LOCAL NEEDS ASSESSMENT:

Regional Hospital Admissions Data for 2003-2005 – Alcohol/Drug Abuse and Suicidal Behavior Diagnoses

Needs Assessment Purpose

The Prevention Policy Board of the CPP-Garfield County project uses data on local conditions related to alcohol and substance abuse and collateral conditions for understanding the needs for action on substance abuse prevention. This report looks at data from medical hospitals in the region for information about substance abuse and suicidal behavior from admission diagnoses.

Assessment Method

The Colorado Health and Hospital Association compiles databases on persons admitted to hospitals throughout the state. Under a user agreement with CHHA, Community Health Initiatives analyzed selected data for Aspen Valley Hospital, Grand River Medical Center, Vail Valley Medical Center, and Valley View Hospital for calendar years 2003, 2004, and 2005. CHHA queried the database for these hospitals and these years, seeking persons with discharge diagnoses that included either alcohol or drug abuse or diagnoses related to suicidal behavior. Demographic and other data elements were included in an SPSS file provided to CHI. These were analyzed and statistics are reported in the Appendix of this report. Conclusions from the data analysis are presented in the following sections.

Diagnostic Groups: Alcohol/Drug Abuse and Suicidal Behavior

During 2003-2005, a total of 275 persons was discharged from the four regional hospitals (see table 1, page 5 in the Appendix); 47 (17.1%) were alcohol/drug abuse related and 228 (82.9%) had diagnoses related to suicidal behavior.

Hospital Use of the Diagnostic Categories Statistical analyses yielded the following findings:

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- Substance Abuse Diagnoses Doctors at Aspen Valley Hospital (AVH) gave the most substance abuse diagnoses, with Vail Valley Medical Center (VVMC) next, followed by significantly fewer at Valley View Hospital (VVH) and Grand River Medical Center (GRMC).
- Suicidal Behavior Diagnoses VVMC gave significantly more diagnoses that involved suicidal issues than the other hospitals.
- GRMC admitted no patients who were given a substance abuse diagnosis

Diagnostic Group Admissions Over the Years The number of diagnoses made in these two groups rose, decreased, and then increased during this time. There were no significant differences in the proportion of substance abuse to suicidal behavior diagnoses with the passage of time. (See Figure 1.)

Diagnostic Group Admissions During the Calendar Year There was a tendency for fewer admissions in both diagnostic groups during the summer months, with the highest rates in December and then again in late winter. These trends were the same for substance and suicidal behavior diagnoses. (See Figure 2).

Diagnostic Groups and Patient Characteristics

- Gender Significantly more women patients were given diagnoses related to suicidal behavior and significantly more men diagnoses linked to substance abuse.
- Age The age of persons admitted with an alcohol or drug-related diagnosis ranged from early adolescence to the late 80's, with an average of 41.13 years. Persons with a suicidal behavior diagnosis had a similar age range, with a mean of 39.02. These age differences were not statistically significant.
- Ethnicity Anglo and Latino patients were equally likely to receive the suicidal behavior and substance abuse diagnoses.

Admission, Hospital Stay and Discharge Status

- Admission Table 6 shows the routes by which patients gained access to the hospitals; paths differed for the diagnostics groups. Persons who were ultimately give an alcohol/drug abuse diagnoses were more likely to be referred from a physician, while those with the mental health/suicidal risk came through the emergency room. All persons admitted from jails had alcohol/drug problems and nearly all referrals from clinics and related operations involved suicidal behavior.
- Length of Stay A highly significant difference in length of stay was determined. Alcohol/drug abuse patients stayed an average of 9.98 days and those with a suicidal-related diagnosis only 3.59. In part, this is attributed to some of the former patients being admitted with injuries and some of the latter being seen only in emergency services and having overnight stays.

- Primary Pay Source Table 8 shows all sources of payment for hospitalized patients. The most likely payor for an alcohol/drug abuse diagnosis is an insurance program, such as Blue Cross, Blue Shield, or an HMO/PPO. More patients in this diagnostic group had Medicare or Medicaid coverage or costs were paid by the Colorado Medically indigent plan. By comparison, those with the mental health diagnoses paid for their own hospitalization, used Workers' Comprehensive coverage, or some form of commercial insurance.
- Hospital Costs While alcohol/drug abuse patients remained in the hospital longer, the average cost of their total care was no greater than for those with a suicidal behavior diagnosis. Both incurred expenses in the range of $20-$22 thousand (see Table 9).
- Discharge Most patients were discharged to their homes, however, there were statistical differences between the diagnostic groups in other discharge destinations. Persons with a mental health diagnosis were more likely to continue inpatient treatment in a psychiatric facility, while those with an alcohol diagnosis went to their own residences with a home health care follow-up.

Conclusions

This study to expand the Prevention Policy Board's knowledge of substance abuse and related conditions, examined the diagnoses given to persons admitted to the region's general medical hospitals.

Though data compiled by the Colorado Health and Hospital Association is extensive, this study found that patient diagnoses are so affected by local practices and policies that final counts for any one diagnosis cannot be used as an indication of the absence or presence of the problem in that jurisdiction. For example, GRMC in Rifle gave no diagnoses of alcohol or substance abuse during 2003-2005 while Aspen's AVH, a relatively small facility, admitted 25.5% of all regional patients with this diagnosis. These extremes may not accurately reflect conditions in the surrounding communities. Counting hospital diagnoses is probably an inaccurate method for estimating the local prevalence for either diagnostic condition. At the same time, it cannot be ignored that the two hospitals serving the Roaring Fork River Valley reported higher rates of alcohol/drug abuse and that the Eagle River Valley reports more persons with depression/suicide diagnoses.

Further, data show that as years pass, the number of these diagnoses applied to patients will rise and fall. Some years, far fewer persons are diagnosed with substance abuse, even though circumstances in the population may not suggest reasons for these cycles. That the proportion of all these diagnoses stays the same, year in and year out, does show that causal factors exist, nevertheless, hospital diagnoses are problematical as outcome indicators for community programs. Diagnostic totals will probably change from one year to the next whether a community program is operating or not. That the number of diagnoses rises and falls across the calendar months is a further caution in using these data for either estimating need or measuring community-level program effects.

Other data in this study offer much more promising application for prevention programs. For example, analysis found that about 40% of all persons hospitalized in the two

diagnostic groups originated with a referral from a physician's office or clinic setting. Further, most of the remainder came through the emergency room of the regional hospitals. Physicians and advanced practice nurses in these settings probably see hundreds if not thousands of persons pass by who suffer with alcohol/drug problems or depression/suicidal behavior issues. Hospital data show they are key gatekeepers in regulating the flow of patients to hospitals, but they are also in a central position for prevention or early intervention with individuals who are seen in the community and not hospitalized.

Data on gender can guide prevention. For substance abuse, attention should be paid to venues that reach males and for the depression/mental health diagnostic group, to those in which females are involved. While the mean ages were about 40, patients were admitted from the pre-teens through the 80's. Payor data further suggest that there are substantial proportions of older adults with these two problems. Prevention action should be so diverse that persons of all ages can benefit. Locally, persons with below-average income may have higher rates of both alcohol/drug and mental health diagnoses.

That nearly all persons treated in hospitals go home shows another opportunity for prevention action. Across Garfield County there are hundreds of families with a member or close friend with an alcohol or mental health condition that has recently required hospital treatment. Were these individuals to be educated on how that could be of assistance, then not only would they lend support to discharged patients, but strengthen the resistance of those closest to them to these costly and disabling conditions.

APPENDIX

Regional Hospital Admissions Data for 2003-2005: Alcohol/Drug Abuse or Suicidal Behavior Diagnoses

Data Analysis Tables

1. Hospital Name by Diagnostic Group: Alcohol/Drug Abuse or Suicidal Behavior[1, 2]

Hospital		Diagnostic Group		Total
		Alcohol/Drug Abuse	Suicidal Behavior	
Aspen Valley Hospital	Persons	12	32	44
	% Hospital	27.3%	72.7%	100.0%
	% Diagnosis	25.5%	14.0%	16.0%
Grand River Medical Center	Persons	0	8	8
	% Hospital	.0%	100.0%	100.0%
	% Diagnosis	.0%	3.5%	2.9%
Vail Valley Medical Center	Persons	17	133	150
	% Hospital	11.3%	88.7%	100.0%
	% Diagnosis	36.2%	58.3%	54.5%
Valley View Hospital	Persons	18	55	73
	% Hospital	24.7%	75.3%	100.0%
	% Diagnosis	38.3%	24.1%	26.5%
Total	Persons	47	228	275
	% Hospital	17.1%	82.9%	100.0%
	% Diagnosis	100.0%	100.0%	100.0%

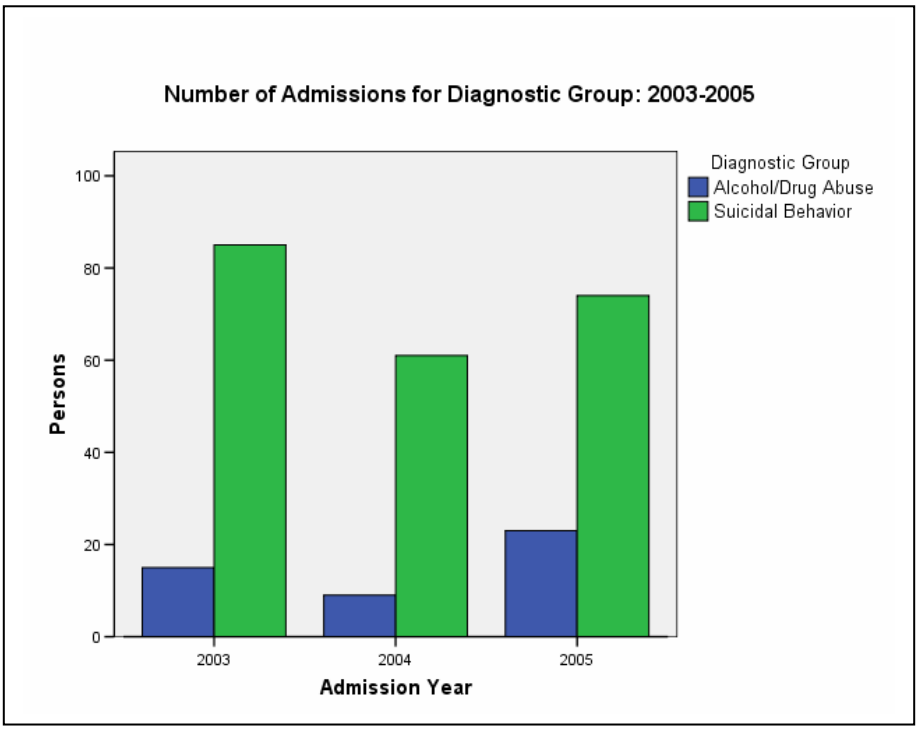
[1] "% Hospital" is percentage of persons in this row category who are of each diagnostic group. (Of AVH patients with these diagnoses, 27.3% had an A&D diagnosis, while 72.7% had a Suicidal behavior diagnosis.) "% Diagnosis" is the percentage of all persons in this diagnostic category who were in each hospital. (25.5% of all persons in the A&D group were from AVH, 0% were from GRMC.)
[2] *Chi-Square* = 11.003, p < .010

2. Hospital Name by Diagnostic Group (Excludes GRMC)

Hospital		Diagnostic Group		Total
		Alcohol/Drug Abuse	Suicidal Behavior	
Aspen Valley Hospital	Persons	12	32	44
	% Hospital	27.3%	72.7%	100.0%
	% Diagnosis	25.5%	14.5%	16.5%
Vail Valley Medical Center	Persons	17	133	150
	% Hospital	11.3%	88.7%	100.0%
	% Diagnosis	36.2%	60.5%	56.2%
Valley View Hospital	Persons	18	55	73
	% Hospital	24.7%	75.3%	100.0%
	% Diagnosis	38.3%	25.0%	27.3%
Total	Persons	47	220	267
	% Hospital	17.6%	82.4%	100.0%
	% Diagnosis	100.0%	100.0%	100.0%

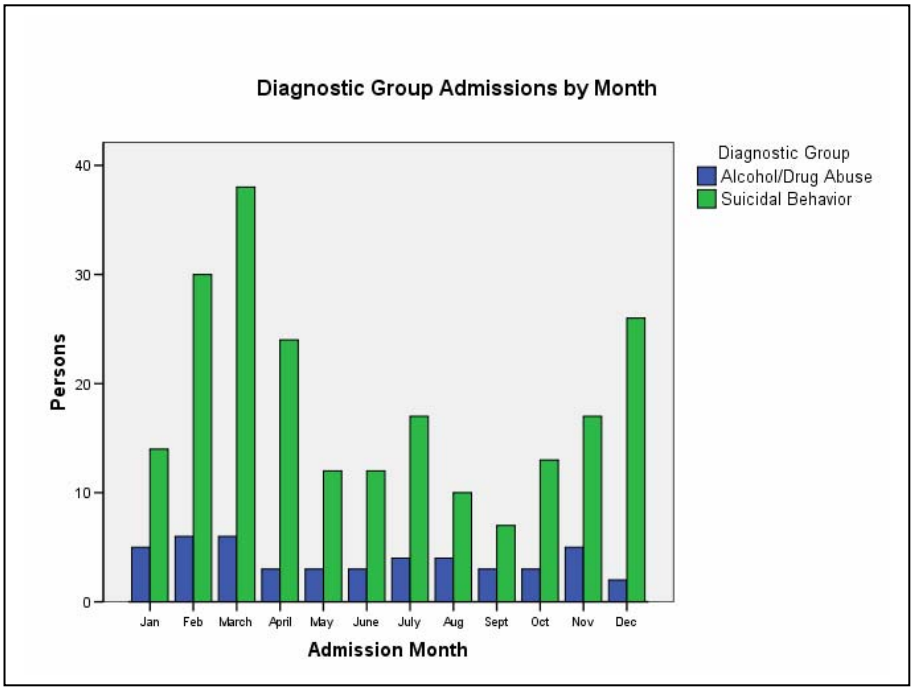
[1] *Chi-Square* = 9.41, p < .009

Figure 1



Chi-Square = 4.05, p < .132

Figure 2



Chi-Square = 7.17, p < .785

3. Patient Gender by Diagnostic Group

Patient Gender		Diagnostic Group		Total
		Alcohol/Drug Abuse	Suicidal Behavior	
Female	Persons	20	153	173
	% Gender	11.6%	88.4%	100.0%
	% Diagnosis	42.6%	69.5%	64.8%
Male	Persons	27	67	94
	% Gender	28.7%	71.3%	100.0%
	% Diagnosis	57.4%	30.5%	35.2%
Total	Persons	47	220	267
	% Gender	17.6%	82.4%	100.0%
	% Diagnosis	100.0%	100.0%	100.0%

[1] *Chi-Square* = 12.40, p < .000

4. Mean Age (Years) for Diagnostic Groups

	Any Alcohol/Drug Abuse or Suicide Diagnosis	Persons	Mean	t	Significance
Patient Age in Years	Alcohol/Drug Abuse	39	41.13	.77	.443
	Suicidal Behavior	215	39.02		

5. Patient Ethnicity by Diagnostic Group

	Ethnicity	Diagnostic Groups		Total
		Alcohol/Drug Abuse	Suicidal Behavior	
Anglo	Persons	26	169	195
	% Ethnicity	13.3%	86.7%	100.0%
	% Diagnosis	83.9%	90.4%	89.4%
Latino	Persons	5	18	23
	% Ethnicity	21.7%	78.3%	100.0%
	% Diagnosis	16.1%	9.6%	10.6%
Total	Persons	31	187	218
	% Ethnicity	14.2%	85.8%	100.0%
	% Diagnosis	100.0%	100.0%	100.0%

[1] *Chi-Square* = 1.16, p .275

6. Source of Admission by Diagnostic Group

Source of Admission		Diagnostic Group		Total
		Alcohol/Drug Abuse	Suicidal Behavior	
Physician Referral	Persons	16	55	71
	% Source	22.5%	77.5%	100.0%
	% Diagnosis	37.2%	25.2%	27.2%
Clinical Referral	Persons	1	21	22
	% Source	4.5%	95.5%	100.0%
	% Diagnosis	2.3%	9.6%	8.4%
Emergency Room	Persons	23	142	165
	% Source	13.9%	86.1%	100.0%
	% Diagnosis	53.5%	65.1%	63.2%
Court-Jail-Prison	Persons	3	0	3
	% Source	100.0%	.0%	100.0%
	% Diagnosis	7.0%	.0%	1.1%
Total	Persons	43	218	261
	% Source	16.5%	83.5%	100.0%
	% Diagnosis	100.0%	100.0%	100.0%

[1] *Chi-Square* = 20.15, p < .000

7. Mean Length of Stay (Days) for Diagnostic Groups

	Diagnostic Group	Persons	Mean	t	Significance
Length of Stay	Alcohol/Drug Abuse	47	9.98	6.14	.000
	Suicidal Behavior	220	3.59		

8. Primary Pay Source by Alcohol/Drug Abuse or Suicidal Behavior Diagnostic Group[1, 2]

Primary Pay Source		Diagnosis		Total
		Alcohol/Drug Abuse	Suicidal Behavior	
BX/BS	Persons	3	22	25
	% Source	12.0%	88.0%	100.0%
	% Diagnosis	6.4%	9.7%	9.1%
Commercial Ins	Persons	5	37	42
	% Source	11.9%	88.1%	100.0%
	% Diagnosis	10.6%	16.3%	15.3%
No Fault HMO	Persons	1	3	4
	% Source	25.0%	75.0%	100.0%
	% Diagnosis	2.1%	1.3%	1.5%
Medicare	Persons	7	14	21
	% Source	33.3%	66.7%	100.0%
	% Diagnosis	14.9%	6.2%	7.7%
Medicaid	Persons	6	8	14
	% Source	42.9%	57.1%	100.0%
	% Diagnosis	12.8%	3.5%	5.1%
Workers Comp	Persons	1	24	25
	% Source	4.0%	96.0%	100.0%
	% Diagnosis	2.1%	10.6%	9.1%
HMO/PPO	Persons	21	75	96
	% Source	21.9%	78.1%	100.0%
	% Diagnosis	44.7%	33.0%	35.0%
Self-Pay	Persons	1	39	40
	% Source	2.5%	97.5%	100.0%
	% Diagnosis	2.1%	17.2%	14.6%
Charity - No Pay	Persons	0	1	1
	% Source	.0%	100.0%	100.0%
	% Diagnosis	.0%	.4%	.4%
Colorado Medically Indigent	Persons	2	4	6
	% Source	33.3%	66.7%	100.0%
	% Diagnosis	4.3%	1.8%	2.2%
Total	Persons	47	227	274
	% Source	17.2%	82.8%	100.0%
	% Diagnosis	100.0%	100.0%	100.0%

[1] "% Source" is percentage of persons with this primary payer who are of each diagnostic group (12.0% of A&D diagnosis have BX/BS, while 88% of Suicide group have this payer). "% Diagnosis" is percentage of persons with this diagnosis who have this primary payer (6.4% of all A&D group have BX/BS, 10.6% used commercial insurance, etc.).
[2] *Chi-Square* = 23.74, $p < .005$

9. Average of Total Hospital Charges by Diagnostic Group[1, 2]

Diagnosis	Persons	Mean
Alcohol/Drug Abuse	47	$20,694.89
Suicidal Behavior	227	$21,990.17

[1] Minimum charge = $1794.00, maximum charge = $110,891.00
[2] *t-test* = .43, p < .669

10. Discharge Disposition by Diagnostic Group[1]

Discharge Disposition		Diagnostic Group		Total
		Alcohol/Drug Abuse	Suicidal Behavior	
Home	People	40	191	231
	% Disposition	17.3%	82.7%	100.0%
	% Diagnosis	87.0%	86.0%	86.2%
Acute Hospital - Short Term	People	2	9	11
	% Disposition	18.2%	81.8%	100.0%
	% Diagnosis	4.3%	4.1%	4.1%
Skilled Nursing Facility	People	0	4	4
	% Disposition	.0%	100.0%	100.0%
	% Diagnosis	.0%	1.8%	1.5%
Rehab Facility	People	0	15	15
	% Disposition	.0%	100.0%	100.0%
	% Diagnosis	.0%	6.8%	5.6%
Home Health Care	People	4	1	5
	% Disposition	80.0%	20.0%	100.0%
	% Diagnosis	8.7%	.5%	1.9%
Left AMA	People	0	2	2
	% Disposition	.0%	100.0%	100.0%
	% Diagnosis	.0%	.9%	.7%
Total	People	46	222	268
	% Disposition	17.2%	82.8%	100.0%
	% Diagnosis	100.0%	100.0%	100.0%

[2] *Chi-Square* = 18.25, p < .003