns and 312,076 live in rural and frontier communities. Therefore, 735,993 Montanans or 76% live in rural and frontier areas of the state.<sup>9</sup>

From a health care perspective, the Washington-Wyoming-Alaska-Montana-Idaho (WWAMI) Rural Health Research Center describes frontier as a "subset of rural that has different health care delivery system... needs because they [small cities and towns] are remote from large cities and towns (e.g. most of Alaska and Montana). This rural health concept can be objectively defined (e.g., six or fewer persons per square mile for whole counties)"<sup>10</sup> Table #3 highlights urban, rural and frontier definitions.

Montana's Native Americans count for 6.4% or 62,873 of the population (2009).<sup>11</sup> There are seven federally recognized tribes in Montana, with an additional tribe's petition for federal recognition pending.<sup>12</sup> (See map #38 located in Appendix C for reservation and tribal distribution) There are three hospitals in the state that are classified as Indian Health Services (IHS), located in the communities of Browning, Crow Agency and Harlem. The Fort Belknap Health Center in Harlem was the first Indian Health Service criti-

Map # 1 : Montana Overlaid on a U.S. Map<sup>14</sup>



cal access hospital in the nation.<sup>13</sup>

Although Montana increased in population from the years 2000 (902,195) to 2010 (989,415), a 9.7% increase over ten years, 34 of the 56 counties have lost population.<sup>15</sup> The decreasing populations range from the greatest decrease of -28.3% (Treasure County) to a decrease of -0.5% (Lincoln County). The decline in county population is a reflection of the loss of population in 71 of the 129 (55.0%) incorporated cities and towns in Montana.<sup>16</sup> Population gains and losses are important considerations for health care delivery system planning in communities, counties and the state. The year 2030 projections for population shifts suggest that 29 of the 56 counties will continue to decrease in population.<sup>17</sup> The challenge will be to maintain the infrastructure of health care.

It's interesting to note that Yellowstone County barely qualifies as an urban county with 55 persons per square mile since the urban threshold is 50 or more persons per square mile. In other words, a margin of only five people per square mile in Yellowstone County keeps Montana from being classified entirely as rural and frontier.

Montana has a long history of innovation and finding creative solutions to its rural health care challenges. Twenty years ago, in response to the challenge of rural Montana health care facilities facing closure and rural Montanans losing access to medical care, the idea of a Medical Assistance Facility (MAF) was born. Twenty-three MAFs were the model for the current, federal Critical Access Hospital (CAH) program, which was developed and piloted by Montanans. The CAH program has now grown to 48 hospitals in the state and 1,320 across the U.S.<sup>18</sup> Maps # 39 and 40, located in Appendix C, represents where CAH facilities are located within the state and U.S. A few of Montana's larger CAHs are thinking about converting back

**Table # 2: Montana's 56 Urban, Rural & Frontier Counties --  
With Population Density<sup>19</sup>**

| <b>Urban<br/>(1 county)</b>   | <b>Persons per<br/>Square Mile</b> |  | <b>Frontier<br/>(continued)</b> | <b>Persons per<br/>Square Mile</b> |
|-------------------------------|------------------------------------|--|---------------------------------|------------------------------------|
| Yellowstone                   | 54.9                               |  | Toole                           | 2.7                                |
|                               |                                    |  | Teton                           | 2.7                                |
| <b>Rural (10 Counties)</b>    |                                    |  | Big Horn                        | 2.6                                |
| Silver Bow                    | 45.9                               |  | Fergus                          | 2.6                                |
| Missoula                      | 41.8                               |  | Musselshell                     | 2.5                                |
| Gallatin                      | 34.7                               |  | Madison                         | 2.1                                |
| Cascade                       | 30.5                               |  | Sweet Grass                     | 2.0                                |
| Lake                          | 19.1                               |  | Sheridan                        | 1.9                                |
| Lewis & Clark                 | 17.9                               |  | Rosebud                         | 1.8                                |
| Flathead                      | 17.6                               |  | Fallon                          | 1.7                                |
| Ravalli                       | 16.9                               |  | Granite                         | 1.7                                |
| Deer Lodge                    | 11.9                               |  | Beaverhead                      | 1.6                                |
| Jefferson                     | 6.9                                |  | Blaine                          | 1.5                                |
|                               |                                    |  | Wheatland                       | 1.4                                |
| <b>Frontier (45 Counties)</b> |                                    |  | Valley                          | 1.4                                |
| Hill                          | 5.7                                |  | Choteau                         | 1.3                                |
| Park                          | 5.7                                |  | Liberty                         | 1.2                                |
| Lincoln                       | 5.2                                |  | Daniels                         | 1.2                                |
| Stillwater                    | 4.9                                |  | Judith Basin                    | 1.1                                |
| Carbon                        | 4.8                                |  | Wibaux                          | 1.0                                |
| Glacier                       | 4.5                                |  | Golden Valley                   | 0.9                                |
| Richland                      | 4.5                                |  | Meagher                         | 0.8                                |
| Roosevelt                     | 4.4                                |  | Phillips                        | 0.8                                |
| Broadwater                    | 4.0                                |  | Prairie                         | 0.6                                |
| Sanders                       | 4.0                                |  | Treasure                        | 0.6                                |
| Dawson                        | 3.6                                |  | McCone                          | 0.6                                |
| Pondera                       | 3.6                                |  | Powder River                    | 0.5                                |
| Mineral                       | 3.1                                |  | Carter                          | 0.4                                |
| Powell                        | 3.0                                |  | Petroleum                       | 0.3                                |
| Custer                        | 3.0                                |  | Garfield                        | 0.3                                |

to PPS hospital status because their inpatient census occasionally includes more than 25 beds allowed under CAH designation.

Looking to the future, of particular concern to health care decision and policy makers is the significant aging of Montana's citizens. Census projections from 2000 to 2030 predict an increase in the state's popu-

**Table# 3: Urban, Rural and Frontier Definitions<sup>20</sup>**

| <b>Definition</b> | <b>Minimum Persons Per Square Mile</b> | <b>Maximum Person Per Square Mile</b> |
|-------------------|--|---------------------------------------|
| <b>Urban</b>      | <b>More Than 50</b>                    | <b>None</b>                           |
| <b>Rural</b>      | <b>More Than 6</b>                     | <b>Fewer Than 50</b>                  |
| <b>Frontier</b>   | <b>None</b>                            | <b>Six or Fewer</b>                   |

lation from 902,195 to 1,044,898, a 15.8% increase.<sup>21</sup> However, the number of Montanans 44 and under is projected to decrease while those Montanans over age 44 (especially those 65 and older) is projected to increase in number. Median age is expected to increase from 37.5 years of age to 46.0 over this 30-year period and the number of Montanans over age 65 from 120,949 to 269,558, a startling jump of 148,609 or 122.9%.<sup>22</sup> By 2030, those 65 and older will make up 25.8% of Montana’s population compared to 13.4% in 2000.<sup>23</sup> Map #41, located in Appendix C details Montana’s population projection from 2000 to 2030.

Between 2000 and 2030, the 65 and over population in nearly every Montana county is projected to increase, with one county’s increase estimated at 328%.<sup>24</sup> The statewide increase in the over 65 population during this 30 year time period is 104.8%, or more than a doubling of this age group.<sup>25</sup> By 2050, a quarter of all Americans will be older than 65. However, by 2030--20 years before this happens in the U.S. as a whole, a quarter of all Montanans will be older than 65. By 2025, Montana will be the 5th most -aged state in the nation. And people older than 65 have three times the doctor appointments and twice as many hospital admissions as people under 65.<sup>26</sup>

### **Montana’s Access Barriers**

One Montana Critical Access Hospital CEO always began medical provider recruiting conversations with, “Our town is 70 miles from the nearest McDonald’s, 90 miles from the nearest Wal-Mart and 200 miles from the nearest shopping center. Can you handle that?”<sup>27</sup> This description of an isolated Montana community is not unusual. A former Montana U.S. Senator put it this way, “There’s a lot of dirt between light bulbs in Montana.”<sup>29</sup> Geographic isolation and the long distances between towns and health care orga-

**Table # 4: Distance From Select Rural & Frontier Communities to Urban Areas<sup>28</sup>**

| <b>Distance in Road Miles</b> |  |
|-------------------------------|--|
| Scobey to Billings            | 363 miles (Interstate) or 357.9 miles (MT 200) |
| Glasgow to Billings           | 276.9 miles (Interstate) or 305 miles (MT 200) |
| Ekalaka to Billings           | 260 miles                                      |
| Malta to Great Falls          | 238 miles                                      |
| Libby to Missoula             | 211 miles (Interstate) or 193 miles (MT 200)   |
| Ennis to Missoula             | 206 miles                                      |
| Dillon to Missoula            | 180 miles                                      |
| Cut Bank to Great Falls       | 109 miles                                      |

Distances calculated using Mapquest.com Routes are Interstate unless otherwise indicated.

nizations are often barriers to health care access in Montana. Table #4 depicts the distance one travels from select rural and frontier communities to urban areas.

Fifty-four percent of Montanans travel more than five miles (one way) to get to a doctor's office; 13% travel more than 30 miles; 7% travel more than 50 miles.<sup>30</sup> With little or no public transportation available in many of Montana's isolated, rural communities, access to local primary care as well as out-of-town specialty medical services can be a problem. Nearly 96% of Montanans drive themselves or get a ride from a friend when traveling to a doctor's office; fewer than 1% use public transportation (probably because public transportation is found primarily in urban areas).<sup>31</sup>

The Department of Veterans Affairs provides health services and benefits to active or retired service men and women and their families. The Rocky Mountain Network provides health services for a four state area (MT, WY, UT, CO) and has VA Health Care Systems in Denver, Colorado, Salt Lake City, Utah and Fort Harrison, (Helena) Montana.<sup>32</sup> There are multiple outpatient clinics, Vet Centers, and community based outpatient centers located throughout Montana that provide care on an outpatient basis, but only the VA Montana Health Care System located in the capital city provides inpatient treatment. Long distances can make access difficult for individuals needing inpatient care and for older veterans, a long car trip is often uncomfortable and time consuming.

In a 2009 survey, 13.5% of Montana's adults reported they could not see a doctor in the previous 12 months because of the cost. Twenty-nine percent of Montanans do not have a personal doctor or health care provider.<sup>33</sup>

The isolation, low population densities and long travel distances in Montana affect all aspects of our citizens' lives, including health care. Montana is a rural state and, arguably "beyond rural," verging on frontier. Taken as a whole and using the federal definition, Montana is a very rural state.

## ***Health Status Indicators***

Health status indicators help to monitor and rate the population and are an important aspect of health care and deserve mention. Unfortunately Montana does not have the distinction of being the "healthiest" state in the Union. It also does not hold the title of "unhealthiest" state either and we seem to typically fall somewhere in the middle; Montana ranked 26th in 2009.<sup>34</sup> The state's strengths include a low prevalence of obesity at 24.2 percent, a low incidence of infectious disease at 3.5 cases per 100,000 population, and clean air with low levels of air pollution at 7.7 micrograms of fine particulate per cubic meter.<sup>35</sup> Table #5 shows how Montanans compared with the U.S. in percentages of total deaths. In 2008-2009, Montana's teen death rates were 80 per 100,000 compared to 62 for the U.S. but infant mortality rates were at 6.0, which is just slightly lower than the U.S. rate of 6.8 per 1,000 live births.<sup>36</sup> Montana's overweight or obese children account for 25.6% compared to the higher U.S. rate of 31.6%.<sup>37</sup> The AIDS diagnosis rates are also considerably lower in Montana at 2.8 per 100,000 versus 11.2 for the U.S.<sup>38</sup>

According to America's Health Rankings (2008 to 2009), Montana's immunization coverage decreased from 75.0% to 65.5% for children ages 19 to 35 months receiving complete immunizations.<sup>39</sup> In the past five years, the prevalence of obesity increased from 18.8% to 24.2% of the population, and in the last ten years, the violent crime rate increased from 132 to 258 offenses per 100,000 population.<sup>40</sup> Since 1990, the rate of deaths from cardiovascular disease decreased from 351.0 to 241.6 deaths per 100,000 population.<sup>41</sup>

**Table # 5: Top 10 Causes of Death - Montana/U.S. Comparison - 2007<sup>42</sup>**

| <b>Cause of Death</b>             | <b>Montana %</b> | <b>U.S. %</b> |
|-----------------------------------|------------------|---------------|
| Cancer                            | 22.3             | 23.2          |
| Heart Disease                     | 21.7             | 25.4          |
| Accidents                         | 7.1*             | 5.1           |
| Chronic Lower Respiratory Disease | 7.0*             | 5.3           |
| Cerebrovascular Disease           | 5.1              | 5.6           |
| Alzheimer's Disease               | 3.0              | 3.1           |
| Diabetes                          | 3.0*             | 2.9           |
| Suicide                           | 2.3*             | 1.4           |
| Pneumonia/Influenza               | 2.1              | 2.2           |
| Chronic Liver Disease/Cirrhosis   | 1.6*             | 1.2           |

Death rates percent of total deaths. Montana rates higher than the national average are marked with an asterisk (\*)

**Table # 6: Five Key Health Indicators for Montana and U.S. including Healthy People 2020 Targets<sup>43</sup>**

| <b>Health Indicator</b> | <b>Montana (2009 BRFSS)</b> | <b>U.S. Rate (2009 BRFSS)</b> | <b>Healthy People 2020 Target</b> |
|-------------------------|-----------------------------|-------------------------------|-----------------------------------|
| High Cholesterol        | 36.5%                       | 37.5% (median state percent)  | 13.5%                             |
| High Blood Pressure     | 27.7%                       | 28.7% (median state percent)  | 26.9%                             |
| Obesity                 | 23.7%                       | 27.5%                         | 30.6%                             |
| Smoking                 | 16.8%                       | 17.9% (median state percent)  | 12%                               |
| Diabetes                | 6.8%                        | 8.3% (median state percent)   | 7.2 per 1,000                     |

Montana ranks favorably compared to other national averages as shown in Table #6. The table “Healthy People 2020” displays five targeted, key health indicators: high blood pressure, obese adults, high cholesterol, diabetes and smoking with both Montana and U.S. figures.

### ***Economy***

Montana’s median household income is consistently lower than its neighboring states as shown in Table #7. Workers in Montana experienced a decrease from \$43,948 to \$42,222 from 2008 to 2009, and wage and income growth slowed significantly during the economic recession to 1% growth in the private sector

**Table # 7: Median Household Income, 2006-2009  
Idaho, Montana, North & South Dakota & Wyoming<sup>44</sup>**

| <b>State</b>   | <b>2006</b>     | <b>2007</b>     | <b>2008</b>     | <b>2009</b>     |
|----------------|-----------------|-----------------|-----------------|-----------------|
| Idaho          | \$42,846        | \$46,136        | \$47,561        | \$44,644        |
| <b>Montana</b> | <b>\$40,299</b> | <b>\$43,000</b> | <b>\$43,948</b> | <b>\$42,222</b> |
| North Dakota   | \$41,852        | \$43,936        | \$45,996        | \$47,898        |
| South Dakota   | \$42,432        | \$43,507        | \$46,244        | \$45,048        |
| Wyoming        | \$47,819        | \$52,433        | \$54,735        | \$54,400        |

**Table # 8: All Ages Poverty Rate, 2007-2009  
Idaho, Montana, North & South Dakota & Wyoming<sup>45</sup>**

| <b>State</b>   | <b>2006</b>  | <b>2007</b>  | <b>2008</b>  | <b>2009</b>  |
|----------------|--------------|--------------|--------------|--------------|
| Idaho          | 12.8%        | 21.1%        | 12.5%        | 14.4%        |
| <b>Montana</b> | <b>14.4%</b> | <b>14.1%</b> | <b>14.1%</b> | <b>15.0%</b> |
| North Dakota   | 11.7%        | 11.8%        | 11.5%        | 11.7%        |
| South Dakota   | 13.6%        | 13.2%        | 12.7%        | 14.2%        |
| Wyoming        | 10.3%        | 9.5%         | 9.5%         | 10.2%        |
| United States  | 13.3%        | 13.0%        | 13.2%        | 14.3%        |

and 0.35% in state government (from 2008-2009), with losses in both income measures.<sup>46</sup> Montana ranked 43rd in the nation with respect to hourly wages paid during 2009 at \$18.43.<sup>47</sup> Montana has typically and undesirably ranked lower than both the national average in median household income and hourly wages paid.

According to the Bureau of Indian Affairs, the unemployment rate for Montana’s Native American population living on a reservation is 66%.<sup>48</sup> Of the employed Native Americans, 36% are listed as “below poverty guidelines” for those living on an Indian reservation in Montana.<sup>49</sup>

### ***Montana’s Health Care Economy***

Taken as a whole (ambulatory health care services, assisted living facilities, community health centers, home health agencies, hospitals, nursing residential care facilities, personal care agencies, and skilled nursing facilities), the health care industry is one of the largest employers in the state, employing 61,570 people.<sup>50</sup> Using carefully researched “multipliers” for each subsector of the Montana health care economy, one Montana economist estimates an additional 29,777 jobs in other businesses are created by the healthcare industry. In other words, the health care industry is responsible for creating 75,246 jobs in Montana or nearly 18% of the state’s total work force.<sup>51</sup> In a tight economy, with Montana’s seasonally-adjusted, unemployment rate at 7.5% (January, 2011), revenue and employment opportunities through health care related jobs are a welcome relief.<sup>52</sup>

In 2009, only 39.5% of Montana’s private sector establishments offered health insurance to employees

**Table # 9: Health Insurance Coverage  
of Nonelderly 0-64, states (2008-2009), U.S. (2009)<sup>54</sup>**

| State          | Employer   | Individual | Medicaid   | Other Public | Uninsured  |
|----------------|------------|------------|------------|--------------|------------|
| Idaho          | 59%        | 8%         | 13%        | 2%           | 17%        |
| <b>Montana</b> | <b>55%</b> | <b>9%</b>  | <b>13%</b> | <b>4%</b>    | <b>19%</b> |
| North Dakota   | 65%        | 11%        | 9%         | 2%           | 13%        |
| South Dakota   | 60%        | 8%         | 13%        | 4%           | 15%        |
| Wyoming        | 61%        | 7%         | 12%        | 3%           | 17%        |
| United States  | 57%        | 5%         | 17%        | 3%           | 19%        |

compared to the U.S. rate of 55%.<sup>53</sup> Another indicator of Montana’s economic health is the population of the state that does not have health insurance. At 19%, Montana is equal with the overall U.S. rate for the uninsured population.<sup>55</sup> See Table #9 for Montana and neighboring states for health insurance coverage. Map #42, located in Appendix C, shows Montana counties by uninsured status. The state’s population of uninsured children was 17% in 2008-2009, the same as the U.S. rate.<sup>56</sup> Montana’s poverty rate is 15.0% (2009) and is higher than rates for all of the surrounding states as detailed in Table #8.

Montana employees contribute only 17% for single health premiums; U.S average is 20%.<sup>57</sup> Montana employees contribute an average of 34% for family health premiums versus only 27% for the U.S. average, and employers in Montana contribute 83% or \$3,778 toward family health premiums compared to the U.S. rate of 80% or \$3,712.<sup>58</sup> Montana’s medical assistance (Medicaid) program reported the average number of monthly recipients at 92,869 with recipients receiving an average payment of \$574.90 (Sept. 2010) per month.<sup>59</sup>

The Patient Protection and Affordable Care Act of 2010 (ACA)<sup>60</sup> will expand coverage as well as reduce uncompensated care, but many CAHs will need to make upfront investments to handle the influx of new patients. And many of the newly insured in rural areas will likely be covered by Medicaid, which pays hospitals much less than the cost of care.<sup>61</sup>

### ***Montana’s Rural Health Care Challenges***

Many CAH facilities in Montana include skilled nursing facilities (SNF) in their organizations for patients who need post-acute care they could not receive at home. Over time, however, because of the required cost-reporting methodologies and different reimbursement systems between CAHs and SNFs, many CAHs found they could no longer financially support the provision of long-term care services in their SNFs. Since 2003, approximately 15 CAH-based SNFs have closed, decreasing the number of long-term care beds in the state.<sup>62</sup> CAHs can license up to 25 swing beds which can be used to provide either acute care or skilled nursing services, depending on need.<sup>63</sup> Although sometimes used for longer-term, intermediate care when other options are not available in the community, this is not always the best choice for the resident or the facility.

What does this mean in terms of meeting the needs of Montanans in the future? Looking forward to the next twenty years when Montana’s over-65 population will approach 25% of the overall population and needing 3.5 times more health care services than its younger residents, this will place an even greater demand on rural health care facilities.<sup>64</sup>

Other rural health access challenges include the isolated nature of Montana CAHs and the long distances to tertiary care hospitals, making it difficult for rural residents to obtain timely specialty care. With the lowest median income in a five-state region and the highest uninsured rate, paying for rural health is increasingly difficult. Improvements in health status in rural areas have not kept pace with those in urban areas and access to doctors and health services is an important challenge. The overall share of Montana's population living in rural counties has steadily declined over time.

As part of the community benefit requirement, CAHs must conduct community needs assessments of health care challenges and issues, along with developing a plan to meet these needs. They must conduct this community health needs assessment at least once every three years. The hospitals must complete a needs assessment, adopt and implement a plan some time during the period that begins with the start of the first tax year after March 23, 2010 and the end of its tax year that begins after March 23, 2012. Critical Access Hospitals will also need to meet new IRS Form 990 Community Benefit reporting requirements under the Patient Protection and Affordable Care Act: section 9007- new tax exemption requirements for nonprofit hospitals.<sup>65</sup>

Montana's hospitals provide exceptional care while simultaneously tackling the difficulties of their remote geographic location, small size, limited workforce, and constrained financial resources. The low patient volumes make it formidable for these facilities to manage the high fixed costs associated with operating a hospital. CAHs and rural hospitals typically offer a range of services needed in their communities despite their smaller patient and revenue base as well as high fixed expenses, making their cost per case higher. They are particularly vulnerable to policy and market changes, and to Medicare and Medicaid payment cuts. Long-range planning, financial forecasting and access to capital to invest in equipment or aged facilities is challenging.<sup>66</sup>

### ***Montana's Rural Health Care Recommendations***

- Facilitate CAH community member dialogue with the goals of identifying local health care system needs and improving access to health care and health status (as identified in the Healthy People 2020 objectives). Include public and mental health, EMS and Community Health Center stakeholders in this dialogue. One tool available to facilitate discussion is CAH participation in Montana's Community Health Services Development (CHSD) project, which utilizes CAH community member surveys and focus groups. CHSD assessments assist Montana CAHs in their effort to comply with Form 990 community benefit reporting requirements.
- Promote wellness and advocate healthy lifestyles with emphasis on prevention and community health education.
- Increase community involvement with wellness programs and health preventive measures as well as community collaboration to share knowledge and resources (i.e., different programs and initiatives developed in Kalispell and Shelby).
- Continue to promote and encourage public reporting of quality health care information for rural consumer benefit.
- Support new and existing education assistance programs for uninsured and underinsured residents.
- Explore and develop networking with Indian Health Services and the Veteran's Administration.

# Workforce, Workforce, Workforce

## Montana's Rural Health Care Organizations

Northern Rockies Medical Center is located in Glacier County with a population listing of 13,550 people.<sup>67</sup> This CAH employs one physician, one physician assistant and two nurse practitioners along with 85 employees. They provide services to the region such as ER, obstetrics, ambulatory surgery, physical rehabilitation, and Computed Tomography (CT) imaging, to name a few. Like any health care facility, the core to quality health care is the health care workforce. Northern Rockies Medical Center's CEO Cherie Taylor explains, "Rural health care is excellent health care; however, we struggle with not only recruiting primary care providers, but also allied health professionals due to having high educational loans. National Health Service Corps has helped bridge the gap with primary care. Allied health professionals are the ones with no or limited options for loan repayment."<sup>68</sup>

Only two of Montana's 65 hospitals are located in the one county with an urban population density. Fifty-nine hospitals are located in counties with rural or frontier populations. Forty-eight of the sixty-five Montana hospitals are CAHs with 25 beds or less.<sup>69</sup> There are seven Montana counties without a hospital.<sup>70</sup>

There are 45 rural health clinics, 17 different types of community health centers, and 14 tribal health facilities, as well as 88 nursing homes and 179 assisted living facilities in the state.<sup>71</sup> Why are there so many assisted living facilities? A number of years ago, several large, for-profit assisted living facility companies came to Montana. At that time the need for assisted living facilities was underdeveloped. This need was met, exceeded and now overbuilt. Many of these facilities are less than ten bed "mom and pop" homes. The primary reason for the decrease in nursing homes is that many CAHs have converted to swing beds due to financial constraints and closed their skilled nursing facilities.<sup>72</sup>

CAH facility profiles, compiled by MHREF show that 22 of the 46 CAHs providing data have fewer than 100 employees on staff. There are nine facilities that have between 100 to 199 employees and eight facilities that have between 200 to 299 employees. Seven CAHs have more than 300 employees but fewer than 550.<sup>73</sup>

Table #10 below displays the bed capacity at Montana's hospitals, nursing homes and assisted living facilities:

**Table # 10: Bed Capacity - Montana Health Care Organizations<sup>74</sup>**

|                                       | <b>Number of Beds - 2005</b> | <b>Number of Beds - 2009</b> |
|---------------------------------------|------------------------------|------------------------------|
| Hospitals                             | 2,421                        | 2,421                        |
| Nursing Homes (as part of a hospital) | 1,862                        | 1,399                        |
| Assisted Living Facilities            | n/a                          | 4,708                        |

Table #11 lists ten different types of services and the number of CAHs that provide the service.

**Table # 11: Select Critical Access Services, 2011<sup>75</sup>**

| <b>Service</b>                       | <b>Number of MT CAHs offering specified services</b> |
|--------------------------------------|--|
| Physical Rehabilitation - Outpatient | 44   |
| CT Scanner - Computed Tomography     | 33   |
| Ultrasound                           | 33   |
| Nutrition Program                    | 33   |
| Endoscopy                            | 32   |
| Breast Cancer Screening              | 32   |
| Echocardiography                     | 28   |
| Outpatient Surgery                   | 27   |
| Birthing Room                        | 20   |
| MRI - Magnetic Resonance Imaging     | 20   |

There are 2,421 hospital beds in Montana compared to 54,708 hospitals beds in New York.<sup>76</sup> New York's largest hospital, New York Presbyterian Hospital, has 2,249 beds, nearly as many hospital beds in Montana.<sup>77</sup>

Montana ranks on the low end (9th out of 51) in the number of nursing homes<sup>78</sup> in the state (again, because of its small population) and accounts for just 0.4% in the number of U.S. nursing home residents.<sup>79</sup> Although Montana has only 37 home health agencies statewide, home health services are not available in 13 of Montana's 56 counties.<sup>80</sup> From 2000 to 2009, Montana lost 34 of its 76 home health agencies or 45% of the total number of home health agencies over a 9-year time span.<sup>81</sup> A primary reason Montana lost some home health services is due to the Prospective Payment System and its inequitable impact on small, rural agencies. The PPS methodology requires a minimum patient volume for a facility to remain viable; many Montana agencies simply cannot reach that volume. Several more facilities were recently lost to additional cuts in reimbursement.

The WWAMI (Washington, Wyoming, Alaska, Montana and Idaho) program is available through the University of Washington School of Medicine. The program allows students to attend without having to pay out-of-state tuition. Currently there are 20 openings available to Montana medical students and there is only one available Montana publicly sponsored medical education slot available per 46,000 citizens, which is well below the national average of one per 26,150 citizens.<sup>82</sup>

### ***Montana's Health Care Workforce Shortage***

All of Montana's rural health care organizations—whether a community health center, rural health clinic, sole community hospital, CAH, nursing home, assisted living facility or home health agency—face a shortage of health care professionals and workers.

Forty-six of Montana's fifty-five rural and frontier counties are completely or partially designated as Primary Care Health Professional Shortage Areas (HPSAs).<sup>83</sup> Forty-seven out of all of Montana's fifty-six counties are designated as Dental HPSAs.<sup>84</sup> The largest, most severe mental health shortage area in the entire U.S. is Eastern Montana. The eastern Montana Mental Health HPSA contains 78,607 people and is spread over 17 counties (all classified as "frontier" counties) and 47,945 square miles.<sup>85</sup> Mental Health

HPSAs require low numbers of “Core Mental Health Professionals” such as clinical psychologists, clinical social workers, psychiatric nurses or marriage and family therapists as well as low numbers of psychiatrists to qualify. This means there are very few mental health professionals to diagnose and treat people needing mental health services in the Eastern Montana Service Area.<sup>86</sup>

HPSA maps #43, 44 and 45, located in Appendix C, detail which counties are listed as Primary Care, Dental and Mental Health shortage areas.

The American Hospital Association reported that “over the last 30 years, more than 60 percent of WWAMI graduates have stayed within the five-state area to practice medicine, and over the last 50 years, nearly half of all graduating students have chosen to practice in the field of primary care. It is estimated that about 20 percent of all WWAMI graduates will practice in HPSAs upon receiving their degree.”<sup>87</sup>

## ***National Health Care Workforce Shortage Trends***

As in other states, Montana’s “health care industry is in the middle of a full-blown workforce crisis....”<sup>88</sup> The Association of American Medical Colleges (AAMC) estimates that 37% of primary care physicians will be part of a 124,000 physician shortage by 2025.<sup>89</sup> To compound the problem, specialist shortages are significantly more pronounced in rural areas than in urban areas,<sup>90</sup> and the overall educational debt (average debt \$139,517) is paramount as graduates with high debt are much *less* likely to pursue family practice or primary care specialties.<sup>91</sup> These graduates typically pursue specialties that offer higher income or more leisure time and escalate the primary care shortage.<sup>92</sup>

## ***Physicians and Mid-Levels***

In Montana, 24.5% of active physicians are sixty or older (which is higher than the national average) and more likely to retire in the next five years.<sup>93</sup> Montana’s professionally, active physicians were only 23.0 per 10,000 population compared to the U.S. rate of 27.7 per 10,000 (2008).<sup>94</sup> But physicians in patient care accounted for only 21.9 per 10,000 in Montana.<sup>95</sup> In 2009, there were 410 employed Family and General Practitioners in Montana and only 130 Ob/Gyn doctors in the state.<sup>96</sup>

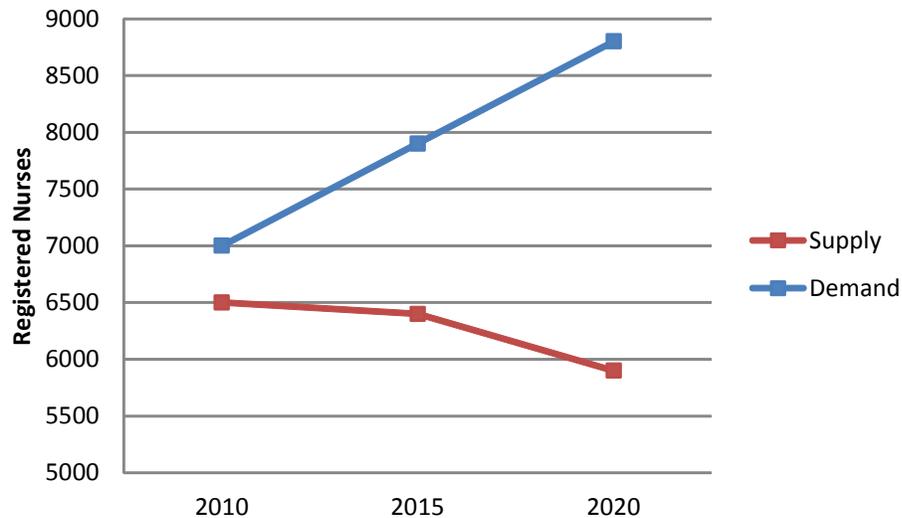
Nationally, the Federal Health Resources and Services Administration (HRSA) anticipates a shortfall of approximately 85,000 physicians by 2020.<sup>97</sup> From 1997 to 2005, the number of U.S. Medical graduates entering family medicine residencies has dropped by 50%, which affects rural states like Montana.<sup>98</sup>

## ***RNs, LPNs and CNAs***

By 2020, Montana is projected to have a shortage of 2,188 RNs (8,731 RN positions with only 6,543 RNs available to fill those positions).<sup>99</sup> While a 40% increase in demand for RNs is anticipated from 2000 to 2020, only a 6% increase in supply is projected.<sup>100</sup> Shortages of 20% are expected in the U.S. in 2015, increasing to 29% by 2020 (see Graph #12).<sup>101</sup> In 2009, Montana’s total employed Registered Nurses accounted for 0.3% of the U.S. total.<sup>102</sup> Fueling this RN shortfall is the aging of the RN workforce, with forty percent of the RN workforce (projected to be) over fifty in 2010.<sup>103</sup>

From its 2011 “Workforce Staffing Survey,” MHA...An Association of Montana Health Care Providers reported the following vacancy and turnover rates (see Table #13) for Registered Nurses (RNs), Licensed Practical Nurses (LPNs) and Certified Nursing Assistants (CNAs) at a sampling of Montana’s hospitals and nursing homes.

**Graph # 12: RN Supply vs. Demand  
2010 - 2020<sup>104</sup>**



Montana’s LPN and CNA vacancy rates may worsen in the years ahead. Because of the aging Baby Boomer population and its increasing need for long-term care workers, the need for LPNs and CNAs is expected to explode across the U.S. From 2003 to 2010, the need for long-term care workers increased by 45% or 800,000 workers. LPN job growth is projected at 20.2% or an additional 142,000 jobs by 2010. The total number of direct-care workers needed in long-term care settings by 2050 is a staggering 5.7 million to 6.6 million, a 200% to 242% increase compared to the (2003) long-term care work force.<sup>105</sup>

**Table # 13: RN, LPN and CNA  
Vacancy and Turnover Rates, 2011<sup>106</sup>**

| Occupation | Vacancy Rate | Turnover |
|------------|--------------|----------|
| RN         | 2.7%         | 7.7%     |
| LPN        | 3.1%         | 7.7%     |
| CNA        | 6.0%         | 19.0%    |

### ***Pharmacists, Physical Therapists and Dentists***

Increasing demand for pharmacists, physical therapists and dentists is a reality at the national level and in Montana. With a larger, aging population, the increase for physical therapists is expected to grow 27% from 2006 to 2016 according to the Bureau of Labor Statistics.<sup>107</sup>

Nationally, the number of pharmacists grew 14.5% from 196,000 in 2000 to 224,500 by 2010, which will not come close to keeping pace with escalating demand, both nationally and in Montana.<sup>108</sup>

Montana has a dentist to population ratio of 51.5 per 100,000, less than the national average of 63.6 per 100,000. Also, Montana dentists are older than the national average portending a severe shortage of dentists in coming years.<sup>109</sup> In 2007, 35 of Montana’s 55 rural and frontier counties were designated as Dental Health Shortage Areas.

## Other Health Care Workers

The following health care workers were identified as under-represented (less than 1.0) in Montana in comparison to the national average; see Table #14 below. It's important to note that a national average of 1.0 does not indicate an adequate supply of health care workers. For example, there is a nationwide shortage of RNs, and Montana is also experiencing a shortage of RNs even though Montana meets the national average for RNs.

**Table # 14: Montana's Under-represented Health Care Workers<sup>110</sup>**

| <b>Health Care Worker</b>                 | <b>1.0 = National Average</b> |
|---|-------------------------------|
| Medical Assistants                        | .58                           |
| Physical Therapy Assistants               | .65                           |
| Lab Technicians                           | .71                           |
| Certified Occupational Therapy Assistants | .86                           |
| Dental Assistants                         | .94                           |
| Diagnostic Medical Sonographers           | .94                           |
| Pharmacy Technicians                      | .95                           |
| Home Health Aides                         | .97                           |
| RNs                                       | 1.0                           |

## Workforce Challenges

Continued shortages of needed health care professionals will remain a reality for some time in Montana. Enticing medical professionals to practice in Montana's rural areas is an arduous, expensive undertaking and as one CAH CEO put it, "there's nobody in the pond to fish for."<sup>111</sup> Montana does not have a medical school and offers limited residency and medical education programs. Educating "homegrown" professionals takes time, which many rural facilities simply do not have. In addition, rural Montana residents who wish to pursue health care-related higher education must travel further to obtain that education, which increases the overall cost. Currently, there is no formal statewide plan to address these problems. Competitive wages is another challenge facilities face, whether competing with other health care facilities for staff or with other labor markets paying more, as is the case in eastern Montana where rural hospitals have lost staff to the oil fields. Lastly, the health care workforce in rural Montana is aging.

## Workforce Recommendations

- Develop productive relationships with health education institutions to provide educational experiences in rural hospital sites.
- Continue to work with colleges, universities and vocational schools in the state to increase nursing and allied health professional slots, and to provide programs for laboratory and medical technician programs.
- Support peer-to-peer networking to help reduce the isolation providers sometimes feel.
- Identify CAH best practices for retaining and recruiting physicians, mid-level providers (nurse practitioners and physician assistants) and other employees. Distribute best practice information and examples to CAH administration and HR staff (if the CAH has HR staff).
- Consider completion of a statewide and continuous ongoing assessment of all CAH staff to identify

educational needs, specific programming; continue successful Champions for Quality and billing/coding education programs, expand CAH-employee educational offerings for staff at all levels, and leverage telehealth and webinar technologies in the delivery of educational programs and shared experiences with other hospitals.

- Consider expanding CAH partnerships with Montana's higher education programs, specifically student intern programs, with a goal of hiring hard-to-recruit student interns. Examples of hard-to-recruit student interns are pharmacists, physical therapists, imaging and lab technologists and OR Techs (there may be others). Identify CAHs that participate in student intern and preceptor programs.
- Pursue collaborative funding arrangements with Montana's Office of Rural Health and Area Health Education Centers to identify and track workforce needs and the status of recruitment efforts through the use of relational data base software.
- Keep CAHs informed on the impact of HPSA and MUA designations and their recruiting efforts. Encourage CAHs to work with the Montana Primary Care Office to update facility and geographic area designations.
- Promote and encourage shared staffing arrangements between CAHs and networks of CAHs with a goal of reducing expenses.

# Quality

## Quality

Every CAH in Montana or 48 of the 65 hospitals in the state, participates in the Montana Rural Healthcare Performance Improvement Network (PIN), which focuses on data gathering, benchmarking, peer grouping and data feedback to improve quality. For example, the PIN spearheaded a Stroke Initiative to present benchmarking data and data feedback to CAHs to improve symptom recognition, timeliness and improved treatment for ischemic and hemorrhagic stroke patients.<sup>112</sup> The Montana Rural Hospital Flexibility grant provides substantial funding for PIN activities, which are determined by a member-driven strategic process.

The Clinical Improvement Studies were established to assist Montana CAHs in meeting their quality improvement Medicare Conditions of Participation. The PIN continually sponsors two separate clinical studies developed with the assistance of the PIN Clinical Improvement Panel, the PIN Advisory Board and a committee of frontline CAH staff.

Once the study is finalized, PIN staff coordinate baseline data collection and provide a summary report to participating facilities depicting their current delivery of care status around the study topic. The facility then has approximately six to eight months to conduct performance improvement with the assistance of the Network. When the performance improvement period comes to a close, participating facilities collect and submit remeasurement data. PIN staff provide a summary report comparing baseline and remeasurement data with the hope of seeing improvement.

A summary of completed studies and findings follows.

### *ED Transfer*

The ED Transfer study focused on improving the quality of transfer documentation. A popular study with PIN members, this study enjoyed a high degree of participation with 53% of PIN members collecting baseline data from 389 qualifying cases and 60% collecting remeasurement data on 612 qualifying cases.<sup>113</sup>

Over the 3-year history of the project, participating PIN members have made measurable improvement in the following areas:

- Documentation of physician-to-physician verbal communication from 87% to 92%,<sup>114</sup> and
- Inclusion of documentation of heart rate improved from 93% to 95% and O2 saturation documentation improved from 87% to 90%.<sup>115</sup>

### *Reducing Preventable Falls*

In response to the identification of falls as a leading cause of injury, hospitalization and death among America's elderly population, PIN members undertook a study to reduce preventable falls in Montana CAHs.<sup>116</sup> Of the 49% of PIN members who collected baseline data on 497 qualifying cases, there was 28% collection of remeasurement data on 278 qualifying cases.<sup>117</sup>

Over the course of the study, participating PIN members improved their aggregate performance in all focus areas of the study, in some cases up to 100%. Especially notable improvements include the follow-

ing:

- 97% of participating facilities implemented and use a fall risk assessment.
- The rate of patients experiencing a fall during the admission experienced a 60% reduction.
- Documenting any/all changes in patient condition.
- Notifying the provider.
- Documenting any new orders and/or any actions taken as a result of the fall.
- Submitting the report to risk management within 24 hours of the fall.
- Including the fall type (trip, slip, etc.) and severity.
- Filer signing the report.
- Recording the patient's range of motion.

### ***Improving the Management of High Alert Medications***

The PIN used the Institute of Healthcare Improvement's (IHI) *5 Million Lives Campaign* high alert medication management performance measures and definitions as the basis for a clinical study that addressed five high alert medication management processes and outcomes.<sup>118</sup> Forty-five percent of PIN members collected baseline data from 586 qualifying cases with twenty-one percent collecting remeasurement data on 328 qualifying cases.<sup>119</sup> PIN members experienced measurable improvement in high alert medication management processes and outcomes in the following areas:

- Approval and implementation of protocols for the management of coumadin, heparin, insulin, narcotic and sedative use,
- Reduction of potential adverse events associated with the use of coumadin, heparin, insulin, narcotic and sedative use, and
- Recognition and reporting of potential adverse drug events (ADEs) related to the use of insulin.

### ***Improving Pressure Ulcer Prevention, Management and Outcomes***

Fifty-one percent of PIN members collected baseline data from five hundred forty-three qualifying cases with thirty percent collecting remeasurement data on three hundred and five qualifying cases to evaluate aggregate, peer group and facility-specific process improvements in pressure ulcer patient care processes and outcomes.<sup>120</sup> Performance measures were defined using IHI's *5 Million Lives Campaign* definitions.

PIN members submitting data for remeasurement demonstrated the group made measurable improvement in pressure ulcer care and outcomes in the following areas:

- Admission risk assessment, identification of ulcers present on admission (POA) and appropriate interventions when an ulcer is POA.
- Preventive care interventions when a patient is identified to be at-risk for pressure ulcer development.
- Providing appropriate interventions for patients who develop a new pressure ulcer during the admission.
- Reducing the severity of new pressure ulcers developed during admission.

### ***Improving Trauma Clinical Care***

Forty-five percent of PIN members collected baseline data from 323 qualifying cases with forty-seven percent collecting remeasurement data on 356 qualifying cases for a study on improving emergency depart-

ment trauma care, which assisted in meeting the requirements for trauma receiving center designation.<sup>121</sup> The measures selected for this study were developed in collaboration with the State Trauma Registry and focused largely on documentation needs.

Remeasurement data showed improvement on documentation of EMS response times, essential elements of an initial ED assessment and the provider's secondary assessment, recording vital signs every 15 minutes, intake and output documentation, and discharge instructions. Remeasurement data also showed improvement in the following areas:

- EMS trip ticket provided to the receiving facility.
- Vital signs taken in the field.
- Treatment provided.
- Cervical-spine placement.
- Insertion of 2- 18 gauge or larger intravenous lines.
- Intubation of appropriate patients when the Glasgow Coma Score is  $\leq 8$ .
- Chest tube insertion for appropriate patients when a pneumothorax is present.
- Increased activation of the facility trauma team by EMS for appropriate trauma patients.
- More trauma patients were attended by an ATLS-certified ED provider.

### ***PIN and Mountain-Pacific Quality Health Collaboration***

Montana PIN has a long history of working closely with Mountain-Pacific Quality Health dating back 20 years to the Medical Assistance Facility (MAF) Demonstration project. Montana PIN and QIO staff meet on a quarterly basis to review CAH activities underway with both organizations sharing resources, materials and data on quality improvement opportunities and providing education in several venues which includes the co-sponsorship of the PIN's annual provider quality conference, Champions for Quality. MPQH is an advocate for and supports the development of rural, relevant, quality measures and monitors Montana's participation in national quality improvement initiatives from CMS, IHI and others.

### ***Clinical MRSA Collaborative and Clinical Improvement Study***

Mountain-Pacific Quality Health and the PIN are working collaboratively on a MRSA risk assessment and screening tool project. A MRSA Risk Assessment Development Team, including members from each of the PIN peer groups will develop a MRSA screening tool and packet. The team's goal is to compile a complete packet of: 1) a screening tool, 2) protocols/policies, and 3) an implementation guide for all CAHs at the QI showcase. Mountain-Pacific will utilize an infection preventionist as the technical advisor to develop screening protocols.<sup>122</sup>

### ***Surveys***

Mountain-Pacific Quality Health has worked with eleven nursing homes and four hospitals in administering and collecting results from the following surveys: Hospital Leadership and Quality Assessment Tool (HLQAT) and the AHRQ Patient Safety Survey Instruments.<sup>123</sup> From the survey results, Mountain-Pacific works with leadership and staff to improve identified patient safety issues such as lack of communication, handoffs, and teamwork.

### ***Data***

Mountain-Pacific Quality Health obtained, reviewed, and analyzed provider SCIP and HF data in both

the CAH and PPS settings. They obtained individual provider data on applicable measures and reviewed it quarterly. Mountain-Pacific prepared dashboard “Red Light/Green Light” reports to compare clinical performance rates of the individual providers to a target rate in order to exhibit performance trends. They worked with providers to track their own approaches to quality improvement and assess their effectiveness in each component. This incorporated the use of action plans, PDSA, process mapping, Lean, etc. In addition, Mountain-Pacific provided support to CAH and PPS facilities that needed or requested assistance. The support included, but was not limited to, explanations of measures and technical assistance for quality data reporting.

In addition, Mountain-Pacific will work more intensely with the PIN under a separate contract to increase CAH CART usage and Hospital Compare participation. The purpose is to motivate CAHs to implement related quality improvement initiatives.

### ***Champions for Quality Medical Staff Leadership Conference***

Each year Mountain-Pacific Quality Health works with DPHHS/PIN/MHA/MHREF to sponsor and host the “Champions for Quality” Medical Staff Leadership Conference.<sup>124</sup> The conference is for Montana’s rural medical staff and focuses on principles and techniques that can enhance the work environment, increase productivity and satisfaction and improve the quality of care.

### ***Medication Reconciliation***

During 2009 and 2010, the PIN and Mountain-Pacific Quality Health worked with seven CAHs on a medication reconciliation project. Mountain-Pacific’s pharmacist provided technical assistance on implementing a medication reconciliation process. All CAHs participating in the project were able to develop, implement and maintain a medication reconciliation process that included hospital and/or same day surgery admission, transitions of care and discharge. The data collected demonstrated a reduction in potential adverse medication events for patients from an average of eight per patient per admission, to less than one per patient per admission.

### ***Wound Care Training***

Throughout its 2008-2011 contract, Mountain-Pacific Quality Health’s wound care specialist provided pressure ulcer prevention and treatment workshops to CNAs, RNs, physical therapists and physicians in eight CAH communities. In May 2010, Mountain-Pacific sponsored a Wound Care certification course for Montana nursing homes. All participants received their Wound Care Certification (WCC).

### ***Quality Challenges***

The Patient Protection and Affordable Care Act of 2010 (ACA) includes a new value-based purchasing (VBP) program which is designed to help advance quality and patient safety by tying Medicare hospital payments to performance on clinical process and outcome measures starting FY 2013. Unfortunately many CAHs will be excluded from this program due to low volume, as most may be unable to meet “Accountable Care Organization” requirements.<sup>125</sup> Small numbers in rural hospital quality data can undermine statistical significance.

Rural quality programs suffer loss of momentum through turnover of CAH quality improvement staff

which requires continuous training needs. Managing multiple requests for quality data from national, state and other sources adds to the workload of quality coordinators who are already stressed by fulfilling many different jobs within their organization or wearing “multiple hats” as the saying goes. Quality programs work best when leadership supports quality initiatives in individual hospitals, which is sometimes lacking. Many national quality initiatives include measures that have little relevance to small, rural hospitals and it is difficult to find meaningful measures that tell the rural, health care, quality story. Many rural hospitals gather too much quality data and use too little key data for strategic purposes.

### *Quality Recommendations*

- Continue to provide peer networking and support to CAH quality improvement personnel to minimize isolation and maximize shared expertise.
- Enable rural hospitals to be players in national quality initiatives and reporting.
- Support relevant data collection that can be used for making improvements or drive strategy.
- Continue to provide a platform for hospitals to learn from each other; profile hospital successes and best practices; use hospital staff in quality education workshops to help improve collaboration and learning outcomes.
- Physicians are important quality champions and should be represented in quality initiatives.
- Support and expand the CAH Performance Improvement Network (PIN).
- Continue cooperative efforts with Mountain-Pacific Quality Health to find resources to support quality improvement initiatives. Raise CAH data reporting and collection participation rates. Consider strategies to reduce health disparities between Native Americans and other Montanans by working with CAHs on or near reservations.
- Assist CAHs in meeting Medicare standards by developing specific action plans and templates to correct CAH survey deficiencies. Tie written action plans and templates to CAH survey deficiency tags and post on-line for efficient implementation of corrective actions by CAH staff.

# Connection and Integration: EMS

## EMS--Safety Net for Montana's Rural Health Care System

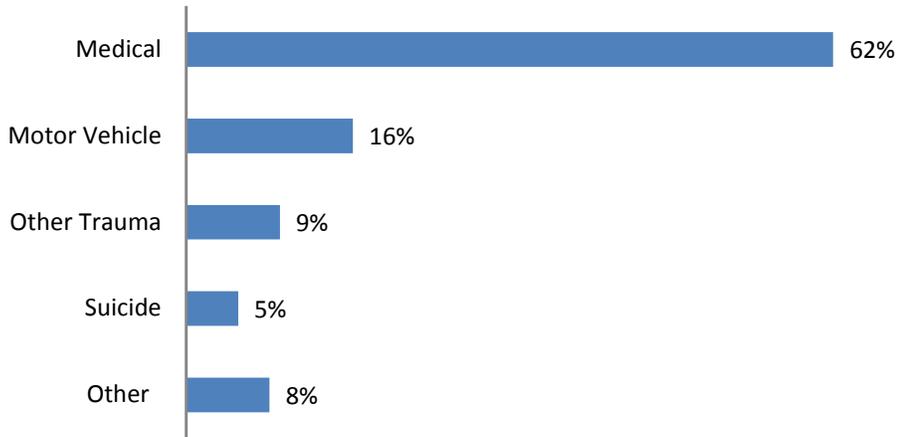
Montana has high unintentional and intentional injury rates, especially between the ages of one to forty-four years of age (detailed in Table #17). Unintentional Injury is the leading cause of death in Montana for age cohorts one to forty-four.

Montana's young population has a high injury death rate requiring Emergency Medical Services (EMS). EMS becomes an important safety net for the state's rural population to connect to prompt medical treatment.

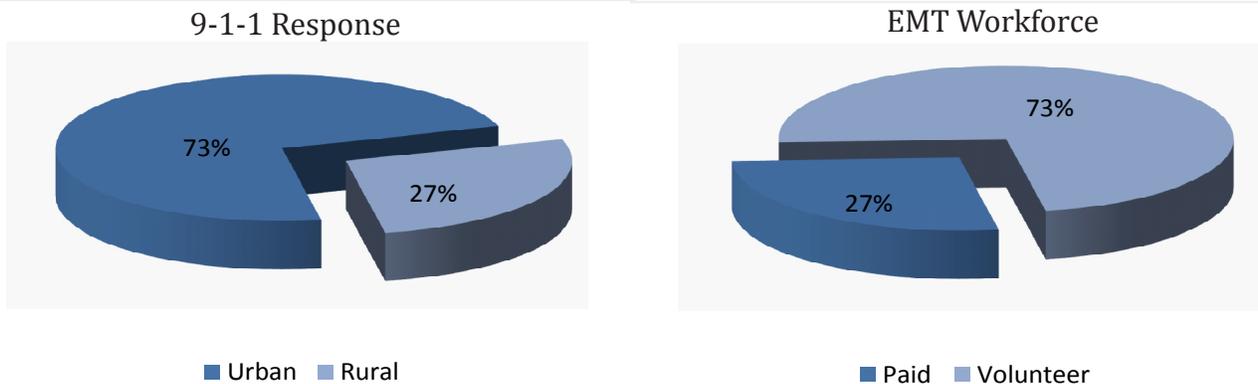
The 2007 Motor Vehicle Death Rate per 1,000 in Montana was 27.6 compared to 14 per 100,000 in the U.S.<sup>126</sup> The state's alcohol-impaired fatality rate was 0.84 per 100 million vehicle miles traveled in 2008, which is the highest alcohol-impaired fatality rate in the nation and is double the national rate.<sup>127</sup> These behavioral risk factors further impact the state's EMS system requirements for staffing ambulance services and training EMTs.

The following table and graph highlight the types of EMS incidents, response and workforce.

**Graph # 15: Types of EMS Incidents<sup>128</sup>**



**Graph # 16: 911 Response and EMT Workforce<sup>129</sup>**



**Table # 17: Leading Causes of Death in Montana, 1999-2007<sup>130</sup>**

|   |                               | Age Groups                |                           |                           |                            |                            |                            |                            |                                      |  |  |          |
|---|-------------------------------|---------------------------|---------------------------|---------------------------|----------------------------|----------------------------|----------------------------|----------------------------|--------------------------------------|--|--|----------|
|   |                               | <1                        | 1-4                       | 5-9                       | 10-14                      | 15-24                      | 25-34                      | 35-44                      | 45-54                                | 55-64                                    | 65+                                    | All Ages |
| 1 | Con- genital Anoma- lies 169  | Uninten- tional Injury 55 | Uninten- tional Injury 45 | Uninten- tional Injury 67 | Uninten- tional Injury 735 | Uninten- tional Injury 501 | Uninten- tional Injury 602 | Malignant Neoplasms 1,272  | Malignant Neoplasms 2,708            | Heart Disease 14,335                     | Heart Disease 17,374                   |          |
| 2 | SIDS 93                       | Congenital Anomalies 16   | Malignant Neoplasms 17    | Suicide 23                | Suicide 226                | Suicide 240                | Malignant Neoplasms 331    | Heart Dis- ease 942        | Heart Dis- ease 1,728                | Malignant Neoplasms 12,624               | Malignant Neoplasms 17,122             |          |
| 3 | Short Gestation 51            | Homicide 13               | Homicide 9                | Malignant Neoplasms 11    | Homicide 64                | Malignant Neoplasms 83     | Suicide 324                | Unintention- al Injury 646 | Unintention- al Injury 454           | Chronic Low. Re- spiratory Disease 4,597 | Chronic Low. Respiratory Disease 5,171 |          |
| 4 | Maternal Pregnan- cy Comp. 38 | Malignant Neoplasms 10    | Congenital Anomalies 8    | Congenital Anomalies 7    | Malignant Neoplasms 64     | Heart Disease 48           | Heart Disease 281          | Suicide 307                | Chronic Low. Respiratory Disease 442 | Cerebro- vascular 4,434                  | Cerebro- vascular 4,881                |          |
| 5 | Two Tied 29                   | Two Tied 8                | Influenza & Pneumonia 3   | Heart Disease 6           | Heart Disease 15           | Homicide 48                | Liver Dis- ease 129        | Liver Dis- ease 279        | Diabetes Mellitus 279                | Alzheimer's Disease 2,157                | Unintentional Injury 4,697             |          |

Providing an EMS response to Montana’s high injury and death rates, Montana has 107 non-transporting units, 131 ground transporting ambulance services, 5 rotor-wing flight services and 6 fixed-wing flight services.<sup>131</sup> In 2006, EMS responded to over 72,000 911 calls.<sup>132</sup> The majority of calls were for medical incidents in a patient’s home (see Table #18 below). Tables #19 and 20, show the makeup of Montana’s EMS.

**Table # 18: Reasons for Calling 911 for EMS Care<sup>133</sup>**

| Type of Incident        | Percentage |
|-------------------------|------------|
| Medical                 | 58%        |
| Motor Vehicle Crash     | 16%        |
| Trauma                  | 9%         |
| Suicide/Suicide Attempt | 5%         |
| Cardiac-Related Medical | 4%         |
| Other/Miscellaneous     | 4%         |
| Criminal Assault        | 3%         |
| Alcohol & Drug Related  | 1%         |

**Table # 19: EMS Units vs. Number of EMTs<sup>134</sup>**

| Type of Compensation | Number of Units | Number of EMTs | Percentage |
|----------------------|-----------------|----------------|------------|
| Paid                 | 79              | 2,186          | 47%        |
| Volunteer            | 181             | 2,462          | 53%        |

**Table # 20: Age and Length of Service for EMTs<sup>135</sup>**

| Years of Service | Total | Age Range (years) | Total |
|------------------|-------|-------------------|-------|
| 0-3              | 37%   | 18-29             | 20%   |
| 4-6              | 24%   | 30-39             | 25%   |
| 7-9              | 17%   | 40-49             | 28%   |
| 10 or more       | 22%   | 50 and older      | 28%   |

Aeromedical services are vital in rural areas not only to transport critically ill or injured patients from the scene or from local hospitals to specialty centers, but as the sole source of advanced life support in many areas in Montana. In addition to its 131 ground-transporting ambulance services, Montana is home to 11 air ambulance services: 6 fixed-wing and 5 rotor-wing (helicopter) services. All of Montana’s air ambulance services are located in the larger Montana communities of Billings, Great Falls, Missoula and Kalispell, except one fixed-wing air ambulance service headquartered in Glasgow, which serves the frontier population of northeast Montana. See Map #46 showing the geographic distribution of Montana’s air ambulance services. Since 2007, Billings has lost one helicopter resource and Kalispell has lost one fixed-wing air ambulance.

While the majority of Montana’s EMS calls occurred in more “populated” areas of the state with capabilities of providing advanced life support services (73%), the more isolated “frontier, rural” areas of the

state are provided Emergency Medical Services by a volunteer EMT workforce. See Graph # 47 located in Appendix C for rural EMS response times. The workforce has approximately 4,600 EMTs with slightly over half volunteers.<sup>136</sup> According to a legislative brief from 2008, there are 5 Licensed EMTs per 1,000 capita, compared to the national average of 3 per 1,000 capita.<sup>137</sup> See Map #48 for the location of Licensed EMS units in the state.

The majority (73%) of services in “rural” areas of Montana are staffed by EMS unit volunteers.<sup>138</sup> As with many other health care related fields, EMT recruitment and retention are significant issues for Montana’s EMS. While some of these “rural,” volunteer services provide limited Advanced Life Support (ALS) skills, full-time access to ALS emergency services is principally available only in “urban” areas of Montana. See Map # 50 Montana’s Advanced Life Support EMS Services.

Table #21 below illustrates the disparity between access to EMS medical care of Montana’s “urban”

**Table # 21: Proximity of Montana’s Population to EMS  
Urban vs. Rural<sup>139</sup>**

| Type of EMS Unit         | Within 5 Miles of an EMS Unit |       | Within 10 Miles of an EMS Unit |       | Within 30 Miles of an EMS Unit |       |
|--------------------------|-------------------------------|-------|--------------------------------|-------|--------------------------------|-------|
|                          | Urban                         | Rural | Urban                          | Rural | Urban                          | Rural |
| All 911 Responding units | 97%                           | 72%   | 100%                           | 85%   | 100%                           | 99%   |
| Limited ALS Care Units   | 62%                           | 50%   | 77%                            | 66%   | 100%                           | 92%   |
| ALS Care 24/7            | 83%                           | 18%   | 93%                            | 27%   | 95%                            | 55%   |

and “rural” areas, especially access to EMS advanced life support. Access to EMS care is even more limited for Montana’s Native American population and defined in Table # 22 below. Map # 49, located in Appendix C highlights the proximity of EMS units to American Indian Reservations.

**Table # 22: American Indian Population on Reservations  
and Proximity to EMS per Reservation<sup>140</sup>**

| American Indian Reservation | 5 Miles | 10 Miles | 30 Miles |
|-----------------------------|---------|----------|----------|
| Blackfeet                   | 61%     | 70%      | 99%      |
| Crow                        | 13%     | 23%      | 69%      |
| Flathead                    | 83%     | 97%      | 100%     |
| Fort Belknap                | 48%     | 49%      | 63%      |
| Fort Peck                   | 41%     | 47%      | 100%     |
| Northern Cheyenne           | 60%     | 64%      | 100%     |
| Rocky Boy                   | 32%     | 68%      | 100%     |

Montana is projected to become the 5th most aged state in the U.S. by 2025, which will significantly increase the demand for Emergency Medical Services. Considering Montana’s high accident, injury and death rates coupled with its rapidly aging population, demand for services will escalate in the years ahead.

## ***Connection & Integration: EMS Challenges***

Rural and community-based EMS must play a key part in the rural health care delivery system. Access to EMS is a critical concern for residents of rural communities in Montana and across the country. EMS should not only weave itself into the local health care system but into the fabric of the community itself. Communities must be involved to strengthen and support their local EMS systems.

Rural/frontier EMS providers are acutely aware of the challenges that they face including high demand-24/7, reliance on volunteer workforce, stringent education and reporting requirements, aging workforce, reimbursement and regulatory issues, and decreasing local health resources. Simply having an ambulance service in town does not mean the service is well-integrated into the community. Members of the community at large, and even its leaders, do not always understand the level and scope of care that EMS provides.<sup>141</sup> The lack of an accurate understanding of what local EMS is providing, what other options exist, and what the community's cost would be for such options, is a barrier to community integration of EMS. Many rural/frontier services have come to the brink of extinction, or have closed their doors, before a community discussion has taken place.<sup>142</sup>

The further a patient is from an emergency medical facility, the more that patient stands to benefit from higher levels of local emergency medical intervention. As some services are less available to offer sophisticated resuscitation care, dependence for such intervention falls upon local EMS. Paradoxically, advanced life support (ALS) levels of EMS care are less likely to be available in the rural/frontier setting.<sup>143</sup>

## ***Connections & Integrations: EMS Recommendations***

- Consider helping EMS providers in CAH communities obtain reliable, diverse and up-to-date distance learning opportunities, including geriatric-specific training.
- Support and encourage migration away from a volunteer EMS provider system toward a system which is integrated with CAHs and includes paramedics.
- Encourage EMS-based community health services program development through cataloguing existing successful practices and exploration of opportunities for expanded EMS roles in primary care or public health.
- Objectively assess and publicly discuss the level and type of EMS care available in rural communities to build an effective EMS presence as well as alternative methods of delivering advanced life support back-up, and the formation of regional cooperatives for medical oversight, quality improvement, data collection and processing.
- Continue working with the State of Montana trauma facility designation staff to assist CAHs in meeting trauma facility standards to improve emergency room treatment and all phases of patient care.

# Technology In Montana's Health Care

## Telehealth

In the *Quality Through Collaboration: The Future of Rural Health* report, telehealth is defined as a broad set of applications to support long-distance clinical care, consumer and professional health-related education, public health and electronic health records.<sup>144</sup>

Montana was an “early adopter” of telehealth technology to bridge the distance barrier and provide access to medical care for rural populations. The Eastern Montana Telemedicine Network, a hub-and-spoke, interactive, audio-video telemedicine network centered at the Billings Clinic, began operation in 1992, one of the first telemedicine networks in the nation. Today, four additional networks - the Fiber Optic Rural TeleHealth (FORTH) network in northeast Montana, the REACH Montana network at Benefis Healthcare in Great Falls, the Partners in Health network at St. Vincent Hospital in Billings and Videolink of St. Peters Hospital in Helena - tie many of Montana's rural communities to tertiary medical centers. However, most telemedicine sites are located in eastern and central Montana. There are coverage gaps in western Montana due to the lack of well-developed telehealth/telemedicine networks. Even in eastern and central Montana, there are a number of very small frontier communities with CAHs that do not have telemedicine sites.<sup>145</sup>

## Information Technology

According to *A Roadmap for Adoption of Health Information Technology in Rural Communities*, advances in information technology also hold great promise for helping rural residents and medical providers overcome some of the problems of distance and personnel shortages.<sup>146</sup>

The following existing and emerging technologies provide Montana's rural health care providers with linkages to patients and larger health care systems:

- Remote monitoring of patient vital signs.
- Video consults with off-site providers (traditional telemedicine application).
- Computed Radiography (CR) & Picture Archiving & Communication Services (PACS) teleradiology systems.
- Remote pharmacy applications.
- Continuing Medical Education and Patient Education.
- Electronic Health Record (EHR) applications.
- Bridging Interfaces.
- EMS Pre-Hospital Data System.
- Surgical procedures using robotic assistance.

Montana's communities are in various stages of examining and adopting these technologies. Some very small frontier communities don't have access to telemedicine systems while many (but not all) rural hospitals have installed CR and PACS Teleradiology capabilities. A few towns without pharmacists are using remote pharmacy links. Larger rural hospitals are in the early stages of implementing electronic health record (EHR) systems. Several hospitals in Montana have demonstrated the use of robotically-assisted surgery. As the *Quality Through Collaboration: The Future of Rural Health* report states, information technology plays a crucial role in ensuring quality of care in rural areas like Montana. Expensive EHR systems, electronic prescribing and drug interaction monitoring systems, bar coding systems for managing medi-

cations and bedside charting and patient monitoring systems are all much-needed tools to provide high-quality care in Montana’s rural communities.

### Health Information Technology Workforce

The implementation of health information technology (HIT) has significantly increased across Montana especially in the rural communities. Federal incentives and reimbursement programs may be available to assist health care providers and CAHs to offset the cost associated with these implementations. The federally-funded regional extension center was also created to help expand the implementation and use of HIT. These two federal programs created a large demand for a workforce skilled in HIT. This necessary workforce does not exist in significant numbers in Montana, and in most rural settings it is all but nonexistent.

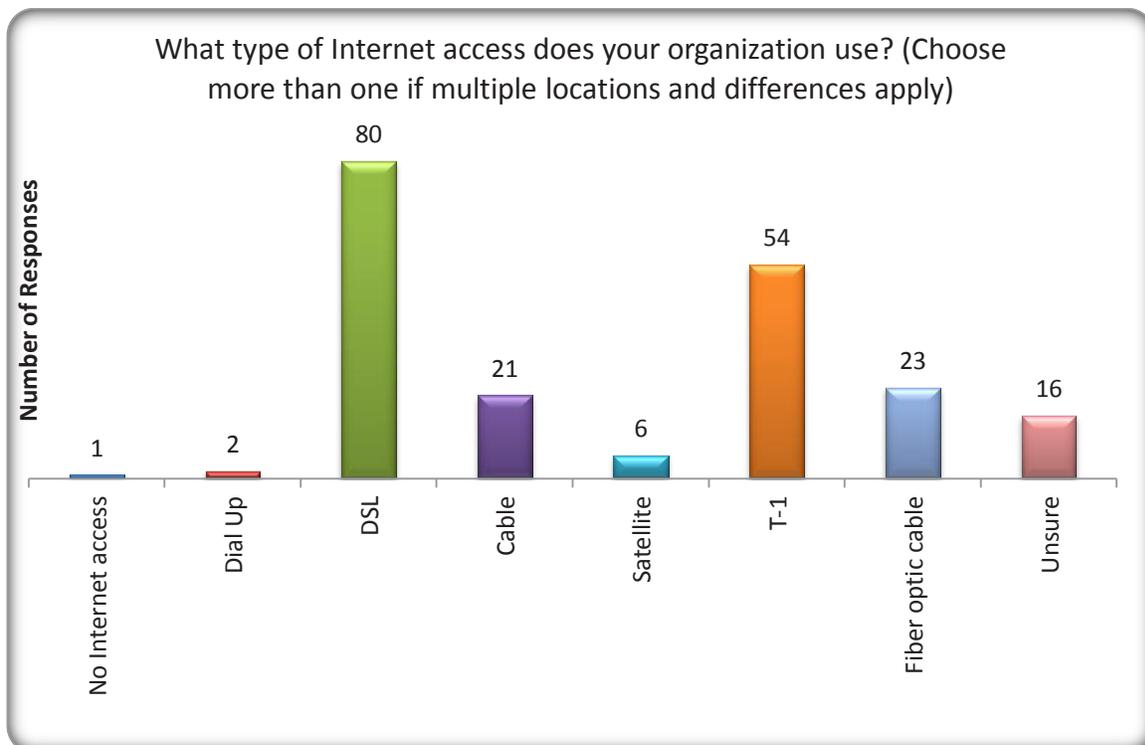
The Montana health care community will need hundreds of these individuals in the near future, not only in the cities but in rural settings as well.

The universities have established curriculums that will over time produce this valuable workforce; however, this will take several years for supply to meet the demand. The regional extension center implemented an internship program to assist in HIT workforce development but students lack the fundamental background to enter the program.

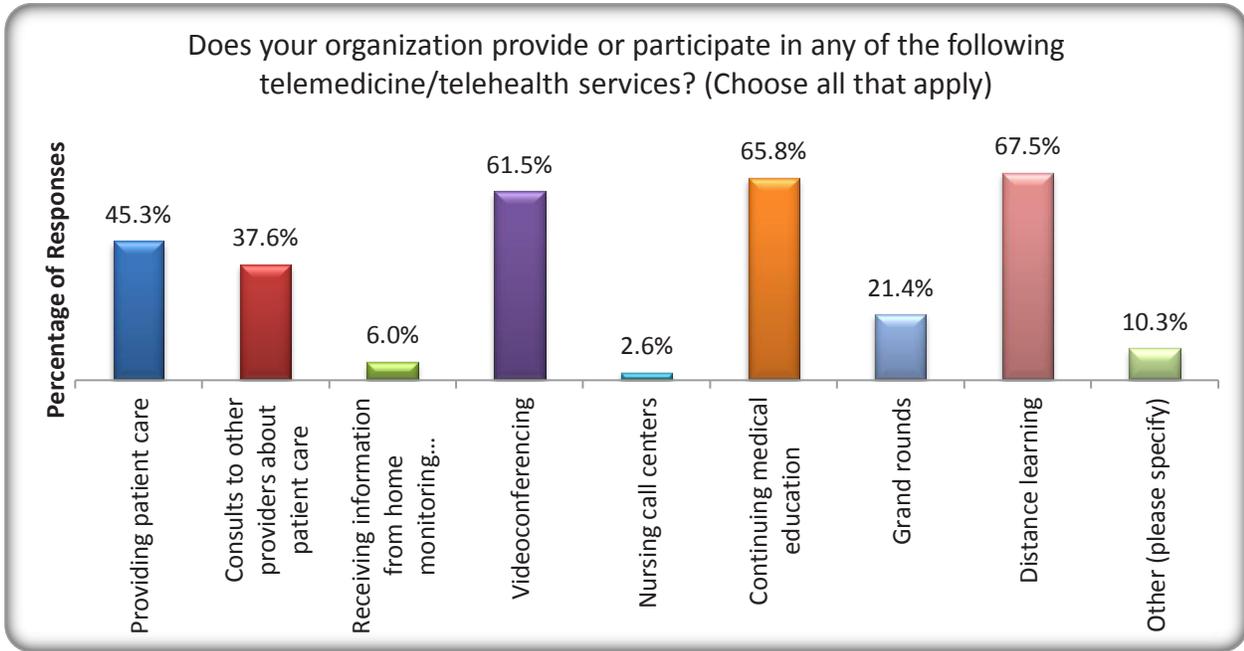
The lack of this skilled workforce distributed across Montana will limit Montana’s ability to take advantage of HIT and the improvements in health care quality that HIT can provide for many years to come.

The following graphs (graph # 20 through # 33) were provided by HealthShare Montana and originate from the *Health Information Technology and Health Information Exchange Environmental Scan* (January 2011).<sup>147</sup>

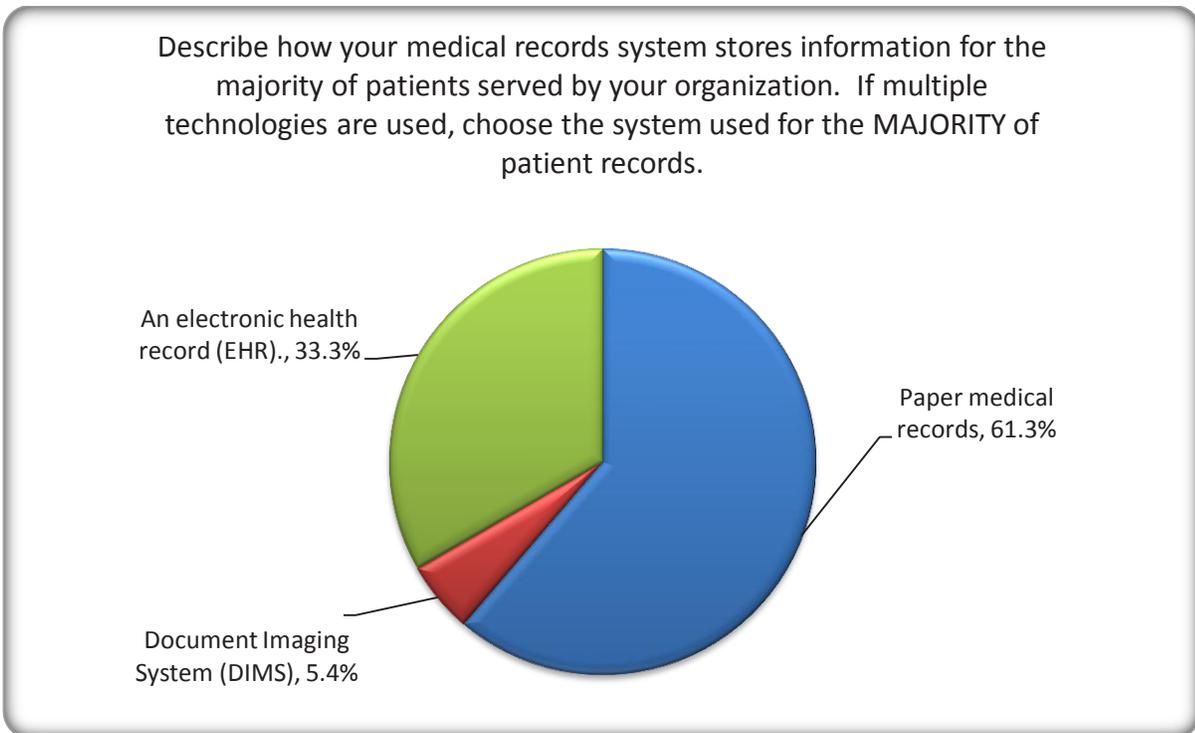
Graph # 23: Internet Access



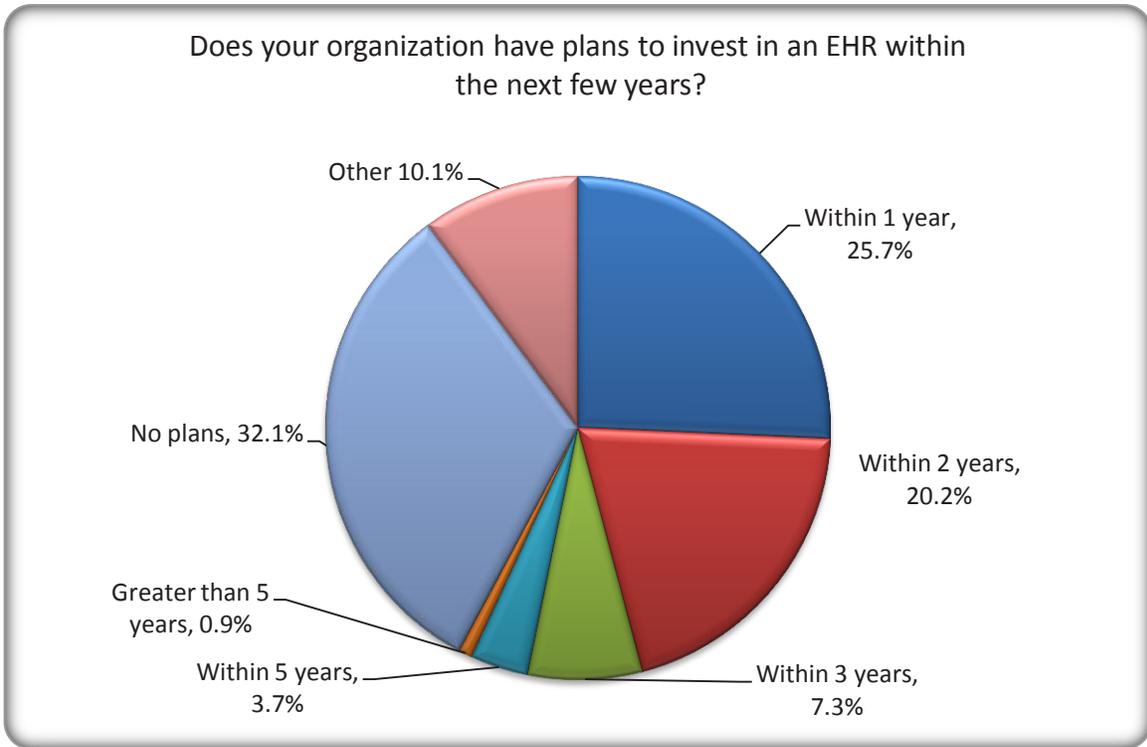
Graph # 24: Providing Telemedicine/Telehealth



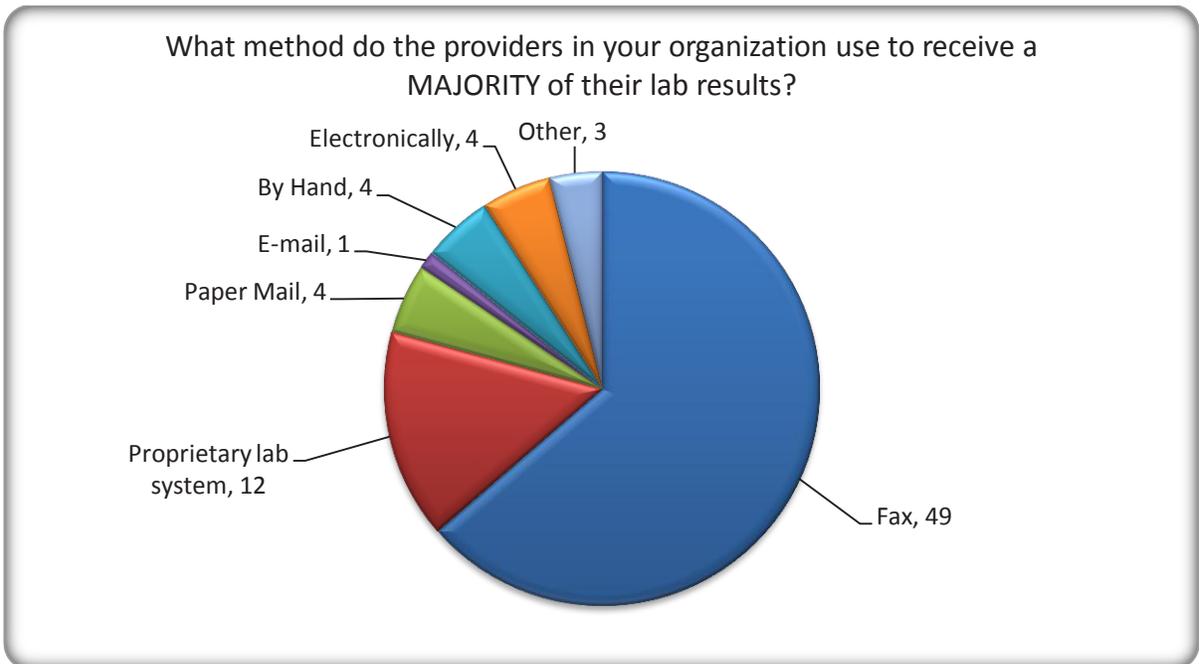
Graph # 25: Medical Records



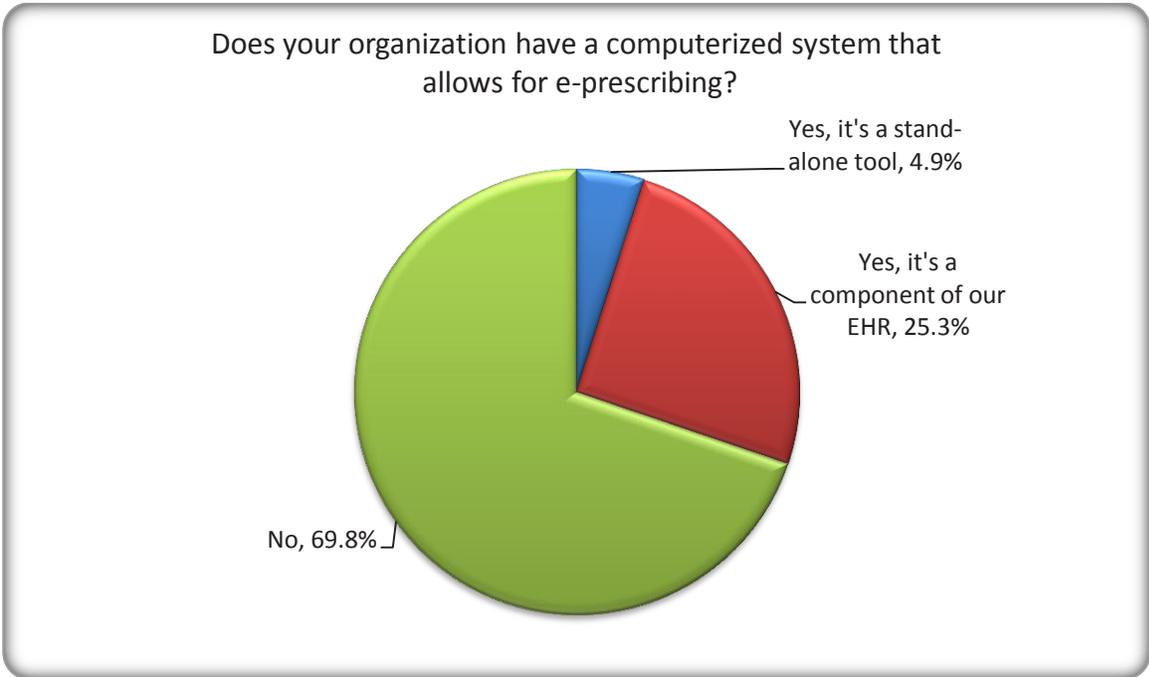
Graph # 26: Plans to Invest in EHR



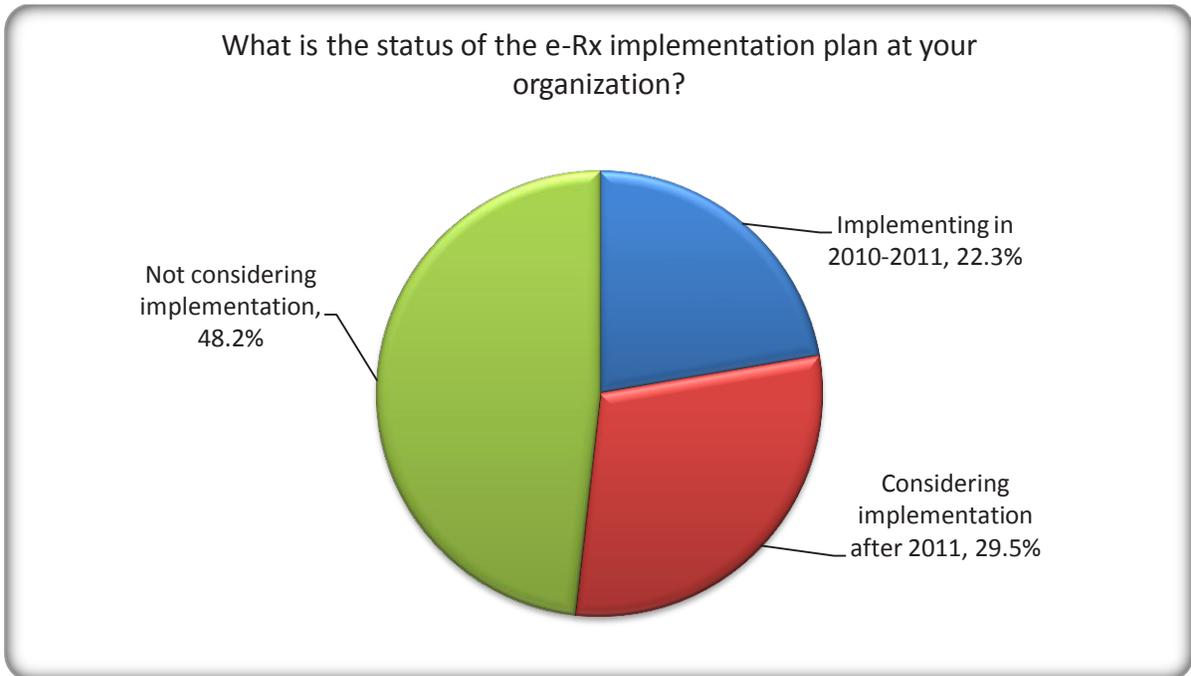
Graph # 27: Method to Receive Lab Results



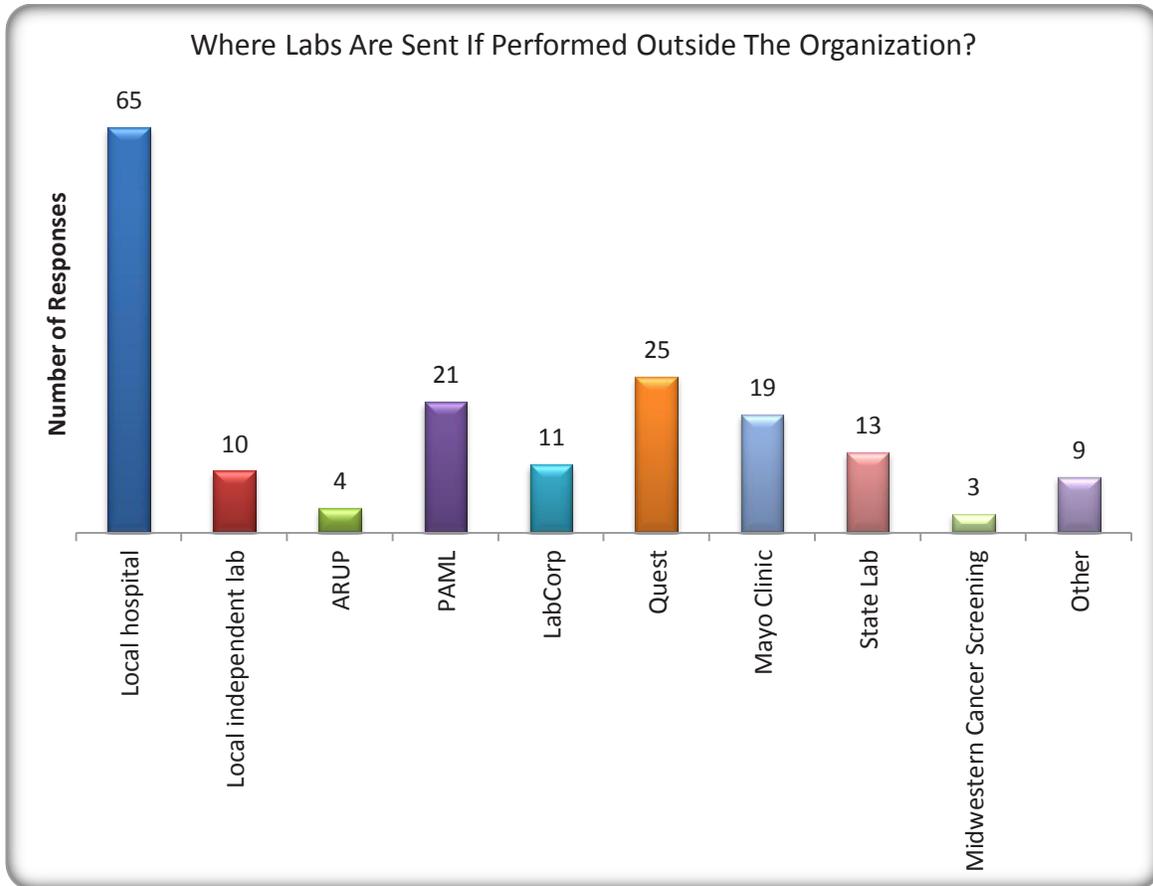
Graph # 28: Do You Have a System for E-Prescribing?



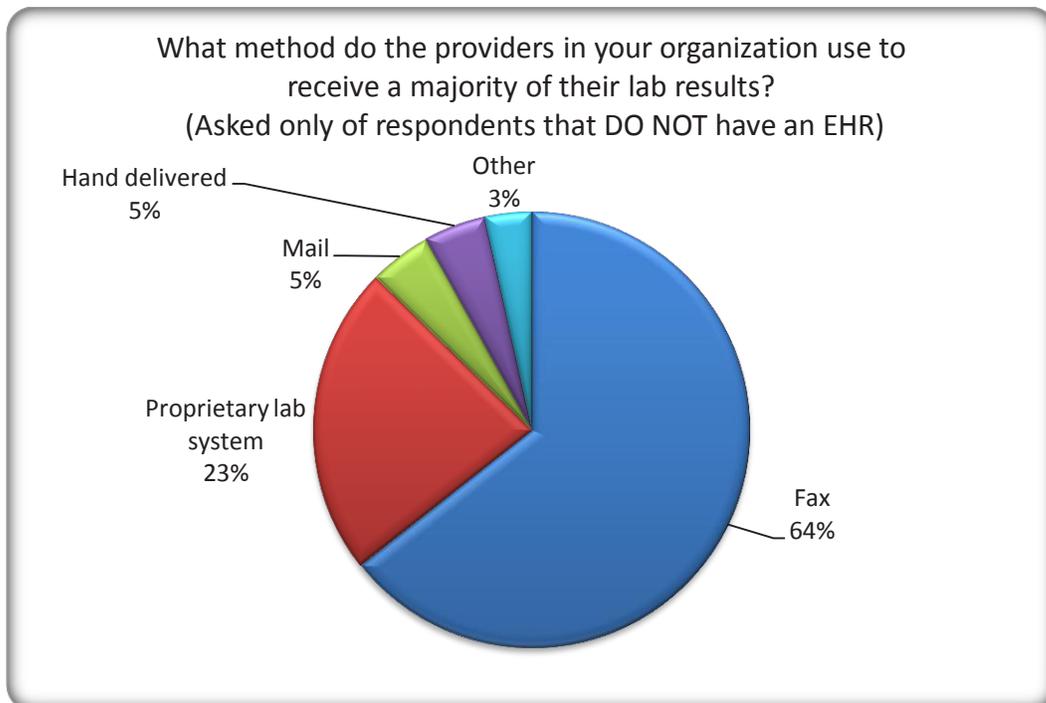
Graph # 29: Status of e-Rx Implementation at your Organization



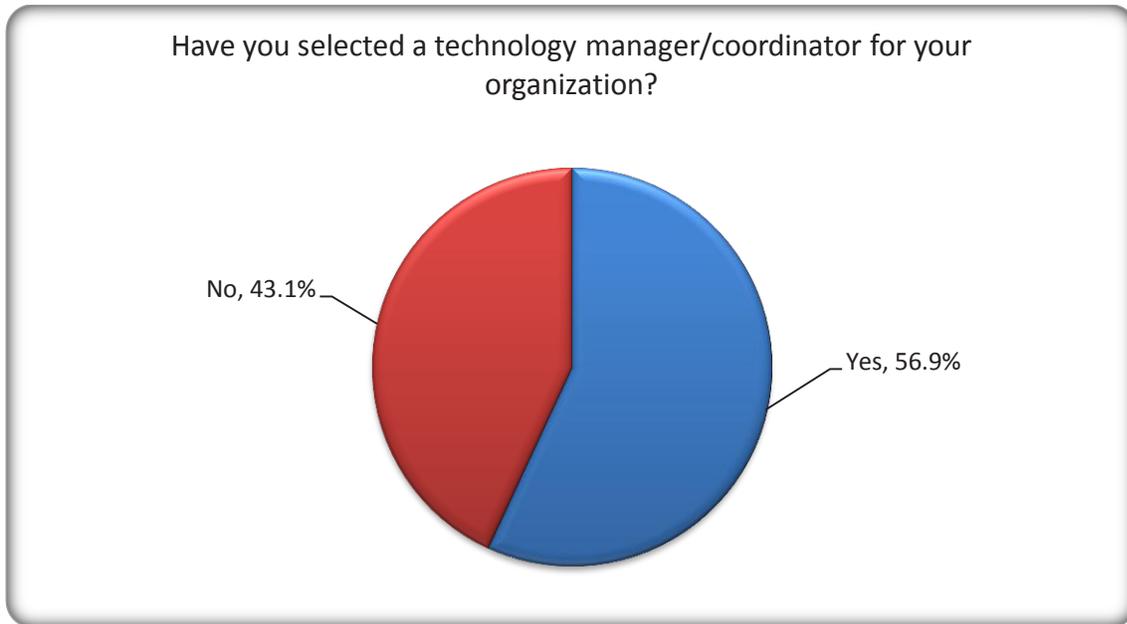
Graph # 30: Where are Lab Orders Sent?



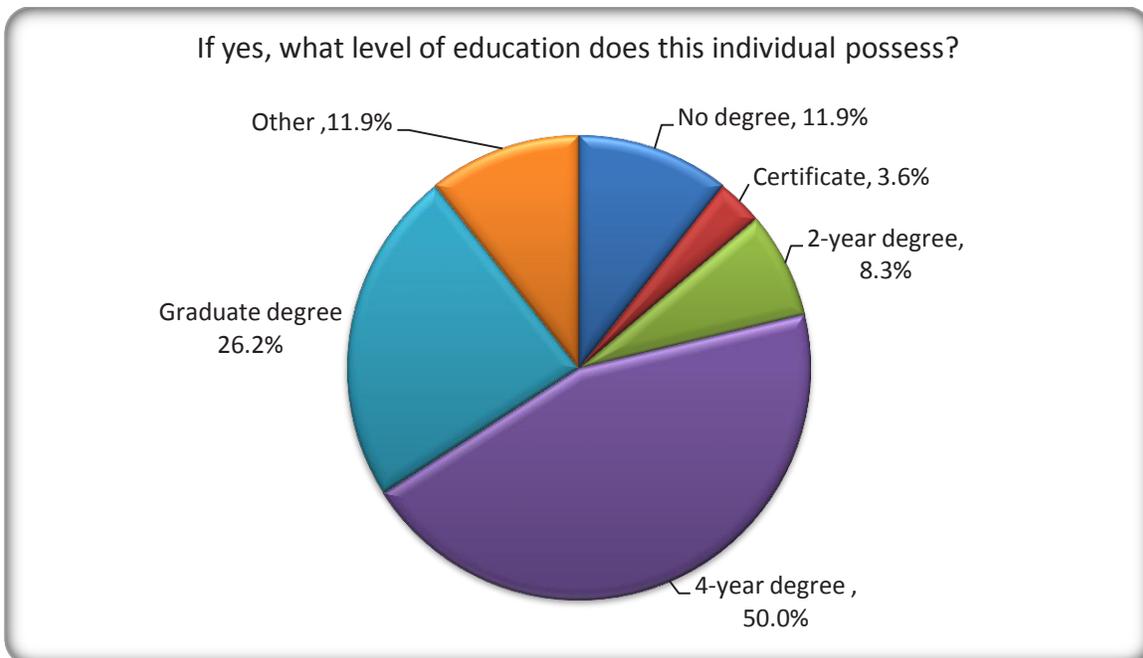
Graph # 31: Method to Receive Lab Results



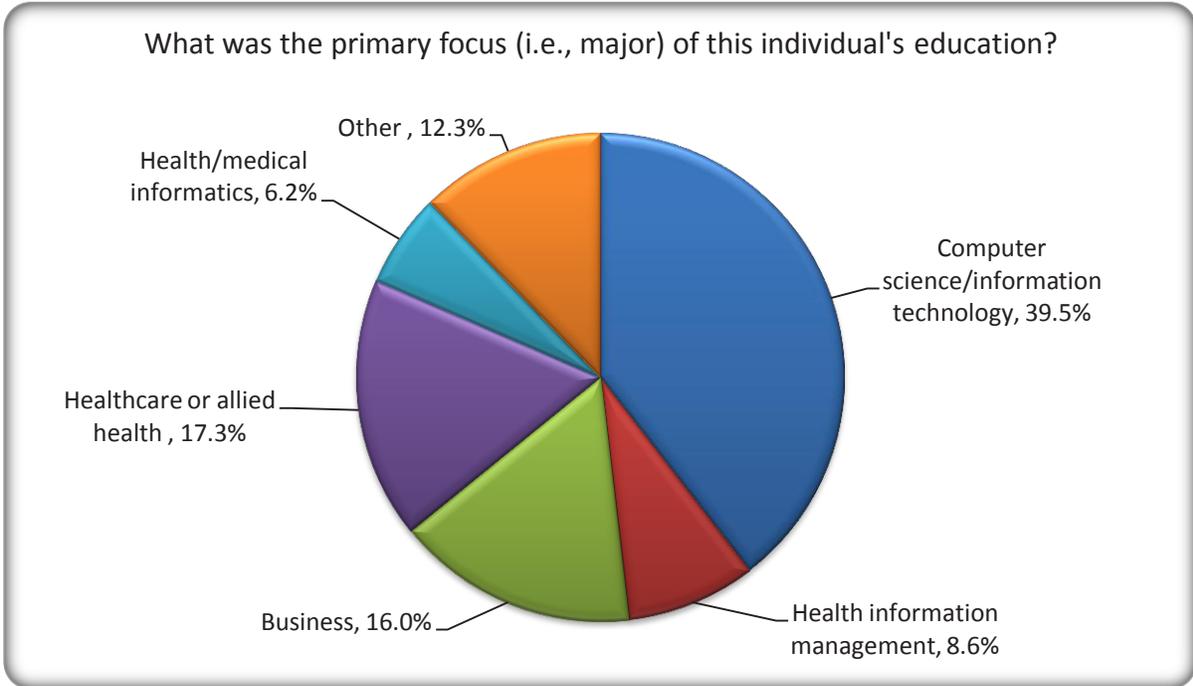
Graph # 32: Have You Selected a Technology Manager/Coordinator?



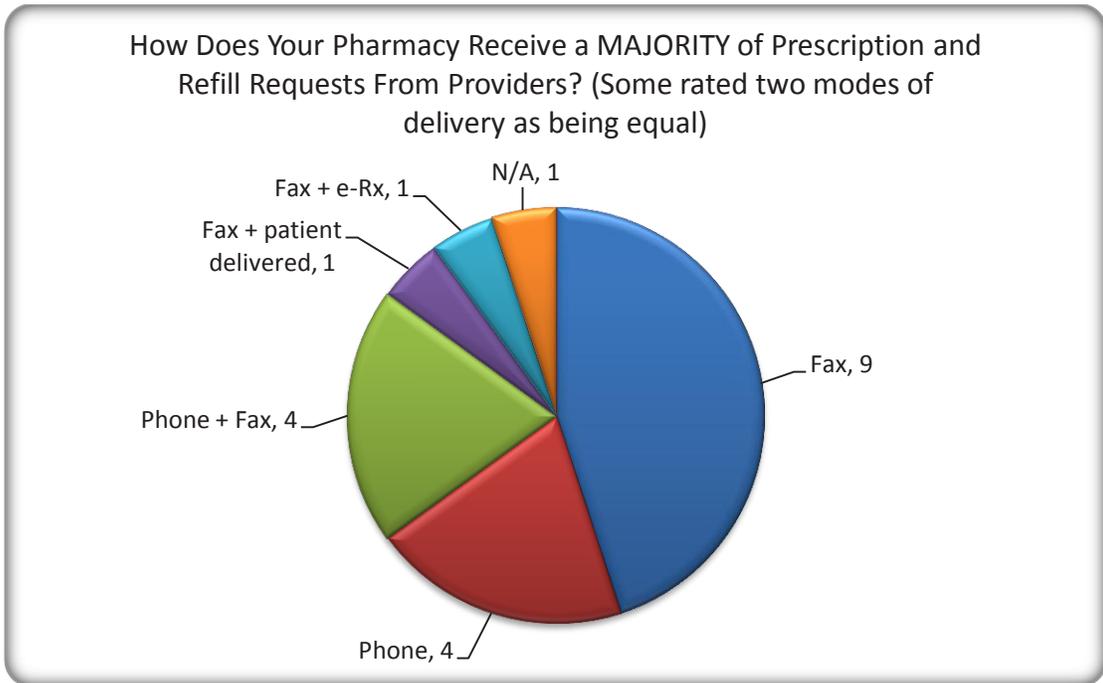
Graph # 33: Level of Education for Technology Manager/Coordinator



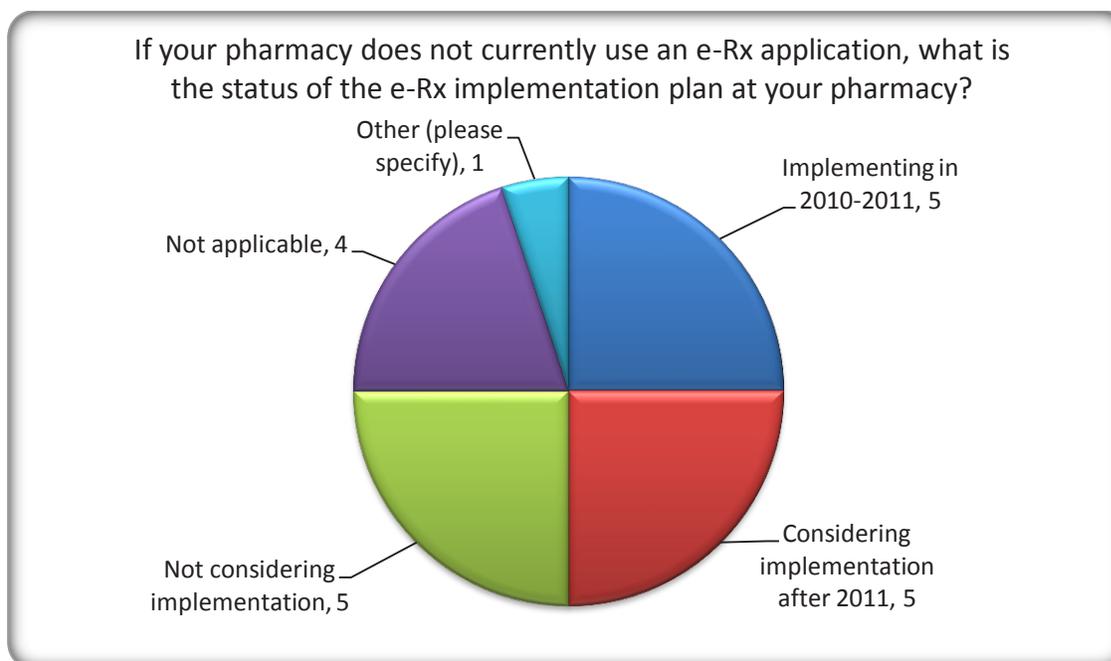
Graph # 34: Education Focus for Technology Manager/Coordinator



Graph # 35: How Does Your Pharmacy Receive Prescriptions/Refills?



Graph # 36: Status of e-Rx Implementation



## Technology Challenges

Understanding that there are many advantages as well as obstacles associated with greater use of EHRs, Congress included in the American Recovery and Reinvestment Act of 2009 (ARRA) measures and funding to implement the widespread adoption and “meaningful use” of health IT. However, what the law and regulations fall short in providing, is the kind of help many small rural hospitals need to achieve meaningful use. Unfortunately for CAHs, the ARRA monetary incentives cover only part of the cost of software and hardware, not the installation, technical or support services which is typically two to three times the cost of the equipment and financially too much for many to handle.<sup>148</sup> For many small, rural hospitals with modest revenues and financial pools to draw from, the meaningful use criteria are simply out of reach. To date, “less than one percent of rural hospitals have adopted EHR systems that would meet the meaningful use requirements with certified systems.”<sup>149</sup> ARRA’s implementation hurdles are especially great for rural areas that typically lack necessary IT professionals, specifically those with health care backgrounds. Yet, ARRA’s ambitious goals must be met in a short time frame and hospitals that do not meet meaningful use criteria by the FY 2015 deadline will incur a financial penalty in their Medicare payments.<sup>150</sup> The American Hospital Association’s (AHA) TrendWatch (April 2011) states, “These financial penalties are expected to affect rural hospitals disproportionately as they are less likely to have the staff or financial capacity to meet these timelines.”<sup>151</sup>

In addition, the IT/HIT infrastructure has weaknesses that must be addressed. For example, incomplete broadband coverage and the serious shortage of trained IT/HIT workers threaten the success of EHR/EMR implementation. It will also be crucial to achieve interoperability between different systems or platforms.

## *Technology Recommendations*

- Consider hosting a rural technology showcase inviting expert (non-vendor) speakers to highlight practical, cost-effective technology solutions for Montana's frontier and rural CAHs.
- Assist CAHs with education and planning for evolving regional and statewide Health Information Technology (HIT) integration. Bring together Montana's health care stakeholders to discuss and coordinate HIT efforts. HIT stakeholders may include CAH, clinic, pharmacy, nursing home and home health EHR systems; regional teleradiology and telehealth networks as well as the statewide pre-hospital EMS data system and trauma registry.
- Encourage basic connectivity/networking between very small, frontier CAHs and larger CAHs as well as tertiary medical centers.
- Develop peer support groups of hospital IT staff, identify and share best HIT practices and disseminate information about lessons learned.

# Networks

## *Health Care Networks: Framework for Success*

**A**s the American health industry grows increasingly complex and costly, dramatic changes are being mandated by both payers and consumers. These abrupt changes will tax the resources, ingenuity, and resiliency of all health care organizations and small rural hospitals, along with their communities, will be severely tested by these changes.<sup>152</sup> Their survival may depend on the ability to collaborate and work together as networks. Partnering for survival is a centuries-old characteristic of people who choose to live in rural America and Montana's health care organizations are no exception. Rural hospitals have created strategic partnerships with larger hospitals or with other CAHs. These alliances allow smaller hospitals a venue to broaden their services as well as improve quality by leveraging shared resources through telehealth and telepharmacy when these services might not otherwise be available locally.<sup>153</sup> As a result, there are many health care based networks within the state. Finding common ground, cooperating and working on improving the efficiency and quality of medical care to rural Montanans are important goals that are facilitated through health care networks and statewide organizations.

Hospital networks exist for one or more of the following reasons:

- To create economies of scale and to obtain discounts through shared volume:  
**MHA Ventures, VHA, Monida Health Network, Montana Health Network.**
- To gain access to federal, state, and private foundation grants:  
**MHREF, Montana Health Network, NMHA, PIN.**
- To enhance the effectiveness of their collective advocacy:  
**MHA, MPCA, MHCA.**
- To create shared business ventures and products to produce revenue:  
**MHA Ventures, Monida Health Network, Montana Health Network.**
- To gain access to shared technical expertise, education and information:  
**PIN, NMHA, Billings Clinic Affiliates, MHA, MTA (See Map #51),  
STAC and RTAC, Monida Health Network, Montana Health Network, HSM**
- To cooperatively address a community need:  
**STAC and RTAC.**
- To enable peer support among key hospital staff:  
**PIN, NMHA, MHA.**
- To build an organizational vehicle that can rapidly and collaboratively address future challenges and opportunities:  
**ALL.**

Health care and hospital-related networks:

- **MHA...an Association of Montana Health Care Providers (MHA)**
- **Montana Rural Healthcare Performance Improvement Network (PIN)**

- **Northcentral Montana Healthcare Alliance (NMHA)**
- **Billings Clinic Affiliate network**
- **Montana Primary Care Association (MPCA)**
- **State and Regional Trauma Advisory Councils (STAC and RTAC)**

**Health care and hospital group purchasing networks:**

- **Montana Health Network**
- **Monida Health Network**
- **MHA Ventures**

**Telehealth and health information networks:**

- **Montana Telehealth Alliance (MTA)**
- **HealthShare Montana (HSM)**
- **Health Information Exchange of Montana (HIEM)**
- **Partners in Health Telehealth Network**

Map #51 details Montana’s Telehealth Alliance and Map #52 depicts Montana’s three trauma regions.

### ***Network Challenges***

While Montana’s networks serve many rural hospital needs, the potential for duplication exists, which wastes precious resources. Pieces of the network ‘pie’ can only be sliced so thin. Members need to be familiar with network strategic plans and understand how their facilities fit into the overall network picture. Network effectiveness relies on the active involvement of its members in development of services, which is critical to meeting member organization needs. The desire for local autonomy needs to be made to work for the network through the promotion of collaborative solutions that enhance self-interest. Finally, network development can look deceptively easy but collaborative processes require time. Enlightened self-interest is necessary for organizations to work together. By joining together and working on Montana’s rural health care challenges, networks facilitate solutions and better patient care for all Montanans.

### ***Network Recommendations***

- It is important for Montana’s networks to understand and respect each other.
- Network members must perceive and receive value from the organizations to which they prescribe.
- Complex challenges, such as the implementation of an EMR, benefit from the innovation that comes from groups of like-interest entities coming together to share common problems.
- Network members must have the ability to separate their individual goals from the common goals of the network and the vision to see the potential benefits of joint action.
- Organizations implicitly recognize the shortage of technical resources in rural communities and the need to join forces to compete and prosper.<sup>154</sup>

# APPENDIX A

## Montana Rural Health Plan Task Force Members

## Montana Rural Health Plan Task Force Members

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# APPENDIX B

## Acronyms, Abbreviations and Definitions

## ACRONYMS, ABBREVIATIONS, and DEFINITIONS

|          |   |
|----------|---|
| ACA      | <i>The Patient Protection and Affordable Care Act of 2010</i> or Affordable Care Act  |
| ADE      | Adverse Drug Event  |
| AHEC     | Area Health Education Center  |
| AHRQ     | Agency for Healthcare Research & Quality  |
| ALS      | Advanced Life Support   |
| ATLS     | Advanced Trauma Life Support  |
| BLS      | Basic Life Support  |
| BRFSS    | Behavioral Risk Factor Surveillance System data   |
| CAH      | Critical Access Hospital  |
| CART     | CMS Abstract and Reporting Tool ( <i>a tool used for the collection and analysis of quality improvement data</i> )  |
| CDC      | Centers for Disease Control   |
| CEIC     | State of Montana Department of Commerce/Census and Economic Information Center  |
| CEO      | Chief Executive Officer   |
| CGME     | Council on Graduate Medical Education   |
| CHC      | Community Health Center   |
| CHSD     | Community Health Services Development   |
| CIT      | Critical Illness & Trauma Foundation  |
| CME      | Continuing Medical Education  |
| CNA      | Certified Nursing Assistant   |
| COTA     | Certified Occupational Therapy Assistant  |
| CPOE     | Computerized Physician Order Entry  |
| CR       | Computed Radiography  |
| DON      | Director of Nursing   |
| ED       | Emergency Department  |
| EHR      | Electronic Health Record  |
| EMR      | Electronic Medical Record   |
| EMS      | Emergency Medical Services  |
| EMT      | Emergency Medical Technician  |
| EMTN     | Eastern Montana Telemedicine Network  |
| FORTH    | Fiber Optic Rural TeleHealth Network  |
| FP       | Family Practice or Family Practitioner (Physician)  |
| FQHC     | Federally Qualified Health Center ( <i>FQHCs are community-based organizations that provide comprehensive primary care and preventive care, including health, oral, and mental health/substance abuse services to persons of all ages, regardless of their ability to pay</i> )   |
| Frontier | Population area with 6 persons or less per square mile  |
| HF       | Heart Failure   |
| HHS      | U.S. Department of Health and Human Services  |
| HIEM     | Health Information Exchange of Montana  |
| HIT      | Health Information Technology   |
| HLQAT    | Hospital Leadership Quality Assessment Tool   |
| HPSA     | Health Professional Shortage Area [ <i>HPSAs are designated by HRSA as having shortages of primary medical care, dental or mental health providers and may be geographic (a county or service area), demographic (low income population) or institutional (comprehensive health center, federally qualified health center or other public facility)</i> ] |

## ACRONYMS, ABBREVIATIONS, and DEFINITIONS

(Continued)

|          |   |
|----------|---|
| HR       | Human Resources   |
| HRSA     | U.S. Department of Health & Human Services/Health Resources and Services Administration   |
| HSM      | HealthShare Montana (Montana's Health Information Exchange)   |
| IHI      | Institute of Healthcare Improvement   |
| IHS      | Indian Health Service   |
| ILS      | Intermediate Life Support   |
| IOM      | Institute Of Medicine   |
| IT       | Information Technology  |
| Lean     | <i>a set of tools, concepts and practices that help improve quality of care while reducing the cost. This is accomplished by reducing errors, shortening cycle times and eliminating waste.</i>   |
| MAF      | Medical Assistance Facility   |
| MHA      | MHA...An Association of Montana Health Care Providers   |
| MHCA     | Montana Health Care Association   |
| MHN      | Montana Health Network  |
| MHREF    | Montana Health Research & Education Foundation  |
| MHTA     | Montana Healthcare Telecommunications Alliance  |
| MORH     | Montana Office of Rural Health  |
| MPCA     | Montana Primary Care Association  |
| MPRH     | Mountain-Pacific Quality Health   |
| MRSA     | Methicillin-resistant Staphylococcus aureus ( <i>bacteria that has developed resistance to many different antibiotics and troublesome in hospitals where patients with open wounds, invasive devices and weakened immune systems are at greater risk of infection than the general public</i> ) |
| MT DPHHS | Montana Department of Public Health & Human Services  |
| MUA      | Medically Underserved Area (MUA/ <i>Populations are areas or populations designated by HRSA as having: too few primary care providers, high infant mortality, high poverty and/or high elderly population</i> )   |
| MVA      | Motor Vehicle Accident  |
| NHSN     | National Healthcare Safety Network ( <i>a voluntary, secure, internet-based surveillance system that integrates and expands legacy patient and health care personnel safety surveillance systems</i> )  |
| NMHA     | Northcentral Montana Healthcare Alliance  |
| ORHP     | Office of Rural Health Policy   |
| PACS     | Picture Archiving Communication System  |
| PCO      | Primary Care Office   |
| PDSA     | Plan Do Study Act ( <i>A system for testing change in the work setting by planning, doing, studying and acting on what is learned. This is the scientific method used for action-oriented learning.</i> )   |
| PIN      | Performance Improvement Network   |
| POA      | Present On Admission  |
| PPS      | Prospective Payment System  |
| PT       | Physical Therapist  |

## ACRONYMS, ABBREVIATIONS and DEFINITIONS

(Continued)

|                         |   |
|-------------------------|---|
| PTA                     | Physical Therapy Assistant  |
| QIO                     | Quality Improvement Organization ( <i>QIO's Program is to improve the effectiveness, efficiency, economy and quality of services delivered to Medicare beneficiaries</i> )  |
| REACH                   | Realizing Education and Community Health Telehealth Network   |
| REC                     | Regional Extension Center ( <i>REC is an organization that has received funding under the Health Information Technology for Economic and Clinical Health Act (HITECH Act) to assist health care providers with the selection and implementation of electronic health record technology</i> )  |
| RHC                     | Rural Health Clinic ( <i>RHC is a clinic which is located in a rural area designated as a shortage area, i.e., an area experiencing a shortage of either personal health services or primary care manpower</i> )  |
| ROSC                    | Rural Organization Safety Culture   |
| RTAC                    | Rural Trauma Advisory Councils (regional) ( <i>RTAC with facility representatives from each of the three Montana Trauma Regions meeting quarterly to identify specific regional trauma care needs and to define corresponding strategies, propose trauma care guidelines to the State Trauma Care Committee and to develop Regional Trauma Care plans</i> )                     |
| SBAR                    | Situation Background Assessment Recommendation ( <i>is a technique used to improve communication between members of a health care team</i> )  |
| SCIP                    | Surgical Care Improvement Project   |
| SRHP                    | State Rural Health Plan   |
| STAC                    | State Trauma Advisory Council   |
| Tertiary Medical Center | A major hospital with a full complement of medical services including specialty & sub-specialty physicians plus diagnostic & treatment capabilities   |
| WCC                     | Wound Care Certification  |
| WWAMI                   | Washington-Wyoming-Alaska-Montana-Idaho (medical school for 5 states) ( <i>The cooperative medical education program for Washington, Wyoming, Alaska, Montana and Idaho, designed to make medical education accessible to students in the mostly rural Pacific Northwest by sharing existing facilities and personnel in universities and communities in the WWAMI states</i> ) |

# APPENDIX C

## Maps and Graphs

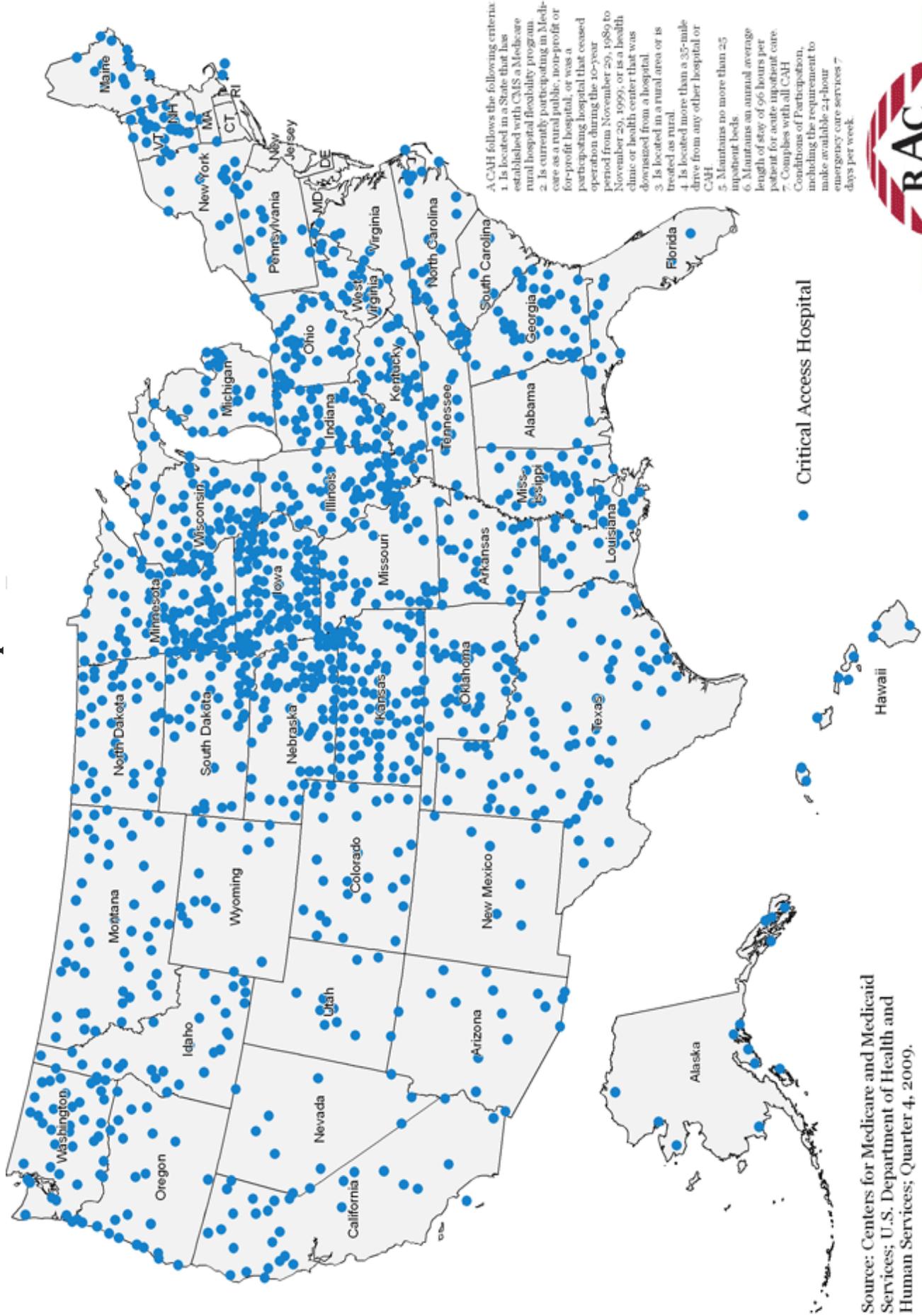






# Critical Access Hospitals in the U.S.<sup>158</sup>

Map # 40



- ACAH follows the following criteria:
1. Is located in a State that has established with CMS a Medicare rural hospital flexibility program
  2. Is currently participating in Medicare as a rural public, non-profit or for-profit hospital, or was a participating hospital that ceased operation during the 10-year period from November 29, 1980 to November 29, 1999; or is a health clinic or health center that was downsized from a hospital
  3. Is located in a rural area or is treated as rural
  4. Is located more than a 35-mile drive from any other hospital or CAH
  5. Maintains no more than 25 inpatient beds
  6. Maintains an annual average length of stay of 96 hours per patient for acute inpatient care
  7. Complies with all CAH Conditions of Participation, including the requirement to make available 24-hour emergency care services 7 days per week.

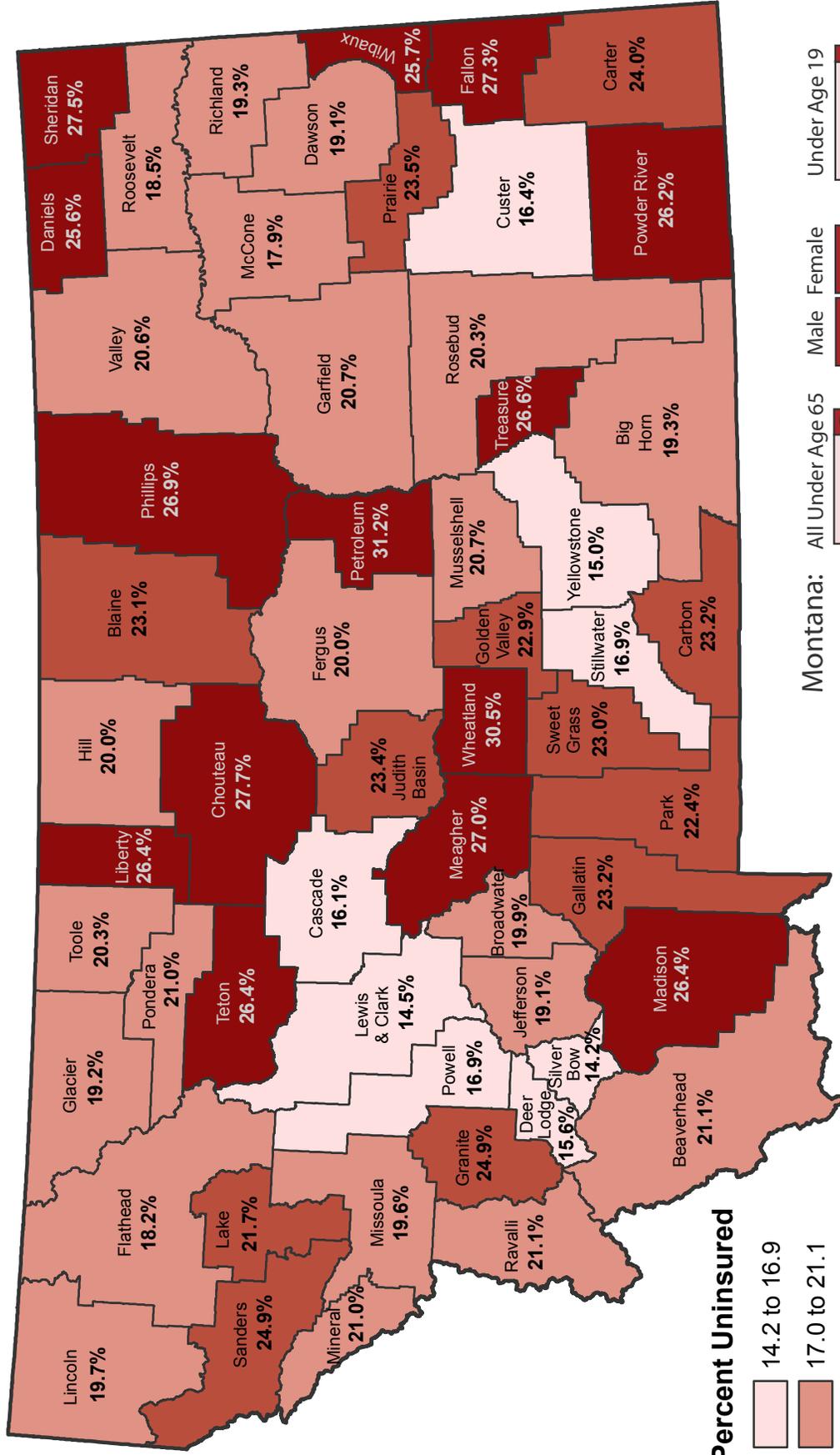
Source: Centers for Medicare and Medicaid Services; U.S. Department of Health and Human Services; Quarter 4, 2009.

Note: Alaska and Hawaii not shown to scale

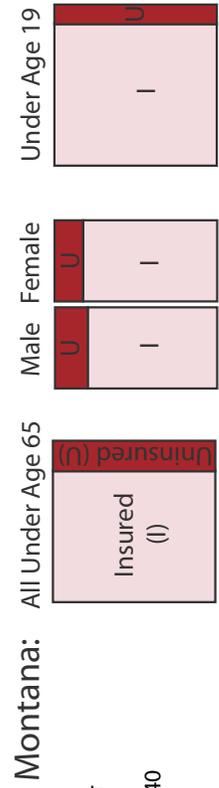
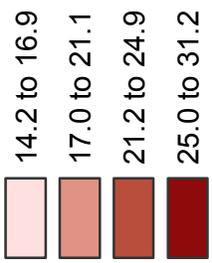




# Montana 2007 Health Insurance Coverage Status: Uninsured Percent of County Population Under 65 Without Health Coverage<sup>160</sup>

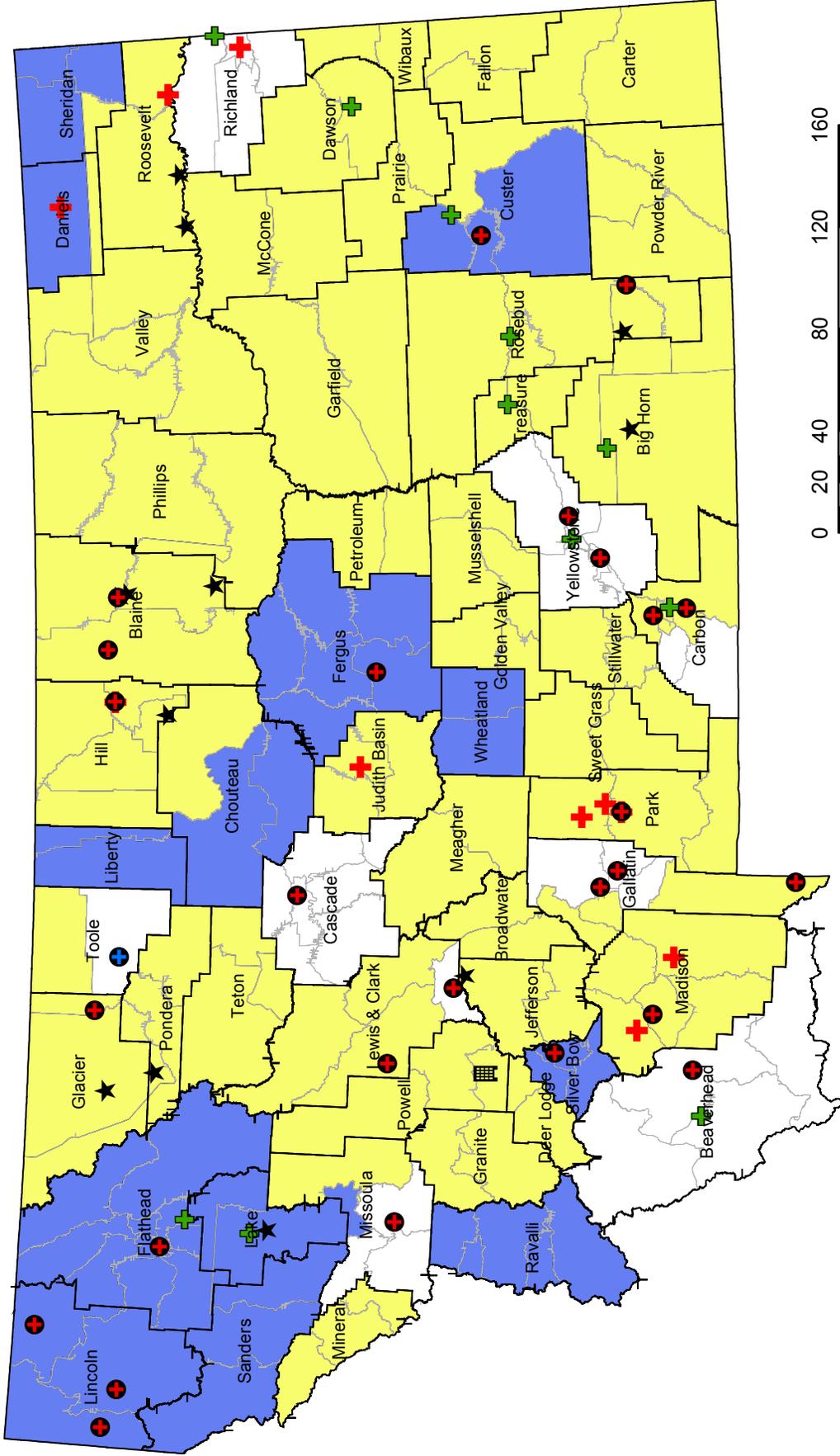


## Percent Uninsured



Map by: Census & Economic Information Center  
 Montana Department of Commerce  
 301 S. Park Ave, Helena, MT 59601 406-841-2740  
 email: ceic@mt.gov http://ceic.mt.gov

# Montana Primary Care Health Professional Shortage Areas (HPSAs)<sup>161</sup>



**Facilities Designated**

- Community Health Center
- Federally Qualified Health Center LAL
- Migrant Health Care Center
- ★ IHS/Tribal Facility
- + Designated RHC's
- Montana State Prison

**HPSA Designation**

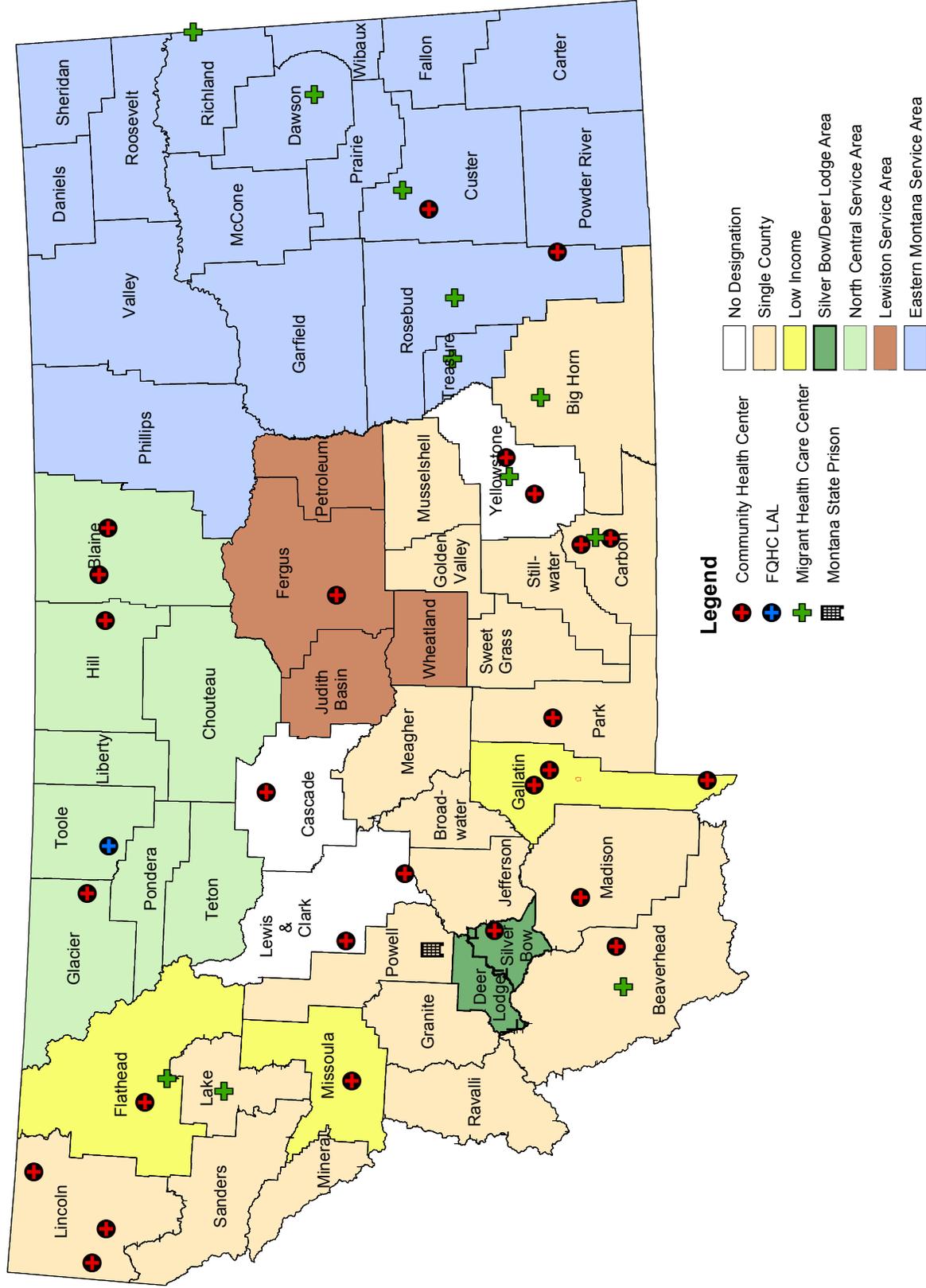
- No Designation
- HPSA Geographic Area Designation
- HPSA Population Group (low income)



Data Source: MT DPHHS Primary Care Office, HPSA Primary Care data, March 2011 (For current designation data please visit: <http://bhpr.hrsa.gov/shortage/>)

# Montana Mental Health Professional Shortage Areas<sup>162</sup>

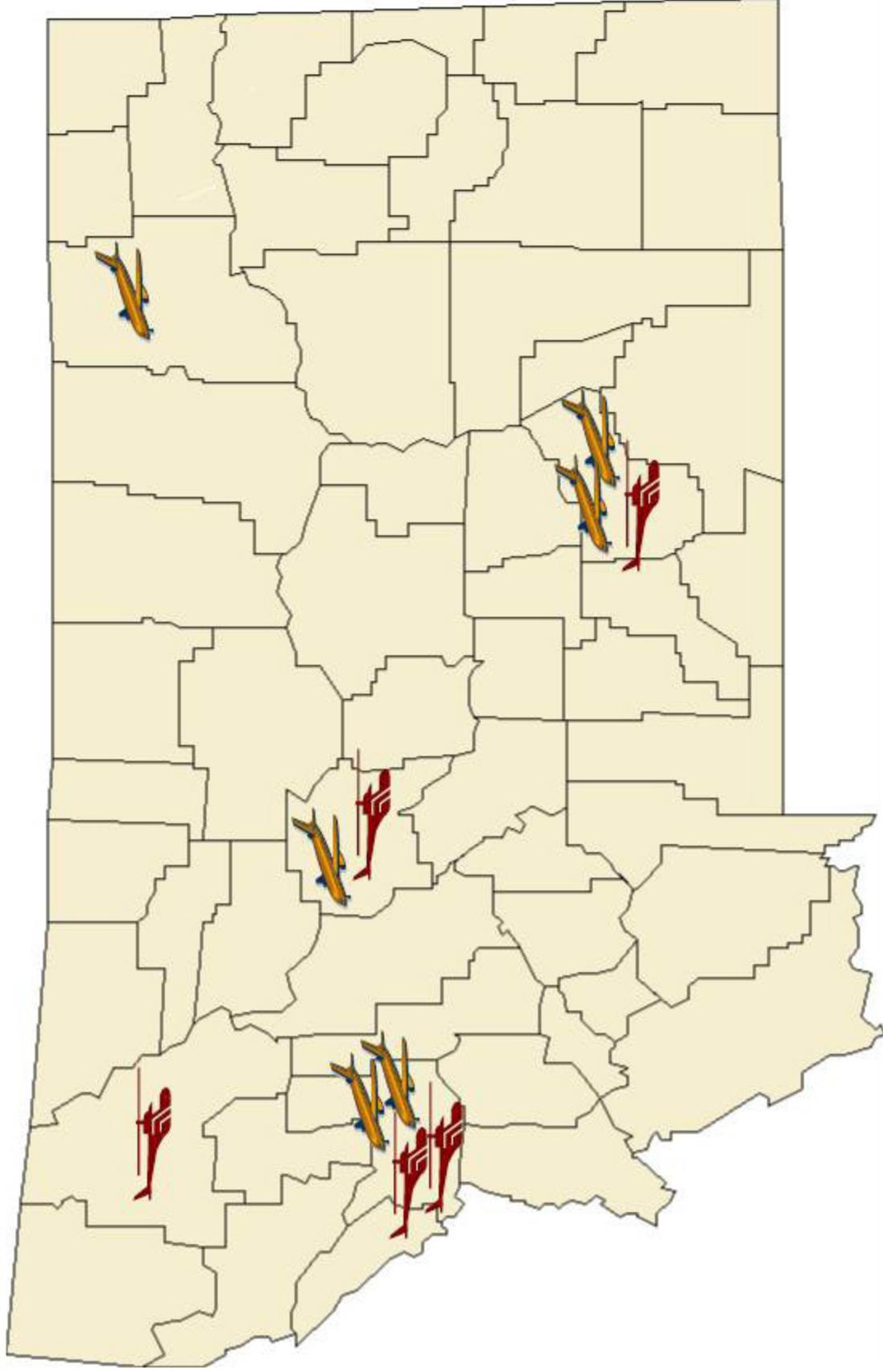
Map # 44



Data Source: MT DPHHS Primary Care Office, HPSA Mental Health data, March 2011. For current HPSA information go to: <http://bhpr.hrsa.gov/shortage/>

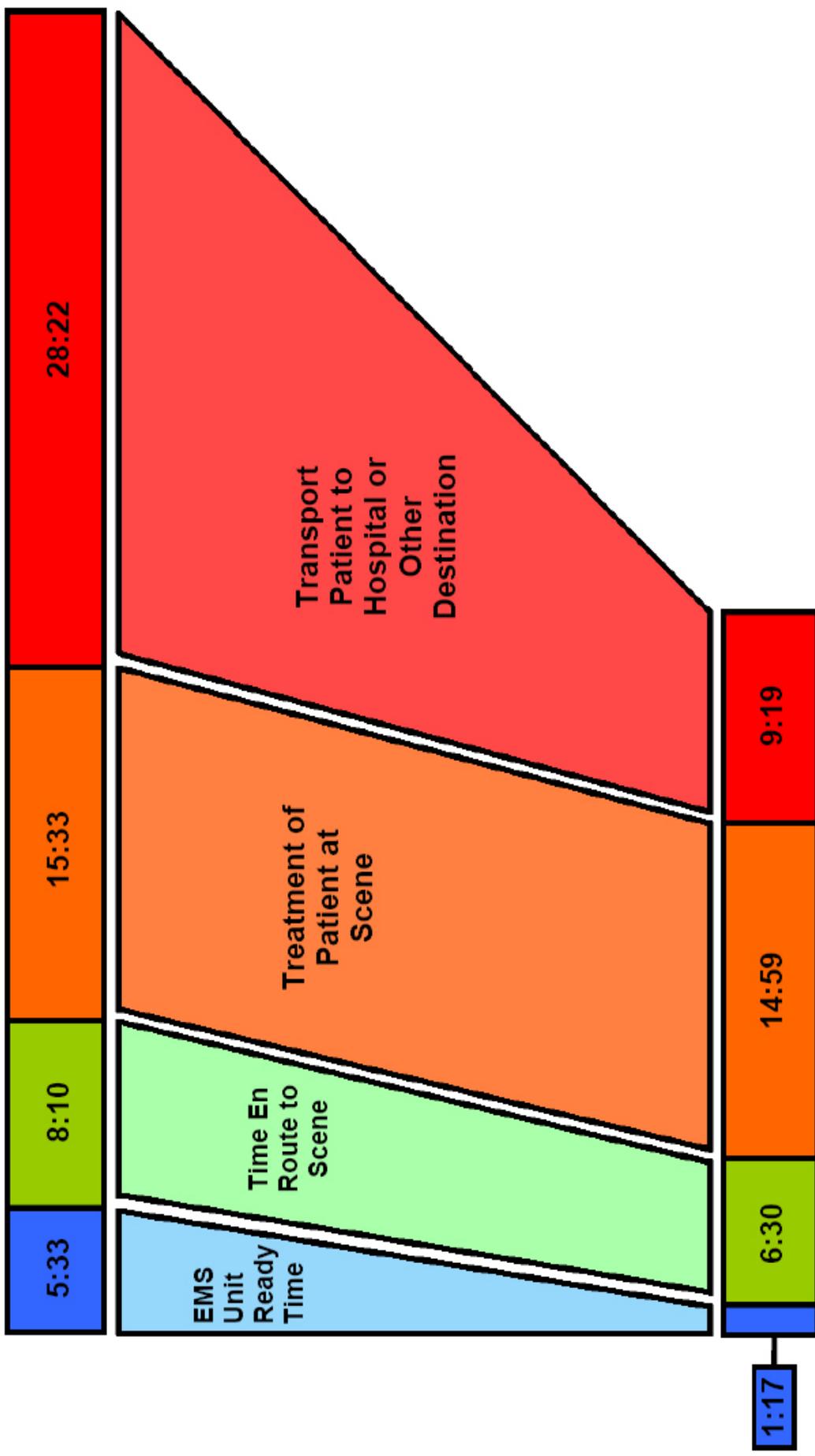


Geographic Distribution of Montana's Air Ambulance Services<sup>164</sup>



# Rural EMS Response<sup>165</sup>

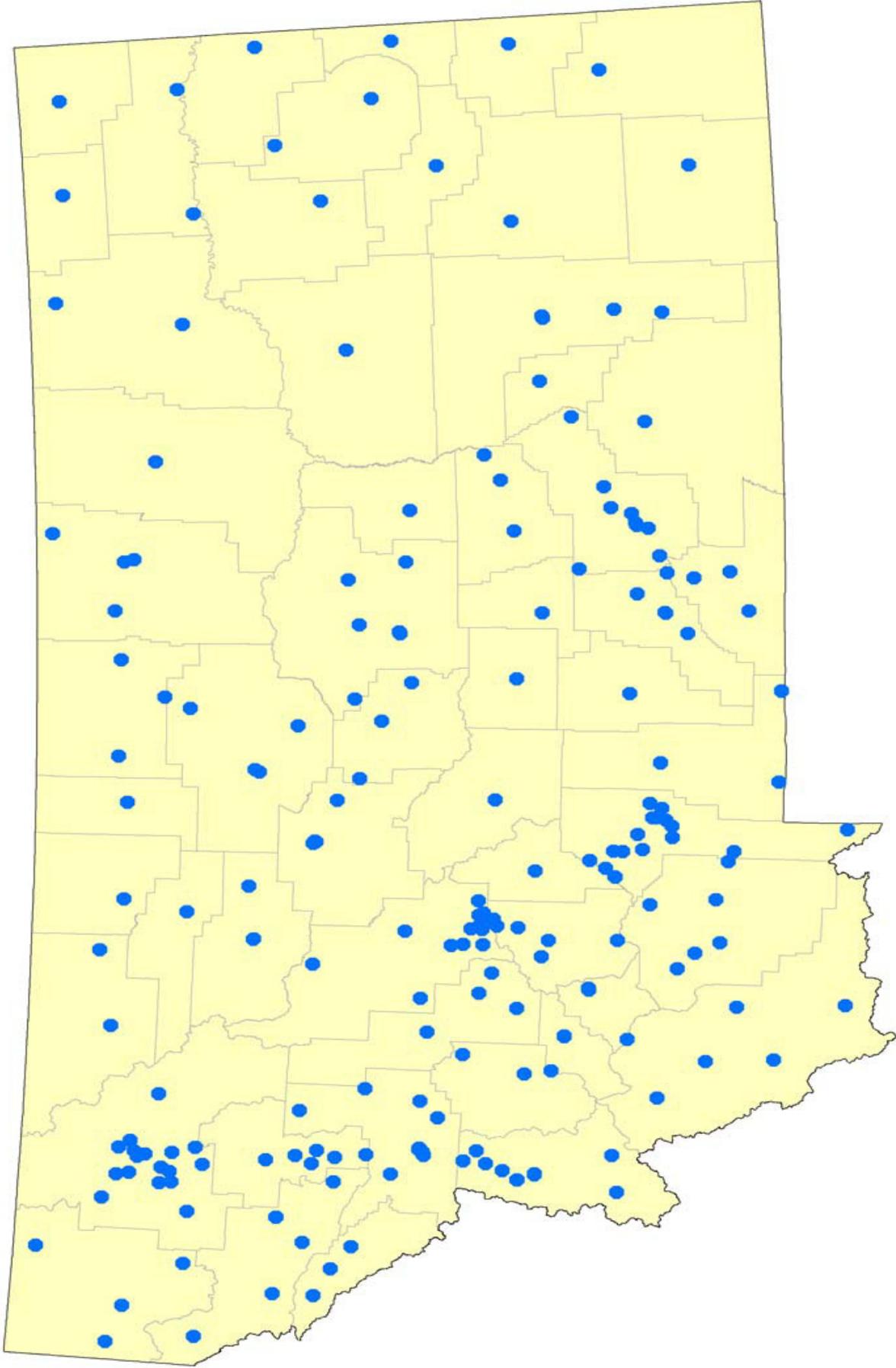
Total Incident Time 57:38



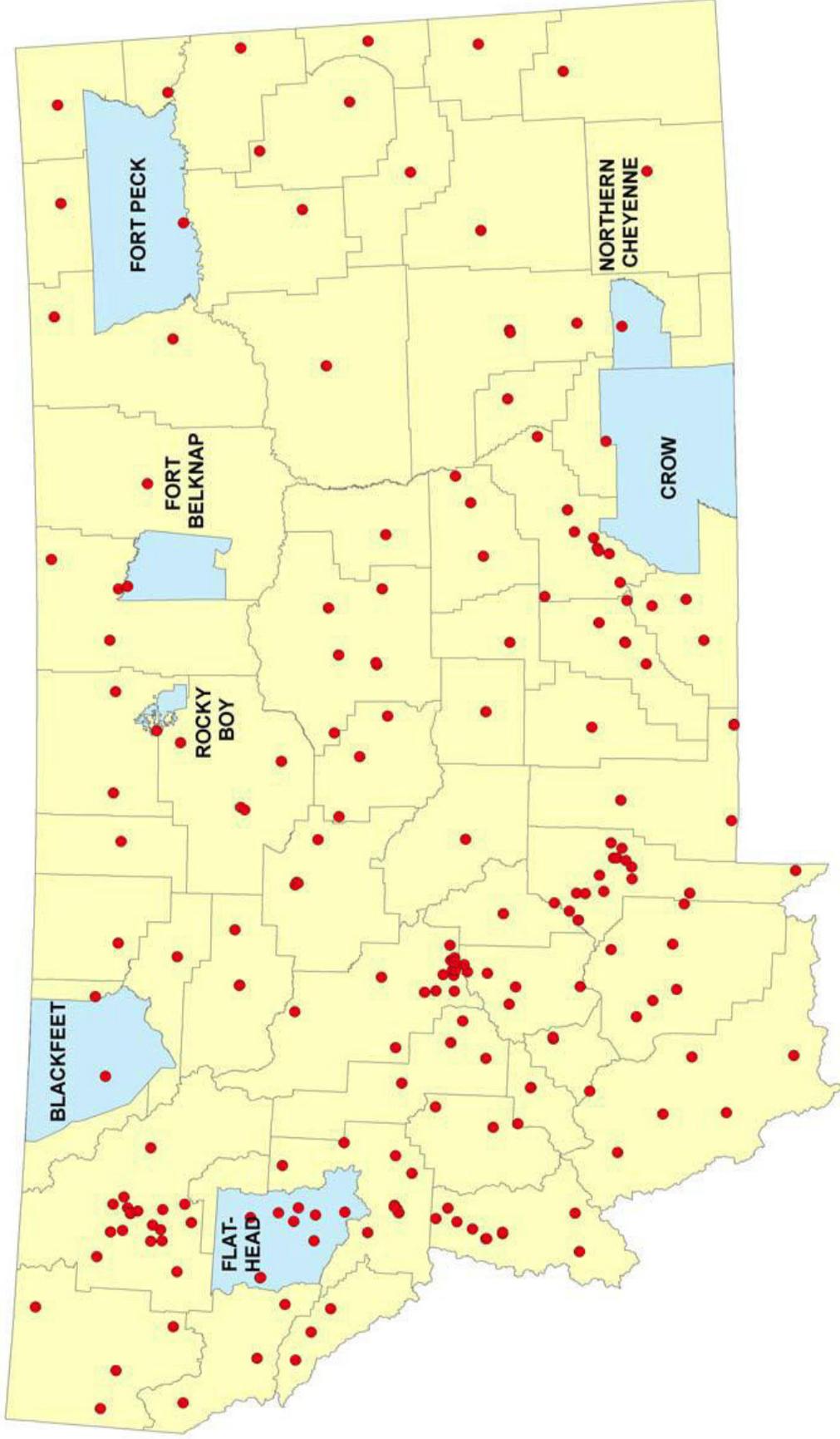
# Urban EMS Response

Total Incident Time 32:05

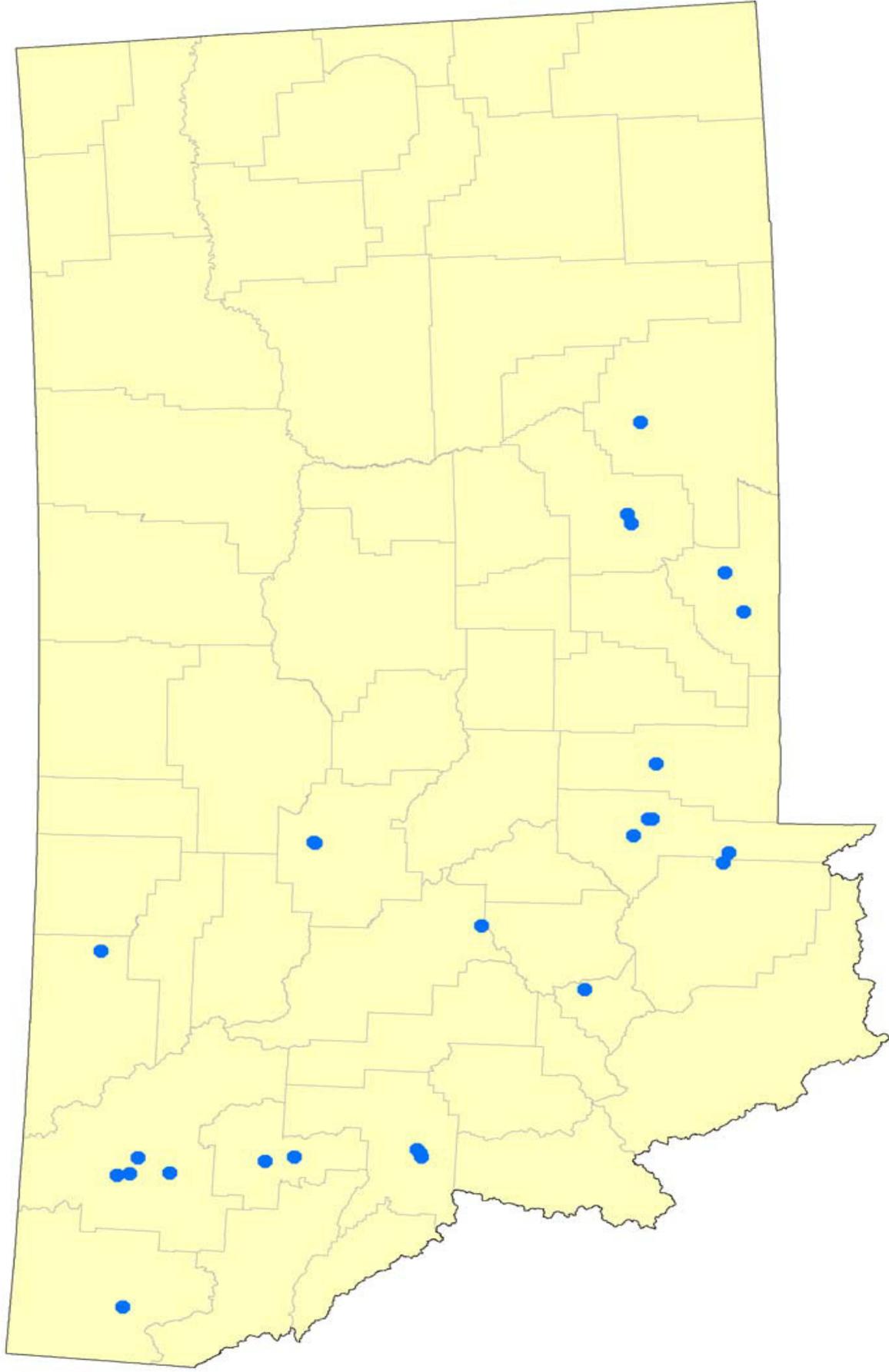
Licensed EMS Units<sup>166</sup>



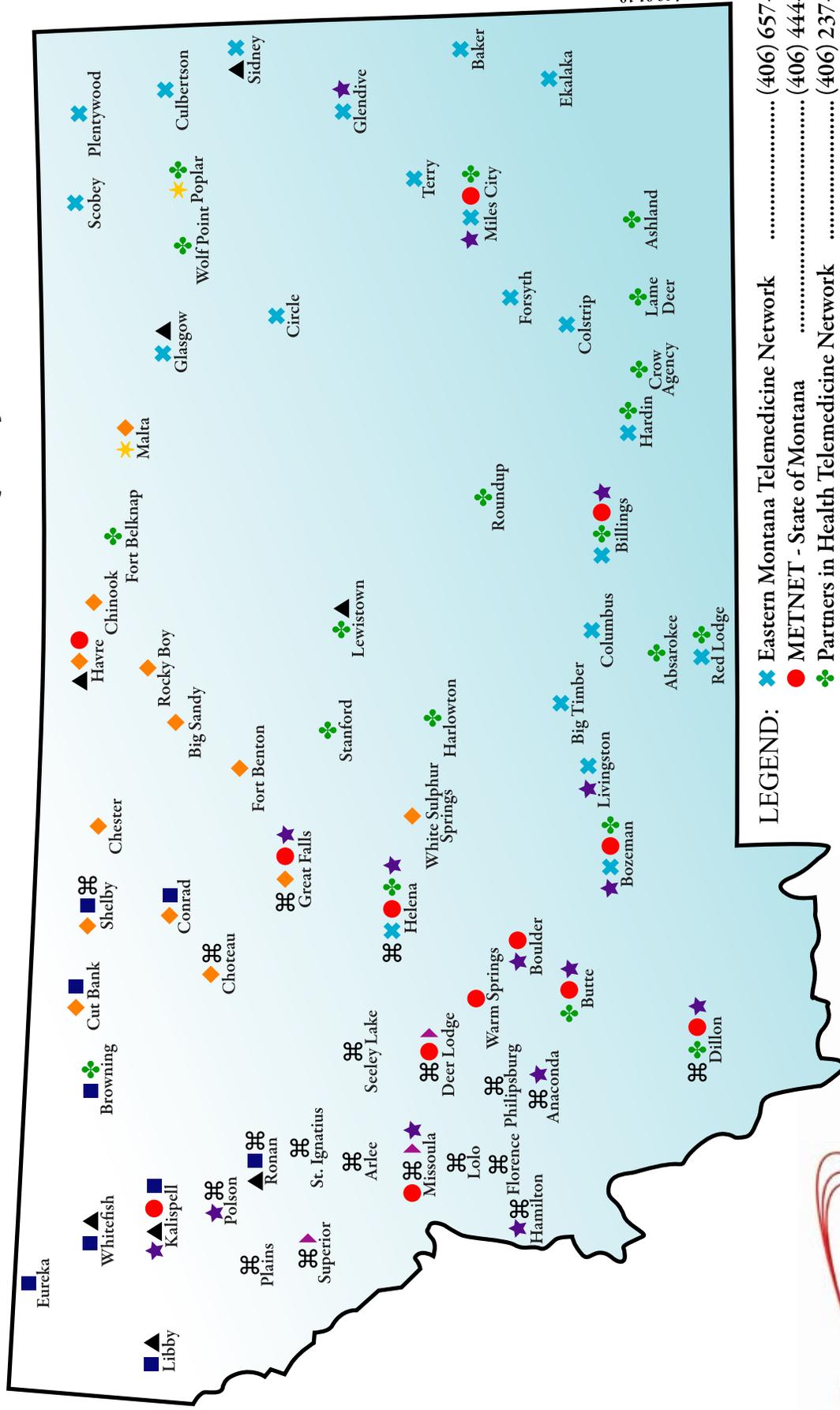
### Proximity of EMS Units to American Indian Reservations in Montana<sup>167</sup>



**Emergency Medical Services Advanced Life Support Care 24/7<sup>168</sup>**  
**Map # 50**



# Montana Telehealth Alliance (MTA)<sup>169</sup>



Revised 09 01 10

## LEGEND:

- ✦ Eastern Montana Telemedicine Network ..... (406) 657-4870
- METNET - State of Montana ..... (406) 444-6788
- Partners in Health Telemedicine Network ..... (406) 237-8650
- ◆ REACH Montana Telehealth Network ..... (406) 455-5588
- ★ FORTH ..... (406) 657-4870
- ⌘ Montana Cardiac Telemedicine Network ..... (406) 329-2631
- ◆ Western Montana Telehealth Network ..... (406) 327-4198
- Health Information Exchange of Montana ..... (406) 751-6687
- ▲ Montana Telestroke Project ..... (406) 444-9170
- ◆ A.W.A.R.E., Inc. Telepsychiatry Network (406) 782-2042 / (406) 565-1299





# APPENDIX D

## Footnotes and Additional References

## FOOTNOTES

### DEMOGRAPHICS

<sup>1</sup> Wikipedia, *Montana Geography* <http://en.wikipedia.org/wiki/Montana>.

<sup>2</sup> [http://montanakids.com/facts\\_and\\_figures/](http://montanakids.com/facts_and_figures/).

<sup>3</sup> Census and Economic Information Center, *Geography* [http://ceic.mt.gov/Census2010\\_geography.asp](http://ceic.mt.gov/Census2010_geography.asp).

<sup>4</sup> <http://www.50states.com/facts/mont.htm>.

<sup>5</sup> <http://www.census.gov/>.

<sup>6</sup> Frank Newman, Associate Director and Professor Emeritus, Montana State University, Office of Rural Health via email Janaury 12, 2011.

<sup>7</sup> Ibid, Frank Newman

<sup>8</sup> Ibid, Frank Newman

<sup>9</sup> Ibid, Frank Newman

<sup>10</sup> University of Washington, *Rural-Urban Commuting Area Codes (Version 2.0): Travel Distance and Time, Remote, Isolated and Frontier*, WWAMI Rural Health Research Center, Seattle, Washington. <http://depts.washington.edu/uwruca/traveldist.html>. Article Updated 05.25.06.

<sup>11</sup> U.S. Census Bureau, Table 1: Interim Projections: Ranking of Census 2000 and Projected 2030 State Population and Change: 2000 to 2030 [www.census.gov/population/www/projections/files/PressTab1.xls](http://www.census.gov/population/www/projections/files/PressTab1.xls).

<sup>12</sup> National Conference of State Legislatures (NCSL), Federal and State Recognized Tribes, updated November 2010. <http://www.ncsl.org/?tabid=13278> Pending tribe awaiting federal recognition: Little Shell of Chippewa Indians of Montana.

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<sup>14</sup> Montana Census & Economic Information Center, *Montana Overlaid on a U.S. Map* <http://commerce.state.us/ceic>.

<sup>15</sup> Census and Economic Information Center, State Population Estimates <http://ceic.mt.gov/EstimatesStatePop.asp>.

<sup>16</sup> <http://www.census.gov/>.

<sup>17</sup> U.S. Census Bureau. Population under age 18 and 65 and older: 2000, 2010, & 2030 from State Interim Population Projections by Age and Sex: 2004-2030.

- <sup>18</sup> <http://www.flexmonitoring.org/cahlistRA.cgi?state=Montana>.
- <sup>19</sup> US Census Bureau, Population Density: July 1, 2009, Population Division, Estimates of Population released March 20, 2010.
- <sup>20</sup> Ibid. Urban, Rural and Frontier Definitions.
- <sup>21</sup> U.S. Census Bureau. Population under age 18 and 65 and older: 2000, 2010, & 2030 from State Interim Population Projections by Age and Sex: 2004-2030.
- <sup>22</sup> Ibid.
- <sup>23</sup> Ibid.
- <sup>24</sup> IBM Consulting Services, *Personalized healthcare 2010—Are you ready for information-based medicine?* Executive brief. 2004.
- <sup>25</sup> U.S. Census Bureau. Population under age 18 and 65 and older: 2000, 2010, & 2030, State Interim Population Projections by Age and Sex: 2004-2030, Table 5.
- <sup>26</sup> [http://ceic.mt.gov/graphics/DataMaps/PopProjPercentChg2030\(06\)categories.pdf](http://ceic.mt.gov/graphics/DataMaps/PopProjPercentChg2030(06)categories.pdf)
- <sup>27</sup> Larry Putnam, CEO Phillips County Medical Center, Malta, MT, 2008.
- <sup>28</sup> Distances calculated using <http://www.mapquest.com>.
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- <sup>32</sup> United States Department of Veterans Affairs [http://www2.va.gov/directory/guide/division\\_flsh.asp?dnum=1](http://www2.va.gov/directory/guide/division_flsh.asp?dnum=1).
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- <sup>35</sup> America’s Health Rankings, Montana (2009) “**Strengths**” <http://www.americashealthrankings.org/yearcompare/2008/2009/MT.aspx>.
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- <sup>41</sup> Ibid.
- <sup>42</sup> Centers for Disease Control/NCHS, *Deaths: Percent of total deaths, and death rates for the 15 leading causes of death: United States and each state, 2007*. National Vital Statistics System, 3/6/2011.
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- <sup>44</sup> U.S. Census Bureau, Small Area Estimates Branch, 2009 Poverty and Median Income Estimates - States Release date: 12.2010, See Median Household Income. Prior years available. <http://www.census.gov/did/www/saipe/data/statecounty/data/2009.html>.
- <sup>45</sup> U.S. Census Bureau, Small Area Estimates Branch, 2009 Poverty and Median Income Estimates - States Release date: 12.2010, See All Ages Poverty Rate. Prior years available. <http://www.census.gov/did/www/saipe/data/statecounty/data/2009.html>.
- <sup>46</sup> Wagner, Barbara. *Facts about Private and Government Employment and Wages*, Montana Department of Labor and Industry, Research and Analysis Bureau [www.ourfactsyourfuture.org](http://www.ourfactsyourfuture.org).
- <sup>47</sup> Montana Department of Labor and Industry, Research and Analysis Bureau, *Economy At A Glance*, March 2010, <http://www.ourfactsyourfuture.org>.
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- <sup>49</sup> Bureau Of Indian Affairs, U.S. Department of the Interior, *Calculation of Unemployment Rates for Montana Indian Reservations: Employed, but Below Poverty Guidelines*.
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- <sup>52</sup> Montana Department of Labor and Industry, Research and Analysis Bureau, *Economy At A Glance*, January 2011, <http://www.ourfactsyourfuture.org>.
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<sup>56</sup> Henry J. Kaiser Family Foundation, *Montana: Distribution of the Nonelderly Uninsured by Age, states (2008-2009), U.S. (2009)*, StateHealthFacts.Org, <http://www.statehealthfacts.org/profileind.jsp?ind=134&cat=3&rgn=28>.

<sup>57</sup> Henry J. Kaiser Family Foundation, *Montana: Average Single Premium per Enrolled Employee For Employer-Based Health Insurance, 2009* StateHealthFacts.Org, <http://www.ourfactsyourfuture.org>.

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<sup>63</sup> Centers for Medicare and Medicaid Services (CMS), *Critical Access Hospital Fact Sheet*, April 2009, <http://www.cms.gov/center/cah.asp>

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<sup>65</sup> IRS Form 990 Community Benefits, <http://www.irs.gov/pub/irs-pdf/i990.pdf>

<sup>66</sup> American Hospital Association (AHA), *The Opportunities and Challenges for Rural Hospitals in an Era of Health Reform*, TrendWatch, April 2011.

## **WORKFORCE**

<sup>67</sup> U.S. Census Bureau, State and County QuickFacts: Glacier County, Montana, 2010. <http://quickfacts.census.gov/qfd/states/30/30035.html>.

<sup>68</sup> Cherie Taylor, CEO, Northern Rockies Medical Center, Interview, November 4th, 2010.

- <sup>69</sup> Rural Assistance Center (RAC), Flex Monitoring Team. [http://www.raconline.org/info\\_guides/hospitals/cah.php](http://www.raconline.org/info_guides/hospitals/cah.php).
- <sup>70</sup> There are no hospitals in Powder River, Treasure, Jefferson, Judith Basin, Wibaux, Golden Valley or Petroleum counties.
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