WHITE PAPER #1: REFERRAL, ADMISSION AND READMISSION PATTERNS

I. CURRENT LEGISLATION AND REGULATIONS

With the passage of the Patient Protection and Affordable Care Act (ACA) there is an increased focus on new health care delivery models such as patient centered medical homes, care coordination, and accountable care organizations. Section 3021 of the ACA added Section 1115A of the Social Security Act, which authorized the Center for Medicare and Medicaid Services (CMS), Center for Medicare and Medicaid Innovation (CMMI) to test innovative health care payment and service delivery models that have the potential to lower Medicare and Medicaid spending while maintaining or improving the quality of beneficiaries' care (42 U.S.C. 1315a). Suggested models referenced in section 1115A(b)(2)(B)(i) in the statute include those "promoting broad payment and practice reform in primary care."

In 2008, under Section 123 of P.L. 110-275, the Medicare Improvements for Patients and Provider's Act (MIPPA), Congress authorized the Frontier Community Health Integration Demonstration. The purpose of this demonstration mirrors the innovative nature of demonstrations being conducted by CMMI. The purpose of the demonstration authorized under Section 123 of MIPPA, is to develop and test new models for the delivery of health care services in frontier areas through improving access to, and better integration of, the delivery of health care to Medicare beneficiaries. The legislation does provide the Secretary broad authority to waive titles XVIII and XIX of the Social Security Act as may be necessary and appropriate for the purpose of carrying out the Frontier Community Health Integration Demonstration.

The Frontier Community Health Integration Demonstration is authorized under Section330A of the Public Health Service Act and is also guided by authorization of Section 123 of P.L. 110-275, the Medicare Improvements to Patients and Provider's Act of 2008 (MIPPA). The purpose of the Frontier Community Health Integration Demonstration is to develop and test new models for the delivery of health care services in frontier areas through improving access to, and better integration of, the delivery of health care to Medicare beneficiaries. The authorizing legislation defines a frontier Critical Access Hospital (CAH) as a CAH located in a county with a population of 6 people or fewer per square mile and a daily acute-care census of 5 patients or less. The legislation also identifies four "frontier-eligible" states: Alaska, Montana, North Dakota and Wyoming.

In response to the MIPPA legislation and subsequent funding by Congress, the Health Resources and Service Administration/Office of Rural Health Policy (HRSA/ORHP) awarded an 18-month cooperative agreement to the Montana Health Research and Education Foundation (MHREF) to inform the development of a new frontier health care service delivery model. Actual design and implementation of the demonstration are the responsibility of the Center for Medicare and Medicaid Services (CMS).

To better identify and communicate the challenges and solutions for health care delivery in frontier communities, a Framework Document and subsequent topical white papers are being developed by MHREF and shared with the CMS. This is White paper #1 in this series.

II. EXPLANATION OF THE PROBLEM

The current payment system for Critical Access Hospitals is fragmented with some components (i.e. home health, nursing home and assisted living care) reimbursed by means of fixed payments and other

components (i.e. acute, outpatient, Rural Health Clinic visits) cost reimbursed. Existing Medicare statute and regulations do not necessarily provide incentives for care coordination activities for frontier Critical Access Hospitals to reduce unnecessary admissions and readmissions. Volume-driven, cost-base reimbursement incentives (rather than value and outcomes-based shared savings incentives) currently drive CAHs. For successful health care service delivery in the proposed new Frontier Health System, a reimbursement model that supports care coordination is essential.

There is no incentive and few resources for frontier primary care medical providers to coordinate patient care between frontier CAHs, secondary and tertiary healthcare facilities. Of the eight F-CHIP hospitals in Montana that are participating in this project[1], none employ discharge coordinators and only three have installed EHR systems and are able to track patients with chronic or multiple-chronic conditions. As a result, patient hand offs break down, resulting in unnecessary admissions and readmission to emergency departments, long-term care and inpatient and outpatient care settings across the continuum of care. For example, frontier patients in Ekalaka, Montana, are referred to medical providers in Baker, Montana (35 miles); Miles City, Montana (115 miles) or Billings, Montana (258 miles). Because frontier care coordination activities and EHR systems are lacking, patients often receive unnecessary or duplicative services at the four widely-separated locations.

As stated in the previous section, CMS is currently testing new and innovative models of health care delivery, including Shared Saving models through Accountable Care Organizations. The Frontier Health System model that is being proposed, similar to the CMS Shared Saving model, is built on the premise that ACOs improve care to Medicare beneficiaries and lower cost. CMS and CMMI's final rules for ACOs and the Comprehensive Primary Care (CPC) Initiative only apply to networks comprised of at least 5,000 Medicare beneficiaries for ACOs and "up to 330,750 Medicare and Medicaid beneficiaries" for the CPC initiative.[2] Frontier CAHs do not qualify for either of these ACO models because of the 5,000 to 330,750 covered lives requirement. The Secretary has the authority, under this demonstration, to allow a modified ACO of less than 5,000 Medicare lives to demonstrate shared savings from reduced admissions/readmissions as part of a Frontier Community Health Integration demonstration.

The proposed Frontier Health System organizations are not eligible for current rural and urban ACO and CPC healthcare service delivery and reimbursement models as these frontier areas will not have the necessary numbers of beneficiaries needed to participate. For example, Montana's recently-established frontier care coordination network of eight F-CHIP facilities includes only 3,902 Medicare beneficiaries[3] and does not meet the ACO or CPC minimum beneficiary rules. Also, assuming formation of about eight care coordination networks of 7-10 frontier CAHs in Wyoming, North

[1] The F-CHIP project started with nine frontier healthcare facilities and communities in September 2010. In October 2011, one healthcare facility dropped out, leaving eight participating facilities. Some F-CHIP data includes eight facilities and some data includes nine facilities.
[2] CMMI Solicitation for Comprehensive Primary Care Initiative, 2011
[3] From an analysis of CMS ACO spend data by zip code by Medicare beneficiary for the eight Montana F-CHIP facilities completed by ACS, A Xerox Company, for the F-CHIP project in December 2011.

Dakota, Alaska and Montana[4], none would meet the ACO regulatory requirement of 5,000 Medicare beneficiaries. As currently structured, the ACO and CPC models do not work for providers in frontier communities due to the lack of large numbers of Medicare beneficiaries needed to ensure viability and a lack of access to capital needed to participate in these demonstrations. However, there is great interest in clinical and financial integration that can both better patient care and reduce costs in frontier areas. As such, a new alternative Frontier Health System shared savings model is proposed.

The new Frontier Health System (FHS) model requires an integrated, budget-neutral payment system that aligns reimbursement methodologies between all services. Analysis of frontier referral and admission/readmission patterns reveals urban and rural ACO structures do not fit an integrated organizational, regulatory and cost-based payment umbrella, spreading fixed cost and producing lower cost care that is needed in the new Frontier Health System model.

III. POLICY OPTIONS

The Frontier Health System (FHS) organization with its own Conditions of Participation (COP), would serve as a single point of contact for frontier Medicare beneficiaries for the coordination and delivery of preventive and primary care, extended care, long term care and specialty care. Medicare beneficiaries would benefit through reduced unnecessary admissions and readmissions.[5] In the proposed Frontier Health System model, networks of ten or fewer Frontier Health System organizations—usually serving fewer than 5,000 Medicare beneficiaries would coordinate preventive and primary care, extended care (including expanded Visiting Nurse Services), inpatient care and emergency services across local, secondary and tertiary care settings. Care coordination would be accomplished by an RN Care Transitions Coordinator (CTC) working with Community Health Workers (CHWs) in each of the participating Frontier Health System communities.[6]

Significant upfront capital will be needed to create integrated Frontier Health System organizations and care coordination networks with the health information technology and chronic disease management tools and staffing needed to lower cost by preventing unnecessary admissions and readmissions. A payment system is proposed that would compensate for the startup costs of a Frontier Care Coordination Network by rolling some PPS costs such as ambulance and VNS therapy services into cost based reimbursement plus shared savings (between CMS and the Frontier Care Coordination Network) produced by lower cost from prevention of unnecessary admissions and readmissions. In exchange for cost-based reimbursement plus shared savings, Frontier Health System organizations would commit to participation in the Frontier Care Coordination Network's goal of preventing unnecessary admissions and readmissions.

[4] There are 71 frontier CAHs in the four frontier-eligible states.
[5] pp. 5-6, "Framework For A New Frontier Health System Model," October 2011, Montana Health Research and Education Foundation.
[6] Montana Frontier Community Health Care Coordination Network pilot grant proposal, Methodology section. More detail will be provided in the Frontier Care Coordination and Long Term Care white paper.

Each Frontier Health System organization would concentrate on the goal of efficiently coordinating the care of frontier patients across primary, secondary and tertiary care settings. In exchange for participation in a value-based purchasing, pay-for-outcomes reimbursement system 1) care coordination startup and ongoing expense would need to be an allowable cost in the frontier reimbursement model 2) the frontier reimbursement system needs to include incentives for the frontier facility to reduce unnecessary admissions and readmissions and 3) all fragmented frontier healthcare reimbursement needs to be brought under the umbrella of reimbursable costs. These actions will provide an effective frontier service delivery and reimbursement system to manage healthcare costs.

IV. DISCUSSION

Kaiser Family Foundation reports show Medicare spending is highly skewed, with a small share of beneficiaries accounting for a large share of program spending. In 2006, ten percent of fee-for-service Medicare beneficiaries (those not enrolled in Medicare Advantage) accounted for 58 percent of total Medicare spending.[7] Average per capita Medicare spending for these beneficiaries was $48,210.[8] Kaiser State Health Facts show that average spending per beneficiary in Montana in 2006 was $7,576 and $10,365 for beneficiaries overall.[9] Individuals with multiple chronic conditions account for much of the disparity in Medicare spending. As noted in the U.S. Department of Health & Human Services report on Multiple Chronic Conditions, "increased spending on chronic diseases among Medicare beneficiaries is a key factor driving the overall growth in spending in the traditional Medicare program."[10] This information is consistent with recent data analysis from F-CHIP facilities showing ten percent of patients accounting for 70% of charges.[11]

Table 1. Montana F-CHIP Facility CMS ACO Spend Data by Zip Code of Medicare Beneficiary

Facility	Inpatient	% of Total Pay	Outpatient	% of Total Pay	Professional	% of Total Pay	Total Payment All Services	Unique Beneficiaries	Payment per Beneficiary
Dahl	$ 1,124,567	54%	$ 306,558	15%	$ 655,047	31%	$ 2,086,172	213	$ 9,794
Rosebud	$ 2,877,838	64%	$ 549,548	12%	$ 1,084,151	24%	$ 4,511,537	511	$ 8,829
Roosevelt	$ 778,614	38%	$ 421,188	21%	$ 827,428	41%	$ 2,027,230	335	$ 6,051
Liberty	$ 1,588,540	49%	$ 543,161	17%	$ 1,113,080	34%	$ 3,244,780	576	$ 5,633
Ruby Valley	$ 1,524,379	58%	$ 444,676	17%	$ 681,107	26%	$ 2,650,162	503	$ 5,269
Pioneer	$ 1,677,516	53%	$ 641,361	20%	$ 830,123	26%	$ 3,148,999	641	$ 4,913
Granite	$ 1,056,265	52%	$ 445,710	22%	$ 543,899	27%	$ 2,045,874	450	$ 4,546

[7] Kaiser Family Foundation analysis of the CMS Medicare Current Beneficiary Survey Cost and Use file, 2006.
[8] *Ibid.*
[9] *Ibid.*
[10] p. 4; U.S. Department of Health & Human Services; *Multiple Chronic Conditions—A Strategic Framework: Optimum Health and Quality of Life for Individuals with Multiple Chronic Conditions.* Washington, DC. December 2010.
[11] Data from an analysis of 69,563 unique Health-e-Web claims (including 29,000 Medicare claims) for the nine Montana F-CHIP facilities performed by ACS, A Xerox Company, for the F-CHIP project completed November 2011. Health-e-Web is an electronic clearinghouse for claim submissions for all nine of the Montana F-CHIP facilities.

Prairie	$ 575,185	53%	$ 161,166	15%	$ 342,251	32%	$ 1,078,602	243	$ 4,439
McCone	$ 923,888	50%	$ 408,489	22%	$ 531,425	29%	$ 1,863,803	430	$ 4,334
Totals	**$12,126,792**	**54%**	**$ 3,921,855**	**17%**	**$ 6,608,511**	**29%**	**$ 22,657,159**[12]	**3,902**	**$ 5,979**

Notes: Total payments may include beneficiaries that are not patients of F-CHIP Facility. Patient counts are based only on patients living within the zip code area of the FCHIP facility - this would exclude patients from outside the zip code area that may have had visit(s) at the FCHIP facility. Zip code service areas were determined by the CHSD facility service area zip codes provided by the Montana Office of Rural Health. According to CMS 2010 Accountable Care Organization (ACO) data, Medicare beneficiary fee-for-service payments totaled $22,657,159 for the nine Montana F-CHIP service areas. The average payment per F-CHIP facility per beneficiary was $5,979 with the highest average of $9,794 and the lowest average of $4,334 as shown in Table 1.[13] ACO inpatient data included Indian Health Service and mental health facilities but did not include swing bed or nursing home payments. Outpatient data includes hospital outpatient, ASC, RHC and FQHC payments. Professional data includes only physician fee-for-service payments.

A. Referral Patterns and Reducing Inpatient Stays and Days

Analysis of data from the calendar year 2010 CMS Hospital Service Area File for the nine Montana F-CHIP facilities reveals 2,970 stays for 13,775 patient days at 168 different hospitals for Medicare beneficiaries residing in zip codes within the nine F-CHIP facility service areas. Table 2 shows where Medicare inpatients residing within the nine F-CHIP service areas were provided hospital services in 2010 categorized by 1) the local frontier CAH, 2) a hospital within Montana but not the local CAH, and 3) an out-of-state hospital.

Table 2. Medicare Inpatient Stays and Patient Days plus Percentages—Inside Service Area, Outside Service Area/In-State and Out-of-State—at 9 Montana F-CHIP Facilities

Location	Patient Stays	% of Total Patient Stays	Patient Days	% of Total Patient Days
Inside Service Area (local CAH)	468	15.80%	1,474	10.70%
Hospital Outside Service Area/In-State	2,017	67.90%	9,578	69.50%
Hospital Out-of-State	485	16.30%	2,723	19.80%
Totals	**2,970**	**100%**	**13,775**	**100%**

Although Table 2 shows only 15.8% of patient stays occurring at the local frontier CAH, the remaining 84.2% of patient stays offer considerable opportunity for reduction of admits and readmits and shared savings at other in-state and out-of-state referral hospitals if the care coordination network and shared savings recommendations in the framework document are demonstrated and implemented. Since the

[12] The average Medicare spend for beneficiaries residing within an F-CHIP facility service area is $2.52 million ($22,657,159 divided by 9). Therefore, the estimated spend for beneficiaries residing within the 71 frontier-eligible CAH service areas in the four frontier-eligible states is an estimated $179 million, which holds the potential for a significant amount of Frontier Care Coordination Network/CMS cost sharing opportunity.

[13] Data from an analysis of the CMS Accountable Care Organization (ACO) Applicant Share Calculations for the nine Montana F-CHIP facilities performed by ACS, A Xerox Company, for the F-CHIP project completed December 2011.

Medicare spend for the 9 original F-CHIP facilities is $22,657,159[14] and 84.2% of Medicare beneficiary patient stays occur outside the local CAH service area, over $19 million (.842 times $22,657,159) of the Montana F-CHIP Medicare spend happens away from the local CAH service area. If 10% of the out-of-area Medicare spend can be reduced or eliminated with better care coordination, Frontier Care Coordination Network cost savings of $1.9 million would be realized.

B. Montana F-CHIP Facility 72-Hour Return-To-ER and Inpatient Readmit Rates

Although Montana frontier CAHs struggle with the "problem of small numbers," the eight F-CHIP facilities reported monthly 72-hour return to the ER data to the Montana FLEX program Performance Improvement Network (PIN) during calendar year 2010. Aggregate data show 4,590 ER visits during 2010 with a return to the ER within 72 hours rate of one for every 59 visits or 1.70%.[15] This compares favorably with a national study of 218,179 ER visits showing a 3.2% 72-hour return rate.[16] Also, Mountain Pacific Quality Health Foundation, the Medicare Quality Improvement Organization (QIO) for Montana (as well as Alaska, Wyoming and Hawaii), provided the aggregate Medicare 30-day readmit rate for calendar year 2010 for the original nine Montana F-CHIP facilities. Montana's 30-day readmit rate of one in nearly seven discharges (or 14.77%) is lower than the national average of nearly one of five (20%).[17] However, individual F-CHIP facility readmit rates range from 4.87% to 20.81%, with an average of 14.95%, very close to the Montana statewide rate and below the national benchmark of about one in five (20%). Although both the 72-hour return to ER and local frontier readmit rates compare favorably with national benchmarks, there is some opportunity to lower them further and cost share with CMS but only if Frontier Care Coordination Networks are created and startup costs funded by means of enhanced cost based reimbursement as recommended in the framework document.

C. Tertiary Referral Centers/Level II Trauma Centers: Alaska, Montana, North Dakota and Wyoming

Referral patterns for the four frontier-eligible states parallel the location of Level II trauma centers in each state (see Table 3 below). None of the four frontier-eligible states have any Level I trauma centers. Less than half the population (45.6%) of the four states has 60 minute access to a tertiary referral center with specialty and subspecialty medical care. Only 8.57% of the combined land mass of the four states is within 60 minutes of a tertiary center.

[14] See Table 1, Total Medicare Spend Data by Medicare beneficiary zip code for nine Montana F-CHIP facilities. The aggregate number is $22,657,159.
[15] Calendar-year 2010 MHREF Performance Improvement Network (PIN) data for the eight frontier CAHs participating in the F-CHIP project.
[16] Pham, J.C., *et. al.*, "Seventy-two hour returns…in the emergency department: a national study," *Journal of the Society for Academic Emergency Medicine*, April 2011, pp. 390-397. Abstracted in Pub.Med.gov; U.S. National Library of Medicine National Institutes of Health. http://www.ncbi.nlm.nih/pubmed/21496142. Accessed October 3, 2011.
[17] E-mail from Sara Medley, Mountain Pacific Quality Health Foundation, to Larry Putnam, Frontier Community Health Integration Project.

Table 3. Percentage of Population and Land Mass Within 60 Minutes By Helicopter or Ambulance of Level II Trauma Center in Alaska, North Dakota, Wyoming and Montana			
State	Tertiary/Trauma Center Location	Percent of State's Population within 60 min. of Trauma Center	Percent of State's Land Mass within 60 min. of Trauma Center
Alaska	Anchorage	54.76%	1.21%
North Dakota	Minot	57.20%	11.21%
	Bismarck		
	Fargo (2)		
	Grand Forks		
Wyoming	Casper	32.33%	12.37%
	Cheyenne		
Montana	Billings (2)	38.27%	9.49%
	Great Falls		
	Missoula		
Combined State Percentage		45.64%	8.57%

Table 3 data from 2009 Level I/II Trauma Center Coverage Maps (By State). American Trauma Society. http://tramah.cml.upenn.edu/CML.TraumaCenters.Web/StatePage.aspx? Accessed August 5, 2011.

V. CONCLUSION

As outlined in the framework document and as evidenced by the data included in this white paper, CMS should consider in the demonstration, the establishment of a shared savings model using Frontier Care Coordination networks of ten or fewer Frontier Health System organizations. Although there are relatively lower volumes in these Frontier Health System organizations as compared to larger rural and urban systems, there is real potential for savings to the Medicare program by reducing unnecessary admissions/readmissions of frontier Medicare beneficiaries. By coordinating the care of these beneficiaries through the proposed ACO model, reduction of unnecessary admissions/readmissions would occur at secondary and tertiary referral centers as well as the Frontier Health System organization and community. To maximize the value of Frontier Care Coordination networks, the networks would target the management of patients with multiple chronic conditions and cost sharing opportunities would occur between Frontier Care Coordination networks and CMS. A new payment system is proposed that compensates for the costs of a Frontier Care Coordination Network including enhanced cost-based reimbursement plus shared savings between CMS and the Frontier Care Coordination Network resulting from reduced unnecessary admissions/readmissions. As detailed earlier in this white paper, CMS's ACO rules would need some modifications or waivers to allow Frontier ACOs of fewer than 5,000 Medicare beneficiaries.