

THE JOHNS HOPKINS UNIVERSITY'S 2006 ACG INTERNATIONAL RISK ADJUSTMENT CONFERENCE

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Medica's Corporate Predictive Modeling Care Management Program

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Overview of Presentation:

- Background
- How we identified the “Predicted High-Cost” Members
- Care Management Process
- Process Measures
- Preliminary cost measures
- Questions/Comments

Medica Company Overview

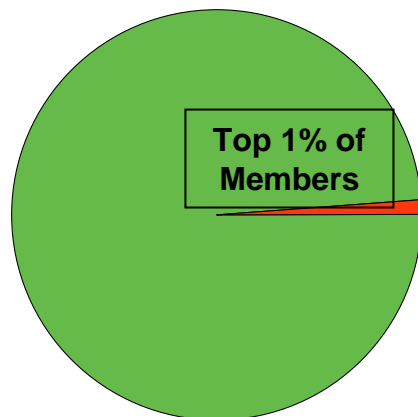
- Non-profit HMO based in Minnesota
- Membership: 1.23 million
- Service area includes MN, parts of Wi, SD, & ND.



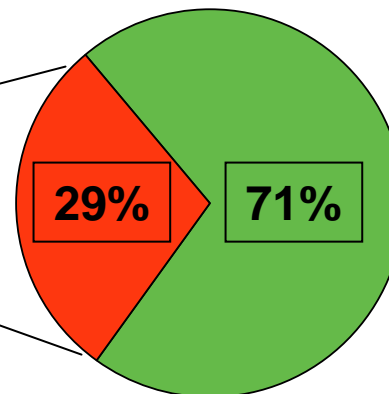
Medica's Interest in Predictive Modeling

- Identify “high-cost” members for care management:
 - Medica's Top 20% of members consume 83% of total medical costs
 - Medica's Top 5% of members consume 54% of total costs
 - Medica's Top 1% of members consume 29% of total costs

**Percent of Members in
Regards to Total Cost**



Total Medical Costs



Medica's Interest in Predictive Modeling

- Identify a manageable number of members who are likely to become high-cost.
- Want to intervene with members BEFORE they become high cost (e.g. instead of identifying members who are already high-cost).
- To have a positive impact on the members health, leading to appropriate healthcare utilization (a “Win-Win”)

Medica's Interest in Predictive Modeling

Medica Corporate goal:

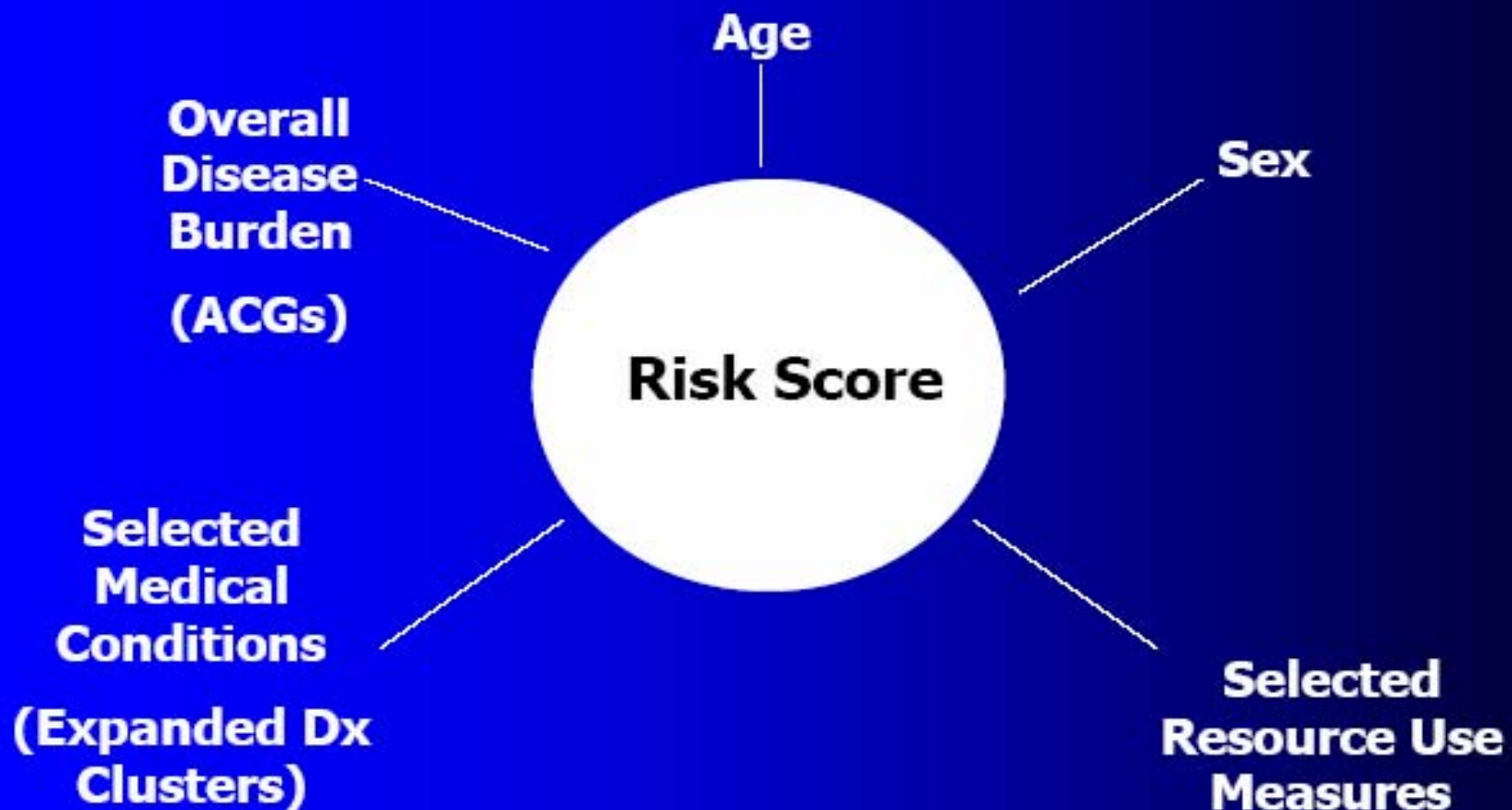
Identify 600 members (using predictive modeling) for enrollment in care management programs that would not otherwise be identified.

How did we identify members?

John Hopkin's PM tool.

- Step 1: Claims Run (N = 527,124)
- Commercial Fully & Self Insured
 - Age \geq 18
 - No minimum enrollment required
 - Latest rolling year claims
 - No claims run out

Risk Factors in the “Johns Hopkins ACG” Predictive Model



Step 2: Include only members with:

- ACG PM Score ≥ 0.4 (top .5% most costly members)

AND

- Low back pain or headache diagnosis

Why? The hook.



Remaining N= 5,117

Step 3: Exclude patients who have been care managed in previous 12 months (including Vendors) and members not currently enrolled.

Final List = 2,378 Members (less than 0.5 percent of members included in the analysis)

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We did not re-run the grouper, but rather held the list of members and continued to sample from that list.



“Breakable bones, a tendency to bleed when cut, vulnerability to germs and viruses. These are all preexisting conditions.”

Next Best Solution = Send Members to Care Management

- Monthly: randomly selected 100 of the 2,378 high risk members for care management.
- After the ramp up process, 200 cases were delivered in November and December.
- Created an Access database for care managers to examine past history of claims.

Send Members to Care Management:

2,378 Members Identified
as “Predicted High-Cost”
by the ACG Tool

Random Assignment

**Send to Care
Management
1,300 Members**

Comparison
Group

Care Management Process

- Receive members identified by CAPE
- After confirming eligibility, review claims and pharmacy utilization via claims look up Summary of Care tool
- Identify top diagnoses and pharmacy utilization categories for possible discussion with member
- Contact member

Care Management Services Provided

- A personalized approach – personal health goals
 - Members who enroll have an average of 6 goals
 - Most common goals related to chronic pain, mental health, weight reduction, and tobacco use.
- On-line research/handouts/pamphlets; e-mail
- Benefit questions/connection with services already part of their insurance plan
- Entrance to primary care

Barriers Encountered

- Reaching the members
- A matter of trust
- Fear that this may be burdensome

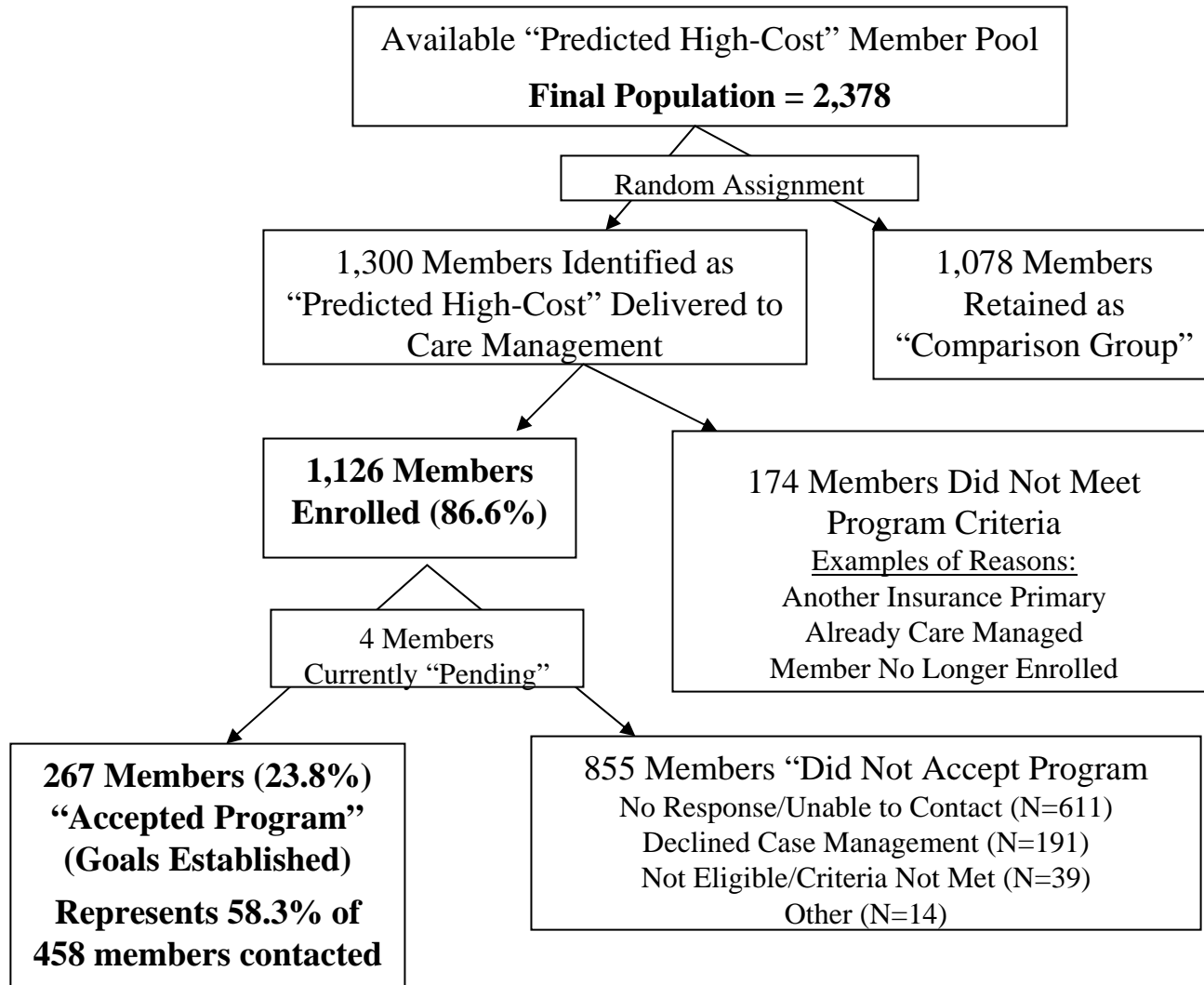
Plans for Evaluation

- We're putting significant resources into this project.

- Process Measures – operationally, is the program “flowing”/working as intended.

- Outcomes Measures - did the healthcare utilization and expenditures change for the intervention group relative to the control group?
 - We're hoping program is a “win-win” for our members (e.g. healthier) and Medica.

Process Measures - Flow



Process – “Flowing” as Intended

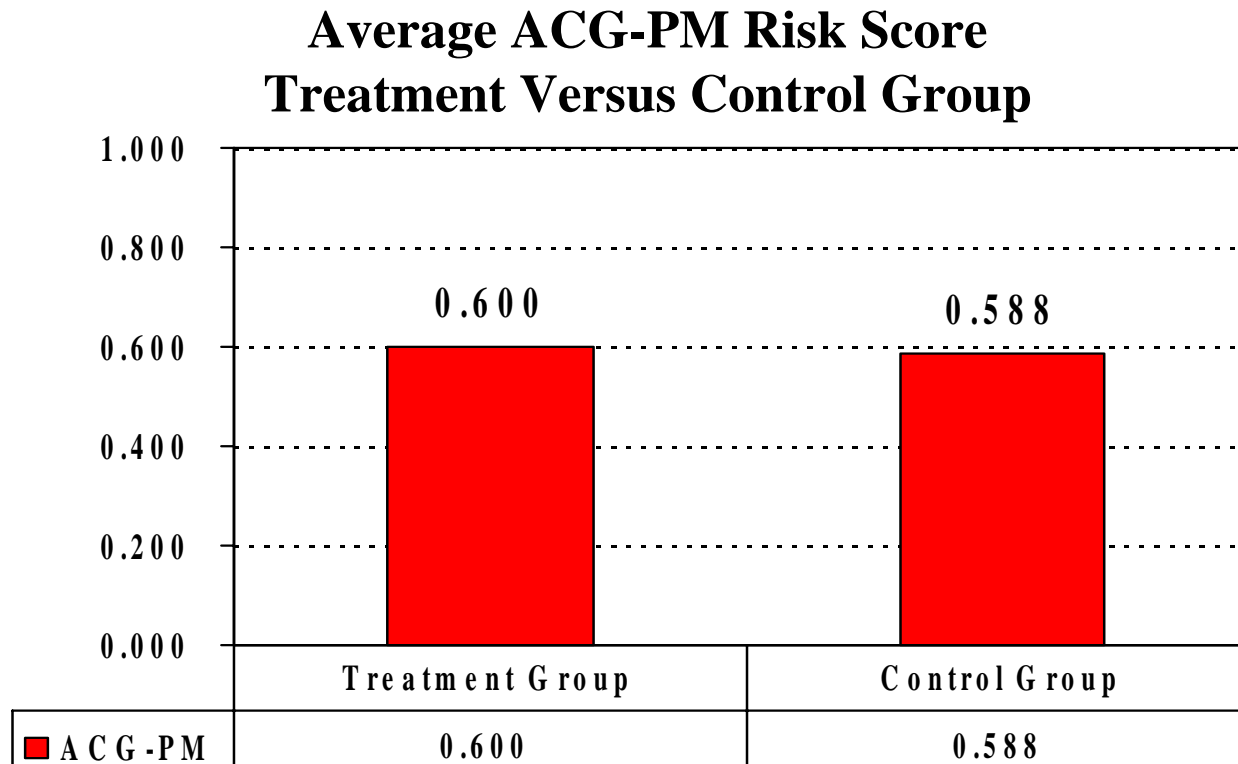
- Able to find a large number of “predicted high-cost” members not previously identified.
- Exceeded our corporate goal! (728 enrolled in 2005)
- Process improved - started sending 200 cases/month. Number of members who agreed to participate increased from approx. 10% in August to over 35% in November.
- Able to intervene sooner – care management nurses report being able to intervene before the “high-cost” events.

Preliminary Findings – Financial Outcomes

- Conducted a preliminary analysis end of August.
- Examined facility, physician, and RX claims during an 18-month period – January 2005 to June 2006 (approx. 7 weeks of run-out) for members continuously enrolled.
- Split into two groups (based on random assignment):
 - Treatment group = 778 members sent to care management between June 2005 and December 2005.
 - Control group = 523 members identified but not sent to care management.
 - Pre-Period – 9 months from Jan. 2005 to Sept. 2005
 - Post-Period – 9 months from Oct. 2005 to June 2006
- Still early yet – we will know more as time passes and more data becomes available.

Preliminary Findings - Financial

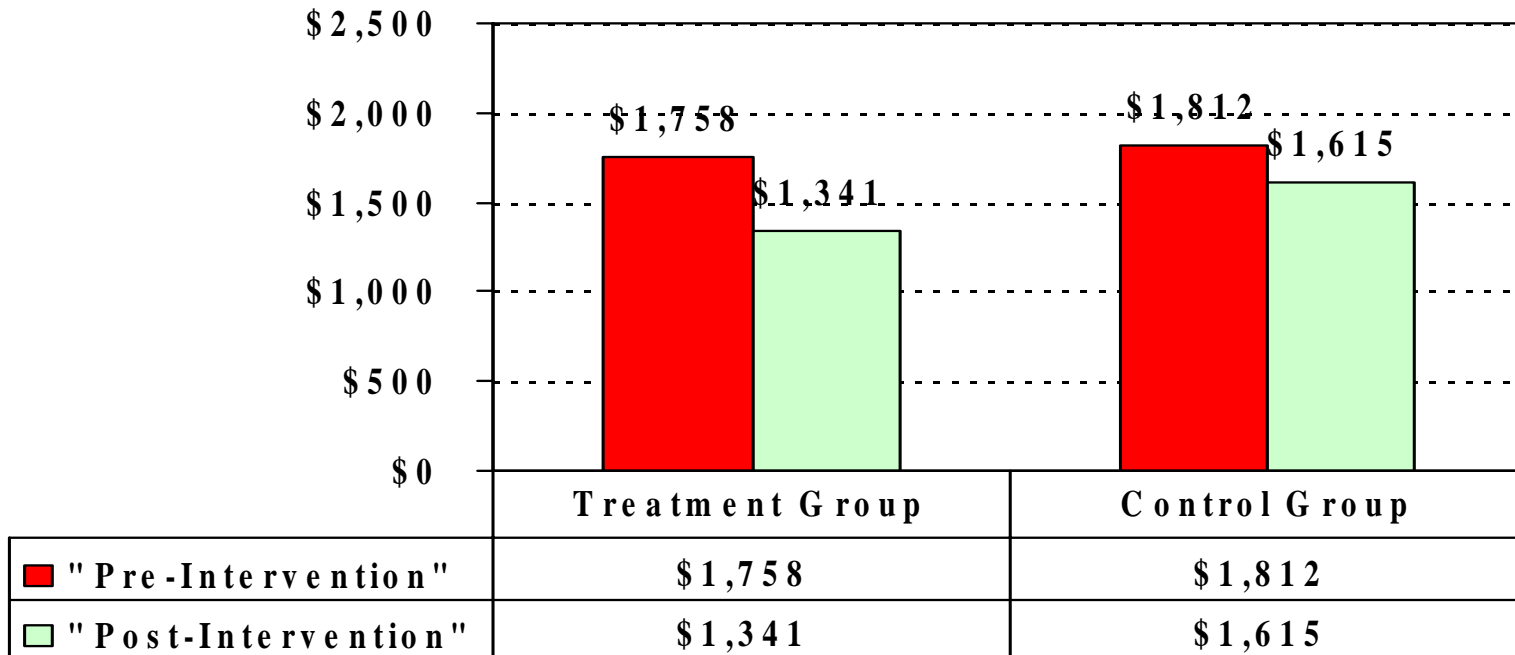
Similar predicted risk between the two groups...



Preliminary Findings - Financial

Treatment group had lower overall claim costs in the post-intervention period compared to the control group...

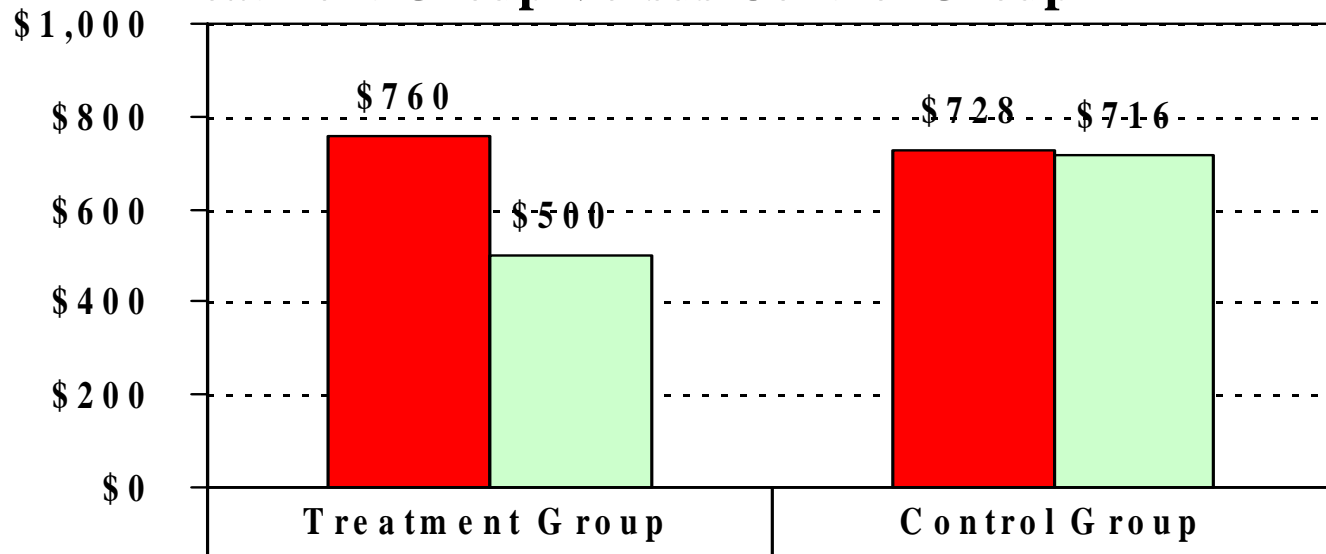
**Average Total (Physician, Facility, and RX) PMPM
Treatment Group Versus Control Group**



Preliminary Findings - Financial

Overall PMPM patterns appear related to facility claims.....

**Average Facility Claims PMPM
Treatment Group Versus Control Group**

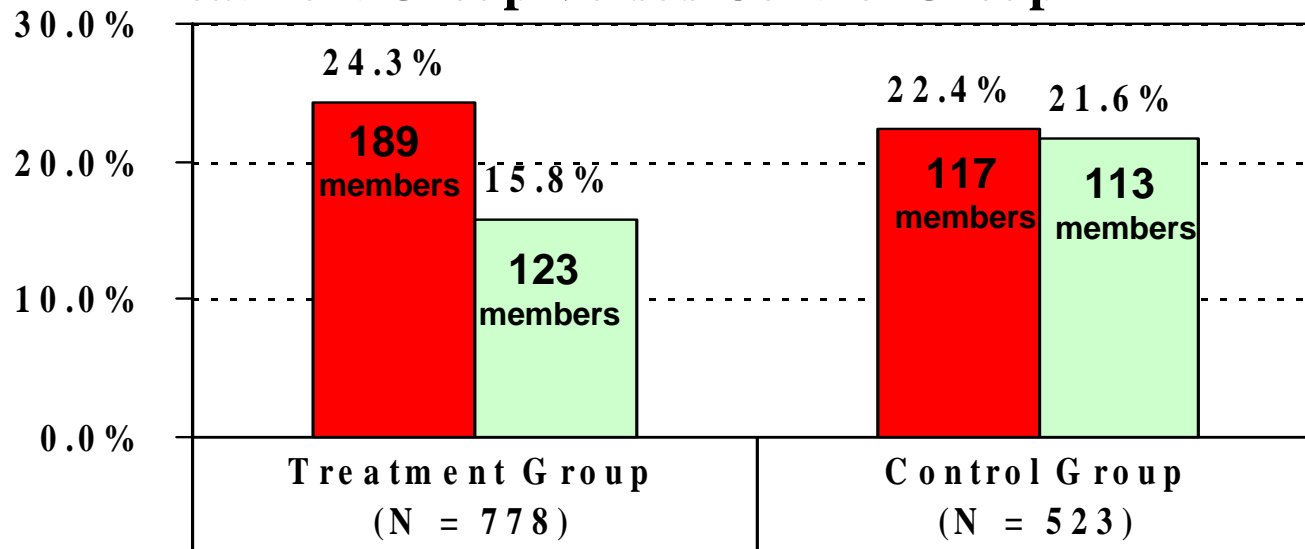


■ Pre-Intervention	\$760	\$728
■ Post-Intervention	\$500	\$716

Preliminary Findings - Financial

Facility claims PMPM may be related to a decrease in inpatient hospitalizations.....

**Percent of Members with an Inpatient Hospitalization
Treatment Group Versus Control Group**



■ Pre-Intervention	24.3%	22.4%
■ Post-Intervention	15.8%	21.6%

Additional Analysis

- We plan to examine more data, such as potential predictors of success. We may be able to streamline identification process (e.g. who is likely to have the best results, etc.).
- For example, we are beginning to examine the average pre-post PMPMs for treatment group and control groups based on the level of claims/risk – e.g. the categories below:

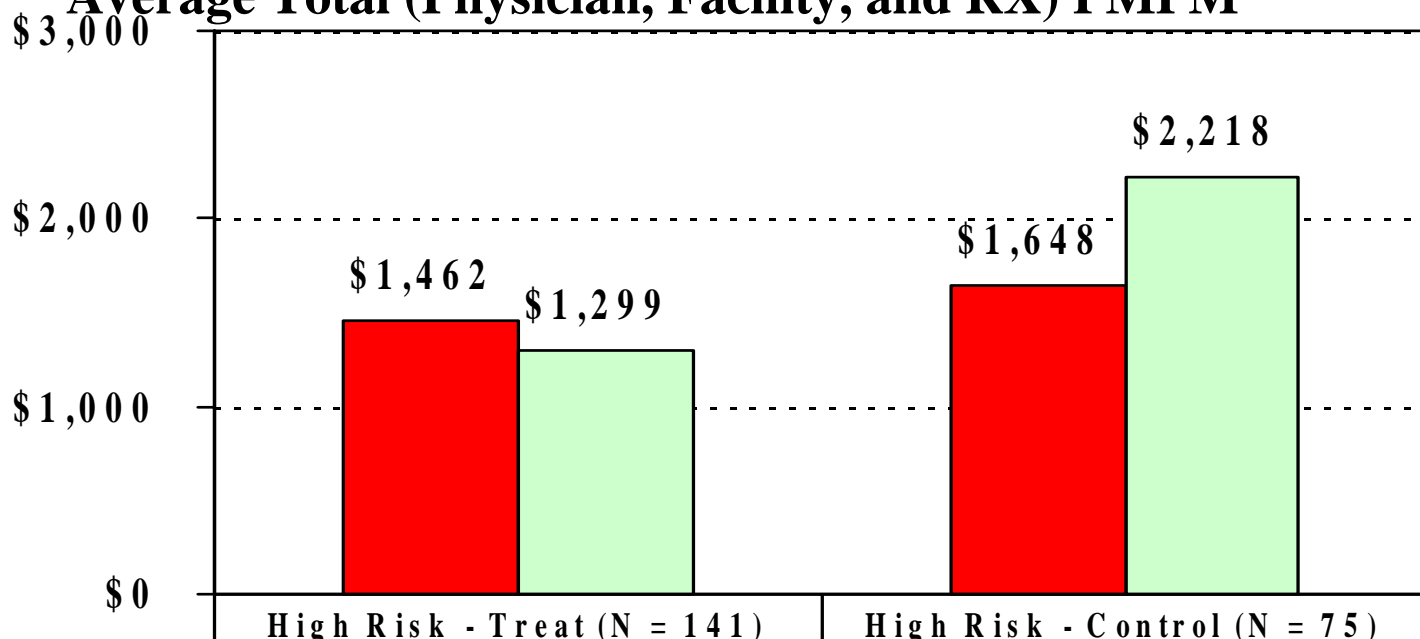
Probability of High Future Cost

Past 12 months Claim Costs	0.4 to 0.49	0.5 to 0.69	0.7 and higher	Totals
Under \$10,000	389 members (16% of total)	236 members (10% of total)	<i>52 members</i> <i>(2% of total)</i>	677 members (28% of total)
\$10,000 to \$29,999	400 members (17% of total)	463 members (19% of total)	<i>344 members</i> <i>(14% of total)</i>	1,207 members (51% of total)
\$30,000 and up	87 members (4% of total)	150 members (6% of total)	257 members (11% of total)	494 members (21% of total)
Totals	876 members (37% of total)	849 members (36% of total)	653 members (27% of total)	2,378 members

Additional Analysis

- Based on this initial analysis, data suggests largest effect may be for members who currently have low to moderate expenditures, but who are predicted to become high-cost.

“Low to Moderate” Allowed Claims; “High” Risk Level Members
Average Total (Physician, Facility, and RX) PMPM



■ " Pre-Intervention "	\$ 1,462	\$ 1,648
■ " Post-Intervention "	\$ 1,299	\$ 2,218

Preliminary Findings - Financial

■ Encouraging trends:

- Two groups had similar predicted risk scores, but treatment group PMPM decreased after enrollment relative to control group.
- These patterns are much stronger for “accepted” members versus “non-accepted” members.
- Most of the difference in average PMPM appears related to inpatient hospital claims.
- Informal review suggests the relative decrease may be related to fewer inpatient hospitalizations for depression, osteoarthritis, and low back pain.
- The largest effects so far – “low to moderate” cost members who are predicted to become “high cost”.

■ Although encouraging – it is based on limited information

- More data is needed to know for sure!

Future Tasks

- Beginning in July 2006, we no longer sample from the original list. Instead, we run the ACG software quarterly to have the most “up-to-date” lists and information.
- We plan to examine more data, such as potential predictors of success. We may be able to streamline identification process (e.g. who is likely to accept program, have the best results, etc.).
- Anxious to better analyze the outcomes of the program using a more sophisticated approach as more data becomes available.

Questions/Comments



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THANK YOU!!!