Cost Studies at Northern California Kaiser Permanente

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Association of California
Sacramento, California
January 28, 2010
Acknowledgements
Studies funded by NIAAA, NIDA, RWJF, CSAT/SAMHSA, and Community Benefits, Kaiser Permanente

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  • Chemical Dependency Quality Improvement Committee
Overview

• Approach and rationale for cost studies
  – Business case to be made
  – Different interventions/different patient characteristics

• Overview of study examples at Kaiser
  – Adult studies
  – Adolescent studies
  – Family studies

• Applicability to other systems
  – “thousands of flowers blooming”
Approach and Rationale

• Context of a health plan
  – Employers are primary purchasers

• Alcohol and drug problems as primary problems and as risk factors for other health conditions

• Treatment can be effective

• Not treating them causes lack of improvement in other health conditions (and problems in work productivity)

• Not treating them causes more ER and inpatient utilization

• Not treating them causes health problems and cost for family members

• Who are the main stakeholders?
Recommendations for SBIRT in General Health Care Settings

National Institute on Alcohol Abuse and Alcoholism, 1995, 2003
American Society of Addiction Medicine, 1997
American Medical Association, 1999
National Quality Forum, 2007
Office on National Drug Control Policy, 2009
Rankings of Preventive Services

National Commission on Prevention Priorities

25 USPSTF- recommended services ranked by:

Clinically preventable burden (CPB)-
How much disease, injury, and death would be prevented if services were delivered to all targeted individuals?

Cost-effectiveness (CE)- return on investment
How many dollars would be saved for each dollar spent?


## Rankings of Preventive Services

<table>
<thead>
<tr>
<th>#</th>
<th>Service</th>
<th>CPB</th>
<th>CE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aspirin- Men- 40+, Women- 50+</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Childhood immunizations</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Smoking cessation</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Alcohol screening &amp; intervention</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Colorectal cancer &amp; treatment</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>Hypertension screening &amp; treatment</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>Influenza immunization</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>Vision screening – 65+</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

For rankings: 1 = highest, 5 = lowest
For CPB/CE: 1=lowest; 5 = highest


## Rankings of Preventive Services (cont.)

<table>
<thead>
<tr>
<th>#</th>
<th>Service</th>
<th>CPB</th>
<th>CE</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Cervical cancer screening</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>Cholesterol- men 35+, women 45+</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>Pneumococcal immunization</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>Breast cancer screening</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>13</td>
<td>Chlamydia screening – women &lt;25</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>Calcium supplementation- women</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>15</td>
<td>Vision screening – preschool children</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>16</td>
<td>Folic acid supplementation - women</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

For CPB/CE: 1=lowest; 5 = highest


### Rankings of Preventive Services (cont.)

<table>
<thead>
<tr>
<th>#</th>
<th>Service</th>
<th>CPB</th>
<th>CE</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Obesity screening - adults</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>18</td>
<td>Depression screening – adults</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>Hearing screening – adults 65+</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>Injury prevention- young children</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>21</td>
<td>Osteoporosis screening</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>22</td>
<td>Cholesterol- high-risk, younger</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>23</td>
<td>Diabetes screening- adults at risk</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>24</td>
<td>Diet counseling- adults at risk</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>25</td>
<td>Tetanus- diphtheria booster- adults</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

For CPB/CE: 1=lowest; 5 = highest

For rankings: 1= highest 25=lowest


HEDIS Measures for Alcohol and Drugs

Initiation of Alcohol and Drug Dependence Treatment

Engagement of Alcohol and Drug Dependence Treatment
NIAAA Physician’s Guide

- How many times in the past year have you had
  - 5 or more drinks in a day (14/week)? (for men)
  - 4 or more drinks in a day (7/week)? (for women)

- On average, how many days a week do you have an alcoholic drink?
- On a typical drinking day, how many drinks do you have?

Quality of Care Varied Substantially Across Conditions

Approaches to examine cost
Approaches to examine cost

• First – examine outcome (especially for cost-effectiveness
• Examine full costs to programs
• Examine period prior to treatment and after treatment
  • Avoid biasing the cost by the ramp-up of costs that often precedes treatment
  • Make a distinction between primary care costs and inappropriate costs (ER and inpatient)
• Use the denominator of all intakes
• Emphasize the medical conditions associated with alcohol and drug problems
• Argue for continuing care conceptual approach
Adult Studies

- Epidemiology of problems
- Outcomes
- Costs
Prevalence in Substance Abuse Patients Vs. Matched Controls

Conditional Logistic Regression Results: $p<0.01$ for all conditions shown

CD Patients and Matched Health Plan Members: ICD-9 Psychiatric Conditions *

<table>
<thead>
<tr>
<th></th>
<th>CD Patients (N=747)</th>
<th>Matched Members (N=3,690)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressive Disorders</td>
<td>28.5%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Anxiety Disorders</td>
<td>17.1%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Psychoses</td>
<td>6.7%</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

*all p<.001

Adults in Treatment with Substance Abuse Medical Conditions: Medical Services Predicting Abstinence at 6 Months

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>O.R.</th>
<th>95% C.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated Medical Care (vs. Usual Care)</td>
<td>1.90</td>
<td>(1.22, 2.96)</td>
</tr>
</tbody>
</table>

Controlling for baseline alcohol ASI severity and baseline drug ASI severity

Short and Long-Term Costs
Medical Costs after Treatment for Integrated Medical Care for Those with Substance Abuse-Related Medical Conditions

### 18 months Pre & Post Treatment: Average Medical Cost/Member Month (± SE)

<table>
<thead>
<tr>
<th></th>
<th>Pre-treatment</th>
<th>Post-treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Cohort</td>
<td>$239 (±$21)</td>
<td>$208 (± $23)</td>
</tr>
<tr>
<td>Matched Sample</td>
<td>$109 (± $5)</td>
<td>$103 (± $6)</td>
</tr>
</tbody>
</table>

Treatment group had a 26% reduction in cost, and had reduced ER and hospitalizations post treatment (p<.01) compared to matched controls.

General estimating equation (GEE) methods

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Psychiatric Services Predicting Abstinence at Five-Years (among adults with psychiatric symptoms after CD Treatment)

2.1 or more hours psychiatric services/yr vs. less/none O.R. = 2.22, p<.01

Logistic regression controlling for age, gender, type of dependence, abstinence goal, readmission, # of AA meetings, recovery-oriented social support, treatment intensity

The Role of Primary Care Services in 5-Year Outcome
# Model Predicting Remission at Five Years Among Those with SAMCs\(^1\) (n=333)

<table>
<thead>
<tr>
<th>Predictors:</th>
<th>Odds Ratio</th>
<th>95% C.I.</th>
<th>(p)-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-10 Visits (vs. 0-1)</td>
<td>4.12</td>
<td>1.33 -12.82</td>
<td>0.014</td>
</tr>
<tr>
<td>11+ Visits (vs. 0-1)</td>
<td>2.32</td>
<td>0.77 -7.04</td>
<td>0.137</td>
</tr>
</tbody>
</table>

\(^1\)Controlling for age group, and ASI alcohol severity

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What might continuing care for substance use problems look like?

Lessons from disease management

Screen and treat in PC if moderate problem
Continue monitoring
Specialty care if needed
Back to PC for monitoring

Continuing care


Continuing Care

- Alcohol and drug treatment when needed
- Psychiatric services when needed
- Primary care at least every day

- WHY IN PRIMARY CARE?
Continuing Care Outcomes

• Patients receiving continuing care were more than twice as likely to be remitted at each follow-up over 9 years (p<.0001)*
  – Particular ingredients were CD readmissions when needed and regular primary care. (Psychiatric services alone was not significant)

* mixed-effects logistic regression model controlling for time/follow-up wave, demographic characteristics, severity at each timepoint
Continuing Care Cost Impacts

• Those receiving continuing care in the prior interval were less likely to have ER visits and hospitalizations subsequently (\(<-.05\)).*
  
  – The moderating effect of remission status on the relationship was not significant. (Receiving continuing care reduces inappropriate utilization, even when not in remission).
Adolescent Studies
Study Setting

- Kaiser Permanente Medical Care Program of Northern California
- Four outpatient alcohol and drug abuse treatment programs from the Northern California region.
- Non-profit, group practice prepaid HMO
- 3.4 million members (39% of commercially insured population)
- “Carved-in” chemical dependency services and psychiatry
Data Sources

- Baseline interviews with adolescents (and a parent collateral) at intake to CD treatment at 4 Kaiser sites

- Follow-up interviews with adolescents and parents at 6 months and 1, 3 and 5 years (Response rates = 92%, 92%, 86% and 85%, respectively)

- Clinical diagnoses from automated records

- Health plan administrative utilization and cost databases
Adolescent CD Patients & Matched Controls

**Sample:**
- 419 adolescents, aged 13-17 (143 girls, 276 boys)
- **Ethnicity:**
  - 9% Native American/Asian
  - 16% African-American
  - 20% Hispanic
  - 49% White

**Matched Controls:**
- 2084 adolescents from the health plan
- No alcohol or drug history
- Matched on gender, age, length of health plan enrollment, and geographic area.

## Substance use (%) in past 6 months at treatment entry

<table>
<thead>
<tr>
<th>Substance</th>
<th>Girls</th>
<th>Boys</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any alcohol</td>
<td>92</td>
<td>80</td>
<td>.004</td>
</tr>
<tr>
<td>3+ drinks of alcohol at one time</td>
<td>66</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>5+ drinks of alcohol at one time*</td>
<td>50</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>Marijuana</td>
<td>90</td>
<td>91</td>
<td></td>
</tr>
<tr>
<td>Tobacco</td>
<td>76</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>30</td>
<td>27</td>
<td>.003</td>
</tr>
<tr>
<td>Stimulants</td>
<td>31</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Party drugs</td>
<td>37</td>
<td>15</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Sedatives</td>
<td>17</td>
<td>6</td>
<td>.0008</td>
</tr>
<tr>
<td>Opiates or painkillers**</td>
<td>30</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Cocaine (powder or crack)</td>
<td>24</td>
<td>12</td>
<td>.002</td>
</tr>
<tr>
<td>Heroin</td>
<td>5</td>
<td>&lt;1</td>
<td>.003</td>
</tr>
</tbody>
</table>

*Risk factor for boys reporting multiple HIV risk behaviors

**Risk factor for girls reporting multiple HIV risk behaviors


Alcohol use 2-3 times or more each month in the 6 months prior to treatment entry

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any alcohol</td>
<td>68 %</td>
</tr>
<tr>
<td>3+ drinks at one time</td>
<td>34 %</td>
</tr>
<tr>
<td>5+ drinks at one time</td>
<td>24 %</td>
</tr>
</tbody>
</table>

**Main beverage type:**

- Hard liquor: 57 %
- Beer: 24%
- Malt liquor: 14 %
- Wine coolers: 3%
- Fortified wine: 1 %
- Wine: 1%
<table>
<thead>
<tr>
<th>Medical Conditions among Adolescent CD Treatment Intakes (%)</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal Pain</td>
<td>5.7</td>
</tr>
<tr>
<td>Respiratory System Cond.</td>
<td>37.8</td>
</tr>
<tr>
<td>Gastroenteritis</td>
<td>3.9</td>
</tr>
<tr>
<td>Conjunctivitis</td>
<td>3.2</td>
</tr>
<tr>
<td>Muscle Pain</td>
<td>3.9</td>
</tr>
<tr>
<td>Scoliosis</td>
<td>1.3</td>
</tr>
<tr>
<td>Benign Uterine Cond.</td>
<td>3.2</td>
</tr>
<tr>
<td>Injury &amp; Poisoning</td>
<td>36.4</td>
</tr>
<tr>
<td>Urinary Tract Infection</td>
<td>2.0</td>
</tr>
<tr>
<td>STDs</td>
<td>1.5</td>
</tr>
</tbody>
</table>

*One-third of parents reported that their child had chronic health problems (asthma and allergies most commonly). Past pregnancies: 15% of girls

## Psychiatric Conditions of Adolescents in CD Treatment & Matched Controls (%)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Tx Intakes</th>
<th>Controls</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>36.3</td>
<td>4.2</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Anxiety Disorder</td>
<td>16.3</td>
<td>2.3</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Eating Disorders</td>
<td>1.2</td>
<td>0.43</td>
<td>.067</td>
</tr>
<tr>
<td>ADHD</td>
<td>17.2</td>
<td>3.0</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Conduct Disorder</td>
<td>19.3</td>
<td>1.2</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Conduct Disorder (w/ODD)</td>
<td>27.3</td>
<td>2.3</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Any Psychiatric DX</td>
<td>55.5</td>
<td>9.0</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

Gender Differences in Psychiatric Comorbidities: Adolescents in CD Treatment (in %)

<table>
<thead>
<tr>
<th>Risky Behaviors</th>
<th>Boys (N=276) %</th>
<th>Girls (N=143) %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injection drug use (IDU)</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Sharing needles or works</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Never/inconsistent condom use</td>
<td>35</td>
<td>53*</td>
</tr>
<tr>
<td>(of those reporting ever having sex)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex with multiple partners, past 6 months +</td>
<td>39</td>
<td>37</td>
</tr>
<tr>
<td>never/inconsistent condom use</td>
<td>43</td>
<td>52</td>
</tr>
<tr>
<td>Male homosexual activity or female related sexual</td>
<td>3</td>
<td>14*</td>
</tr>
<tr>
<td>activity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Age of Treatment Entry and Long-Term Outcomes

- Younger age predicted abstinence at 3 years:
  - For every year increase in age, the chance of being abstinent is reduced by 22% (p=.04).
Adolescents who received treatment in both CD and Psychiatry had greater odds of being abstinent at 6 months compared to those who received only CD treatment (OR: 1.56, p=.06).

Controlling for gender, age, ethnicity, YSR internalizing & externalizing scores, and severity of substance problems.
Cost Considerations for Earlier Screening

- Medical costs decrease after CD treatment for adults.


- Medical costs for adolescent CD patients did not decrease in the year after treatment as they do for adults.

Distribution of Costs: Cases versus Controls

Distribution of Overall Costs by 6-month Window

Distribution of ER Costs by 6-month Window

- Teen Study Participants
- Teen Matched Sample
Distribution of Costs: Cases versus Controls

Distribution of Hospital Costs by 6-month Window

Distribution of Primary Care Costs by 6-month Window
Summary of Results

• Utilization and costs for adolescents with AOD problems are higher in the year prior to intake than a non-clinical, demographically matched sample. Costs appear to reach a peak in the period immediately preceding intake.

• In the 2 years post intake, costs have declined from the highest pre-treatment levels but continue to remain higher than the non-AOD sample.

• Primary care visits appear to be increasing among all adolescent girls although they appear to do so most rapidly among the AOD sample (not shown).
Medical Costs 3 and 5 Years after Treatment

• At 3 years, both abstainers and non-abstainers had higher average costs than the matched sample (p<.05).
  – Abstainers had higher costs in all departments except ER and inpatient. (They may be obtaining appropriate care to address medical issues or maintain abstinence).

• Preliminary analysis at 5 years shows costs reducing, based on patient characteristics.
One Reason for Continuing Care: Alcohol and Drug Use after Treatment

• 1 year after treatment – doing better, but many not abstinent*
  – 61% abstinent from alcohol
  – 59% abstinent from drugs
  – 47% abstinent from both
  – 36% in remission (non problematic use)

• 3 years after treatment
  – 38% abstinent from alcohol
  – 57% abstinent from drugs
  – 30% abstinent from both
  – 26% in remission

* 30-day abstinence
* Remission: used alcohol but no more than once/week and never more than 2 drinks, OR used marijuana, but only once/month or less, AND b) Used no other drugs (excluding tobacco); AND, c) Had no dependence/abuse symptoms
Costs of Family Members

- What are the medical conditions and costs of family members of individuals with alcohol and drug problems?
  - Compared to matched members in the general membership?
  - Compared to matched members with other chronic diseases?
- Do these costs change after successful treatment?


Health conditions and medical costs of family members of individuals with alcohol and drug problems

Health plan membership-based sample of individuals with AOD diagnoses
Study of Family Members of Individuals with Alcohol and Drug Conditions in Health Plan Membership

Study of Family Members of Individuals with Alcohol and Drug Conditions in Health Plan Membership

Family members of adults with alcohol & drug diagnoses = N=45,677

Comparison family members = N=141,722

Medical Conditions of Adult Family members of Individuals with AOD Disorders and Control Adult Family Members
(all differences significant)

**Medical Conditions**

<table>
<thead>
<tr>
<th>Condition</th>
<th>CD Patients</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma</td>
<td>14.4</td>
<td>11.0</td>
</tr>
<tr>
<td>Lower back pain</td>
<td>10.7</td>
<td>8.8</td>
</tr>
<tr>
<td>Hypertension</td>
<td>9.5</td>
<td>8.7</td>
</tr>
<tr>
<td>Conditions of the uterus</td>
<td>7.3</td>
<td>6.4</td>
</tr>
<tr>
<td>Depression</td>
<td>6.3</td>
<td>3.1</td>
</tr>
<tr>
<td>Headache</td>
<td>6.0</td>
<td>4.8</td>
</tr>
<tr>
<td>Acid related disorders</td>
<td>5.7</td>
<td>5.1</td>
</tr>
<tr>
<td>Asthma</td>
<td>5.7</td>
<td>4.2</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>5.2</td>
<td>3.8</td>
</tr>
<tr>
<td>Otitis media</td>
<td>4.4</td>
<td>3.5</td>
</tr>
<tr>
<td>Diabetes</td>
<td>4.2</td>
<td>4.0</td>
</tr>
<tr>
<td>Alcohol/Drug</td>
<td>3.3</td>
<td>1.8</td>
</tr>
</tbody>
</table>

(all differences significant)
Medical Conditions of Children Family members of Individuals with AOD Disorders and Control Children Family Members

(all differences significant)

<table>
<thead>
<tr>
<th>Medical Conditions</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma</td>
<td>17.4</td>
<td>13.9</td>
</tr>
<tr>
<td>Otitis media</td>
<td>16.9</td>
<td>14.7</td>
</tr>
<tr>
<td>Asthma</td>
<td>9.2</td>
<td>7.2</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>4.7</td>
<td>4.3</td>
</tr>
<tr>
<td>ADD</td>
<td>3.7</td>
<td>1.9</td>
</tr>
<tr>
<td>Headache</td>
<td>2.6</td>
<td>1.9</td>
</tr>
<tr>
<td>Depression</td>
<td>1.8</td>
<td>0.7</td>
</tr>
<tr>
<td>Acid related disorders</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>Alcohol/Drug</td>
<td></td>
<td>0.5</td>
</tr>
</tbody>
</table>
Excess cost of each family member of individuals with alcohol and drug diagnoses over time compared to comparison family members *

- Higher costs in each department within the health plan.

  - 2 years before the index date, excess costs were $490
  - 1 year before the index date, excess costs were $433

*Independent of gender, age, census block income group, and family size
*All differences are statistically significant

Do cost of family members change after successful treatment?
# Combined Treatment Sample at Intake
*(used to study their family members)*

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Age</td>
<td>38 years</td>
</tr>
<tr>
<td>Women</td>
<td>36%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>74%</td>
</tr>
<tr>
<td>African-American</td>
<td>12%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>10%</td>
</tr>
<tr>
<td>Other</td>
<td>4%</td>
</tr>
<tr>
<td>Employed</td>
<td>59%</td>
</tr>
<tr>
<td>High School graduate</td>
<td>86%</td>
</tr>
<tr>
<td>Household income $40K+</td>
<td>45%</td>
</tr>
<tr>
<td>Married/Living as Married</td>
<td>45%</td>
</tr>
<tr>
<td>Had children under age 18</td>
<td>73%</td>
</tr>
</tbody>
</table>
Family Utilization Study:
Family Members of Treatment Sample and Controls

CD Patient

Family members of CD patients in Kaiser CD Treatment studies (N=3221)

= Children (N=2,125)
Spouses (N=1,096)

Matched control

Family members of matched Kaiser Sample (N=17,839)

= Children (N=8,771)
Spouses (N=9,068)

Age
Gender
Census block
Family size
LoE

Family Member Utilization 5 Years after Treatment

• Pre-treatment, families of all treatment patients have higher costs than control families.

• At 2-5 years post-intake, each year family members of AOD patients who were abstinent at 1 year had similar average per member-month medical costs as control family members – they were no longer higher.

• Family members of AOD patients who were not abstinent at 1 year had a trajectory of increasing medical cost relative to control family members. Their costs were higher.

• Successful AOD treatment is related to medical cost reductions for family members; these reductions may be considered a proxy for improved health.

Limitations of Family Study

- Only measured health costs and medical conditions – not other systems or quality of life
- Those who were living in the family but not covered not included
- Family members who left the health plan not included
- Not looking at causal relationships
- Probably conservative findings
Next Steps

- New SBIRT study
- Continuing Care study
- Adaptation to other health systems
Summary/Discussion

• What kinds of services are needed?
  – Where can they be received?
• Importance of involving health care
  – How do people see themselves
• Cost arguments – outcomes, benefits
• Tailoring the business case

Constance.Weisner@kp.org
Distribution of New Admissions\(^1\) of Alcohol Dependent\(^2\) Men in Community Agency Systems

- Primary Care 47.1%
- Criminal Justice 30.8%
- Substance Abuse Treatment 13.2%
- Mental Health 2.3%
- Welfare 6.8%

\(^1\) Data weighted for design effects, non-response, and to a common fieldwork duration so that each agency system sample is shown to its size.

\(^2\) Alcohol dependence rates over a base of alcohol dependent men across all agency systems.
Distribution of New Admissions\(^1\) of Alcohol Dependent\(^2\) Women in Community Agency Systems

- **Primary Care**: 73.2%
- **Welfare**: 6.3%
- **Criminal Justice**: 8.9%
- **Mental Health**: 4.5%
- **Substance Abuse Treatment**: 7.2%

\(^1\) Data weighted for design effects, non-response, and to a common fieldwork duration so that each agency system sample is shown to its size.

\(^2\) Alcohol dependence rates over a base of alcohol dependent women across all agency systems.
Distribution of New Admissions of Female Weekly Drug Users\textsuperscript{2} in Community Agency Systems\textsuperscript{1}

- **Primary Care**: 64%
- **Welfare**: 20%
- **Mental Health**: 3.8%
- **Criminal Justice**: 15.7%
- **Substance Abuse Treatment**: 3.8%

\textsuperscript{1} Data weighted for design effects, non-response, and to a common fieldwork duration so that each agency system sample is shown to its size.

\textsuperscript{2} Weekly drug use rates over a base of women weekly drug users across all agency systems.
Distribution of New Admissions of Male Weekly Drug Users\(^2\) in Community Agency Systems\(^1\)

- **Primary Care**: 28.5%
- **Criminal Justice**: 54%
- **Substance Abuse Treatment**: 6.6%
- **Welfare**: 8.8%
- **Mental Health**: 2.1%

\(^1\) Data weighted for design effects, non-response, and to a common fieldwork duration so that each agency system sample is shown to its size.

\(^2\) Weekly drug use rates over a base of men weekly drug users across all agency systems. (Weighted N=421)