The Montana Regional Outcomes Project

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MONTANA CARDIOVASCULAR HEALTH PROGRAM

MACVPR

- **INTRODUCTION:**
  The Montana Regional Outcomes Project is a collaborative effort between the Montana Association of Cardiovascular and Pulmonary Rehabilitation (MACVPR) and the Montana Cardiovascular Health Program (CVHP). The outcomes project includes cardiac rehab programs located in Montana and northern Wyoming.
- **PURPOSE:**
  The purpose of this project is to provide cardiac rehab programs support related to collecting outcomes and managing outcomes data and to provide benchmarks for each outcomes indicator to help determine if quality improvement (QI) or performance improvement (PI) projects are warranted.
- **DESIGN:**
  A longitudinal, multi-center cardiac rehab outcomes assessment.
- **METHODS:**
  The Montana Outcomes Project initiated data collection on a uniform set of indicators beginning in July 2006. Each participating program submits de-identified data to the CVHP for analysis on a quarterly basis. Results are sent back to each program with their individual program data plotted against the regional mean.
- **RESULTS:**
  January 2008 represented one complete year of data collection and included outcomes information from 22 facilities and 850 patients. The mean age was 68 years, 96% were white, 68% were male and the mean number of visits was 24. The mean resting blood pressure (BP) at program completion was 118/68 mm Hg with 90% of patients meeting criteria for BP control (<140/90 or <130/80 mm Hg for patients with diabetes). Mean low density lipoprotein (LDL) was 87 mg/dL, 94% were on lipid lowering medications and 73% achieved LDL values of <100 mg/dL. Upon program completion, significant improvements (P <0.001) were noted in pre vs. post scores in functional capacity measured by the Duke Activity Status Index (5.5 METs vs. 7.3 METs), SF-36 physical (36.9 vs. 45.8) and mental (47.2 vs. 52.2) composite scores, Dartmouth COOP (22 vs. 15.9) and fat intake measured by the Block Dietary Fat Screener (19.6 vs. 14.7). Smoking rates decreased from 13% to 4%, patient satisfaction was 48.9 out of a possible 50 and program completion (>12 visits) was 84%.
- **CONCLUSION:**
  Our findings suggest that a collaboration between MACVPR, CVHP and individual cardiac rehab programs is feasible. Efforts are underway to expand the number of states and programs participating in the outcomes project.

INTRODUCTION

The Montana Cardiovascular Health (CVH) Program and the Montana Association of Cardiovascular and Pulmonary Rehabilitation (MACVPR) collaborated on the development of a regional cardiac rehab outcomes project. The developmental phase of the project started in 2005 and data collection on a uniform set of outcome indicators began in July of 2006. (Table 1) The primary purpose of the project was to generate aggregate, region-wide means allowing individual programs to compare their own outcomes data facilitating quality improvement projects.

TABLE 1. OUTCOME INDICATORS, MONTANA OUTCOMES PROJECT - 2008

DEMOGRAPHICS	
Age	
Gender	M (Male) F (Female)
Ethnicity	Caucasian, American Indian, Asian, Black, Other
Diagnosis	
Number of visits	
Number of patients	
Domain	
Health	
Quality of Life	SF-36 or Dartmouth Measured on initial interview & at the end of Ph II
Clinical	
BP at goal	<140/90 <130/80 in patients with diabetes Average of last 3 resting readings
LDL at goal	<100
Lipid lowering medication	Yes/No
Contraindication	Yes/No
Duke Activity Status Index (DASI)	pre to post % change Measured on initial interview & at the end of Ph II
A1C patient with DM	Yes/No Measured within the last 6 months
Behavioral	
Smoking	Smoking status 1 month prior to cardiac event vs. Smoking status within the last month of rehab
Dietary Fat Screen	pre to post % change Measured on initial interview & at the end of Ph II
Service	
Patient Satisfaction	Satisfaction survey post rehab
Program completion rate	12 or more sessions = program completion rate

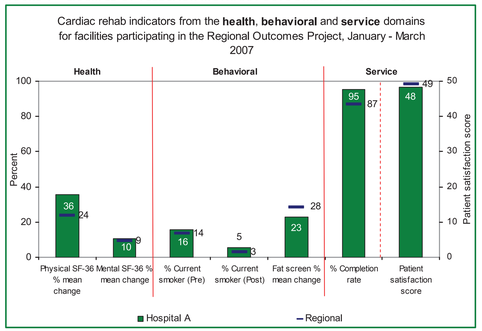
DATA COLLECTION/ANALYSIS

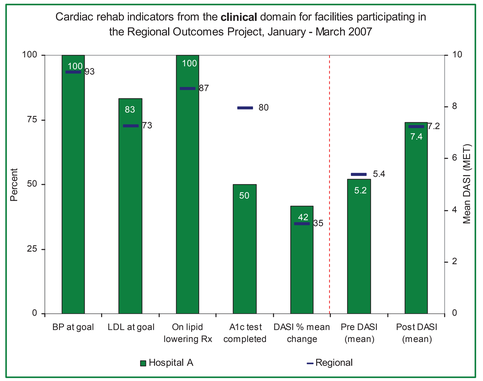
Programs participating in the outcomes project submitted de-identified data to the CVH Program for analysis on a quarterly basis. Demographic characteristics and means for each indicator were generated. After the data analysis was completed each program received feedback which consisted of their programs data plotted against the regional mean. (Table 2 / Figure 1)

TABLE 2 – EXAMPLE OF FEEDBACK, MONTANA OUTCOMES PROJECT – 2008
Demographic and diagnostic characteristics among cardiac rehab patients in Hospital A, January - March 2007

	Hospital A (N = 21)	All participating sites (N = 189)
	Mean (min. - max.)	Mean (min. - max.)
Age (years)	63.2 (46.0 - 84.1)	67.4 (40.2 - 95.0)
	Mean/Median (min.-max.)	Mean/Median (min.-max.)
Number of Phase II visits	22.3/24.0 (7 - 36)	24.6/24.0 (1 - 38)
	% (n)	% (n)
Gender		
Male	57 (12)	68 (167)
Female	43 (9)	32 (80)
Race		
White	100 (21)	96 (238)
American Indian	0	3 (7)
Other	0	1 (2)
Diabetes	24 (5)	20 (50)
Diagnosis		
MI only	5 (1)	7 (18)
CABG only	29 (6)	30 (73)
PCI only	24 (5)	17 (42)
MI/CABG	5 (1)	10 (25)
MI/PCI	10 (2)	18 (44)
Angina	5 (1)	12 (29)
Other	29 (6)	23 (56)

FIGURE 1 – EXAMPLE OF FEEDBACK MONTANA OUTCOMES PROJECT – 2008





RESULTS

January 2008 represented one complete year of data collection and included outcomes information from 22 facilities and 850 patients. The mean age was 68 years, 96% were white, 68% were male, the mean number of visits was 24 and program completion rate (>12 visits) was 84%. (Table 3) The mean resting blood pressure (BP), derived from an average of the last 3 pre-exercise BPs, at program completion was 118/68 mm Hg with 90% of patients meeting criteria for BP control (<140/90 or <130/80 mm Hg for patients with diabetes). Mean low density lipoprotein (LDL) was 87 mg/dL according to the most current lab values available to the cardiac rehab staff, 94% were on lipid lowering medications, and 73% achieved LDL values of <100 mg/dL. Eighty-eight percent of patients diagnosed with diabetes had had an A1c test completed within 6 months of starting cardiac rehab. (Table 4) Upon program completion, significant improvements (<.05) were noted in pre vs. post scores in functional capacity measured by the Duke Activity Status Index (DASI) (1), SF-36 (2) physical and mental composite scores, Dartmouth COOP (3) and fat intake measured by the Block Dietary Fat Screener (4). (Table 5) Improvements were also noted in smoking rates, which decreased from 13% at the beginning of cardiac rehab to 4% post cardiac rehab. Patient satisfaction was 48.9 out of a possible 50 on a set of non-standardized questions.

TABLE 3 - DEMOGRAPHIC AND DIAGNOSIS CHARACTERISTICS, MONTANA OUTCOMES PROJECT - 2008.

	Total Phase II visits			
	None documented (n = 18)	**< 12 visits** (n = 116)	**≥ 12 visits** (n = 716)	**Total** (N = 850)
	Mean (min-max)	Mean (min-max)	Mean (min-max)	Mean (min-max)
Age (years)	64.3 (40.0-78.5)	66.0 (29.3-89.1)	68.3 (13.4-95.0)	67.9 (13.4-95.0)
	Mean/Median (Min. – Max.)	Mean/Median (Min. – Max.)	Mean/Median (Min. – Max.)	Mean/Median (Min. – Max.)
Number of visits	Unknown	4.4 (0-11)	26.7 (12-38)	23.6 (0-38)
Completion Rate (≥ 12 visits)				84%
	% (n)	% (n)	% (n)	% (n)
Gender				
Male	44 (8)	64 (74)	69 (492)	68 (574)
Female	56 (10)	36 (42)	31 (224)	33 (276)
Race				
White	100 (18)	97 (112)	96 (688)	96 (818)
American Indian	0	3 (4)	2 (15)	2 (19)
Other	0	0	2 (13)	2 (13)
Diabetes	11 (2)	22 (26)	22 (157)	22 (185)
Diagnosis				
MI only	0	3 (3)	5 (38)	5 (41)
CABG only	11 (2)	22 (25)	31 (223)	29 (250)
PCI only	17 (3)	18 (21)	22 (158)	21 (182)
MI/CABG	11 (2)	10 (11)	8 (60)	9 (73)
MI/PCI	17 (3)	29 (34)	20 (143)	21 (180)
Angina	17 (3)	30 (35)	12 (82)	14 (120)
Other	17 (3)	18 (21)	19 (136)	19 (160)

TABLE 4 - CLINICAL INDICATORS AMONG PATIENTS COMPLETING ≥ 12 VISITS, MONTANA OUTCOMES PROJECT - 2008.

	Total
Blood pressure	Mean/Median (Min.-Max.)
Mean SBP (N = 705)	117.9/118.0 (79.3-172.0)
Mean DBP (N = 705)	67.9/67.7 (40.7-99.3)
	% (n)
Blood pressure at goal (N = 705)	90 (637)
LDL cholesterol	Mean/Median (Min.-Max.)
LDL (N = 622)	86.6/81.0 (16-218)
	% (n)
Lipid lowering medication (N = 662)*	94 (622)
Lipid lowering contraindication (N = 562)	8 (45)
LDL at goal (N = 622)	73 (457)
	% (n)
A1c test completed (N = 144)**	88 (126)

*Excludes 45 patients with lipid lowering meds (LLM) contraindication [16 of these patients are on LLM]
**Excludes 13 patients with diabetes who did not have documentation

TABLE 5 – CLINICAL/HEALTH/BEHAVIORAL INDICATORS AMONG PATIENTS COMPLETING ≥12 VISITS, MONTANA OUTCOMES PROJECT - 2008.

DASI MET (completing both pre and post surveys)*	Mean/Median (Min. – Max.)
Pre (N = 649)	5.5/5.0 (3.0-10.1)
Post (N = 649)	7.3/7.0 (3.1-10.9)
Percent mean change	32.7
Physical SF-36 (n = 560)*	
Pre	36.9/36.7 (9.4-61.6)
Post	45.8/46.4 (18.4-64.5)
Percent mean change	24.1
Mental SF-36 (n = 560)*	
Pre	47.2/49.0 (6.3-74.0)
Post	52.2/54.0 (14.0-75.0)
Percent mean change	10.6
Dartmouth (n = 84)*	
Pre	22.0/21.0 (13-40)
Post	15.9/15.0 (9-31)
Percent mean change	27.7
Fat screen (completing both pre and post screens)*	
Pre (N = 642)	19.6/19.0 (0-57)
Post (N = 642)	14.7/14.0 (0-46)
Percent mean change	25.0

* P<0.001

QUALITY IMPROVEMENT

After a complete year of data collection, the CVH Program and MACVPR Outcomes Committee reviewed each program's data and recommended specific QI projects. In addition, a regional QI teleconference was offered to programs focusing on dietary fat reduction.

CONCLUSION

Our findings suggest that a collaboration between MACVPR, CVHP and individual cardiac rehab programs is feasible. The regional outcomes data has provided direction in developing QI activities geared toward improving patient care. Efforts are underway to expand the outcomes project. Currently, programs from Michigan, Minnesota, North Dakota, South Dakota, Montana, Wyoming, Washington, Arizona and California are taking part in the outcomes project.

For more information please visit:
http://www.angelfire.com/mt2/macvpr/Outcomes_Project.html

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