Lessons Learned from a Copayment Elimination Program for Patients with Diabetes

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Christiana Care Health System
Newark, Delaware

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  - James Bowen
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  - Paul Kolm PhD
  - William Weintraub, MD
Christiana Care Health System

- 16th busiest hospital system in the nation
- $2.03 billion in total patient revenue
- > 17,000 employees and dependents
  - largest private employer in Delaware
- Self-insured

Source: American Hospital Association Annual Survey Database of 6,200 U.S. Hospitals, FY 2009, © Health Forum, LLC.
Health Services Cost per Member
(Medical and Prescription)

FY06 FY07 FY08 FY09 FY10

$3,701 $3,764 $4,144 $4,630 $4,735
How to Contain Cost Growth?

- Cost-sharing (i.e. copayments, deductibles)
  - reduces unnecessary utilization
  - reduces medication adherence
    - initiation and persistence

Medication Adherence

- Adherence ~ Outcomes

- Low in diabetes and chronic conditions
  - Oral hypoglycemics:
    - ~60% of patients with MPR > 80%
    - ~60% with persistence at 12 months

Sokol MC, Medical Care June 2005
Value-based Insurance Design

- Patient costs reflect the true value of medical care/services

- Eliminate cost barriers for high value services including essential medications
Copayment Elimination Program

- Eliminate Copayments for Glycemic Medications and Supplies
- Increase adherence and monitoring
- Initiate new medications
- Improved Disease Control
- Decreased Utilization and Costs

- 18-month pilot program March 2009 – September 2010
- Employees and dependents with diabetes are eligible
- Eliminates copayments for ALL glycemic-related medications and supplies
Copayment Elimination Program

- Previous copayment structure:
  - 30 day: $10/$25/$50
  - 90 day: $25/$63/$125

- Tier 2 and 3 medications required prior authorization according to PBM step-therapy guidelines
Program Requirements

- On-line registration
- Informed Consent (per IRB)
- Baseline survey
  - demographic data
  - diabetes complications and related comorbidities
  - self-reported medication adherence over previous week
  - cost-related nonadherence over previous year
- Baseline measurements
  - height, weight, A1c, LDL, and blood pressure
- Follow-up survey, measurements, and labs at 12m
Participant Identification

Free Diabetes Medications and Supplies

Christiana Care employees and dependents covered under a Blue Cross Blue Shield of Delaware medical plan and who have diabetes may be eligible to participate in the Diabetes Copay Reduction Program. Some of the basic requirements for participation include:

- Registering for participation by completing the secure Diabetes Copay Reduction Program Registration form located under Health on Christiana Care’s HR Online site by February 1, 2009
- Scheduling an appointment to complete forms and have biometric measurements taken
- Completing a standard laboratory evaluation at one of the Christiana Care Outpatient Labs

With these requirements completed, your copays for diabetic medications will be automatically adjusted at the prescription counter beginning March 1, 2009.

For more information call 302-661-3050 or go to Christiana Care’s HR Online.

Christiana Care employees and dependents with diabetes who are covered under a Blue Cross Blue Shield of Delaware medical plan may be eligible to participate in the Diabetes Copay Reduction Program.

Participating employees or their dependents can receive diabetic medications and supplies at reduced or no-cost for at least 18 months beginning March 1, 2009. In addition, participants are eligible to receive reimbursement for some durable medical equipment expenses.

Requirements for participation include:

- Registering for participation by completing by Feb. 1, 2009, the secure Diabetes Copay Reduction Program Registration form located under Health on HR Online.
- Scheduling an appointment to have biometric measurements taken.
- Completing a standard laboratory evaluation at one of the Christiana Care outpatient labs.

If the above requirements are completed, copays for all diabetic medications listed on the Christiana
Baseline Survey Results and Participant Characteristics
<table>
<thead>
<tr>
<th>Age</th>
<th>Count</th>
<th>Percent</th>
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<tbody>
<tr>
<td>&lt;18</td>
<td>9</td>
<td>4%</td>
</tr>
<tr>
<td>18-30</td>
<td>11</td>
<td>5%</td>
</tr>
<tr>
<td>30-40</td>
<td>21</td>
<td>10%</td>
</tr>
<tr>
<td>40-50</td>
<td>49</td>
<td>23%</td>
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<tr>
<td>50-60</td>
<td>98</td>
<td>46%</td>
</tr>
<tr>
<td>&gt;60</td>
<td>23</td>
<td>11%</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>maried</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>135</td>
<td>64%</td>
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</table>

<table>
<thead>
<tr>
<th>Race</th>
<th>Count</th>
<th>Percent</th>
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<tbody>
<tr>
<td>White</td>
<td>122</td>
<td>62%</td>
</tr>
<tr>
<td>Black</td>
<td>62</td>
<td>30%</td>
</tr>
<tr>
<td>Other</td>
<td>21</td>
<td>10%</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Income</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
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<tr>
<td>&lt;50K</td>
<td>93</td>
<td>48%</td>
</tr>
<tr>
<td>50-100K</td>
<td>80</td>
<td>41%</td>
</tr>
<tr>
<td>&gt;100K</td>
<td>22</td>
<td>11%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 1 DM</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1 DM</td>
<td>45</td>
<td>21%</td>
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</table>
Comorbidities

- Comorbidity
- Percentage
- Disease
- Obesity
- Hypertension
- Hyperlipidemia
- Coronary Artery Disease
- Depression

- Obese: 63.5%
- Hypertension: 57%
- Hyperlipidemia: 60%
- Coronary Artery Disease: 7%
- Depression: 25%
Comorbidities

Hypertension, hyperlipidemia, coronary artery disease, or depression
Quality Measures

Baseline Clinical Measures

- A1c<9: 76%
- A1c<7: 57%
- LDL<100: 36%
- SBP<130: 59%

Process Measures in Previous Year

- Eye exam: 72%
- Foot exam: 74%
- A1c: 97%
Cost-related Nonadherence

- **Within the previous year** have you decided not to refill medication, skipped medication doses, or taken a smaller medication dose because of expense.

- Report spending less money on food, heat, or other basic needs to afford diabetes medications.

Pierre-Jacques et al. Med Care 2008
Cost-Related Non-Adherence

Cost-Related Nonadherence

<table>
<thead>
<tr>
<th>Percentage</th>
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<tbody>
<tr>
<td>100</td>
</tr>
<tr>
<td>80</td>
</tr>
<tr>
<td>60</td>
</tr>
<tr>
<td>40</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

CRN | Food | CRN or FOOD | SMBG |
--- | --- | --- | --- |
28  | 19  | 41  | 19  |

more likely if:
- female
- age less than 50
- black
- income <50K
- higher comorbidity
Impact Evaluation
12 month Follow-Up

“1000” mailed letters

242 Register On-Line

211 Program Participants

188 Complete

23 did not complete follow-up
14 no longer at CCHS or covered by CCHS insurance
4 opted out of program when contacted
5 did not respond to messages/outreach
Goal 1: Reduce Cost Burden

Monthly Out-of-pocket Expenses for Medications and Supplies

- $0
- $10
- $20
- $30
- $40
- $50

Percentage

Before

After

Dollars per month $<50 50-100 101-150 151-200 >200

P < 0.001
Cost-related nonadherence

Cost-Related Nonadherence (Pre-Post)

P<0.001 for all comparisons

Before
After

CRN
Food
CRN or Food
SMBG

Percentage %

28
12
19
7
41
18
5
19

CHRISTIANA CARE HEALTH SYSTEM
Goal 2: Increase Adherence

- Helped Me Take My Diabetes Medications More Regularly

- Helped Me Check Blood Sugar More Regularly
Self-Reported Adherence

- Slight improvement in adherence to oral DM meds
  - Report missing at least 1 day in last week
    - 32% → 22%,  P = 0.028

- No change in reported insulin adherence
Goal 3: Take Additional Medications

Helped Me Take Additional Diabetes Medications

Helped Me Take Medications for Other Conditions
Medication Use

- 11 not on any medications at start
  - 10 started medications
  - 2 others stopped all medications

- 123 on oral medications at start
  - 4 stopped
  - 10 started

- 79 on insulin at start
  - 11 stopped
  - 9 started
Goal 4: Improve Glycemic Control

<table>
<thead>
<tr>
<th></th>
<th>pre</th>
<th>post</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A1c</td>
<td>7.8 ±1.6</td>
<td>7.9 ±1.7</td>
<td>NS</td>
</tr>
<tr>
<td>SBP</td>
<td>127.4 ± 16.9</td>
<td>128.7± 17.4</td>
<td>NS</td>
</tr>
<tr>
<td>LDL</td>
<td>100 ± 33.3</td>
<td>108 ± 37.8</td>
<td>p = 0.006</td>
</tr>
</tbody>
</table>

No differences by baseline CRN
Overarching Goal: Help Employees

Helped Me Take Better Care of My Diabetes

Percentage

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>2%</td>
</tr>
<tr>
<td>Disagree</td>
<td>1%</td>
</tr>
<tr>
<td>No Effect</td>
<td>10%</td>
</tr>
<tr>
<td>Agree</td>
<td>30%</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>59%</td>
</tr>
</tbody>
</table>
If you have any questions, please call me.

Thank you.

When I started the program all things went well for me. I was able to afford my medications for the first time, and I paid for medications only when necessary.

Money is a good tool together with life, but stress on a daily basis does work for me. As for me, personal stress is very high even without work. Stress does work on your life.
Donna Diorio, a hostess on 6-E at Christiana Hospital, is a participant in the original program ... The single mother of three says the program eliminates the burden and worry associated with paying for medications, needles and other medical equipment and also helps her to better control her diabetes. “It is a Godsend,” she says. “The program allows me to focus on staying healthy rather than thinking about the cost of my drugs.”
Key Lessons and Implications
The Bottom Line...

Despite increases in reported adherence and decreases in reported cost-burden, Copayment Elimination Program appears to have minimal clinical benefit

- Limitations
  - Uncontrolled pre-post
  - Small sample
  - Selection bias -- Ceiling Effect

May be consistent with VBID research
Program Design May Influence Participation

<table>
<thead>
<tr>
<th>Reason</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>I do not have diabetes</td>
<td>40</td>
<td>37</td>
</tr>
<tr>
<td>I was not aware of the Program</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>I have diabetes but do not take medications or use supplies</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>I do not have a problem affording diabetes medications or supplies</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>I have secondary insurance that covers my diabetes medications/supplies</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>I did not want CCHS to know my health information</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>It was too difficult to enroll in the program</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>I did not want to participate in a research program</td>
<td>22</td>
<td>20</td>
</tr>
</tbody>
</table>
Cost-Related Nonadherence is common and modifiable

- ~30% of our sample
  - More likely if black, has more comorbidities, and lower income

- Copay Program decreased CRN

Heisler et al. Medical Care 2010
Glycemic control is difficult to “ENFORCE”

- Lifestyle choices dominate

- Adherence, even in setting of CRN, is not just about cost
  - Price elasticity may be largely unidirectional
  - “once we have dealt with cost-related underuse, we must still address the numerous other reasons for nonadherence”

-Niteesh Choudry, Circulation 2009
Next Steps?

- Controlled Analysis of Adherence and Costs
- Employee disease management/wellness programs
  - Linkage to HRA
- Impact rather than observe real-life care…
  - Linkage with PCP
Thank You

delliott@christianacare.org
Health Services Medical and Prescription Total Claims

FY 06 | FY 07 | FY 08 | FY 09 | FY 10

$58,134 | $60,160 | $69,390 | $78,752 | $77,300

45,000 | 50,000 | 55,000 | 60,000 | 65,000 | 70,000 | 75,000 | 80,000 | 85,000

($000)
Adherence at CCHS

**Limited information!**

- 685 members with oral diabetes medication
- 569 with $\geq 2$ glycemic meds
- MPR 81.4% (benchmark 87.7%)

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% - 20%</td>
<td>5</td>
<td>0.9%</td>
</tr>
<tr>
<td>20% - 40%</td>
<td>28</td>
<td>4.9%</td>
</tr>
<tr>
<td>40% - 60%</td>
<td>61</td>
<td>10.7%</td>
</tr>
<tr>
<td>60% - 80%</td>
<td>130</td>
<td>22.8%</td>
</tr>
<tr>
<td>80% - 100%</td>
<td>345</td>
<td>60.6%</td>
</tr>
</tbody>
</table>
Non-participants

Is there a certain monetary value or other incentive that would have motivated you to participate?

<table>
<thead>
<tr>
<th>YES:</th>
<th>16</th>
<th>(15%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO:</td>
<td>55</td>
<td>(51%)</td>
</tr>
<tr>
<td>N/A</td>
<td>37</td>
<td>(34%)</td>
</tr>
</tbody>
</table>

If yes, what incentive would have motivated you to participate?

| GiftCard | 6    | (38%) |
| Cash     | 5    | (31%) |
| Premium reduction | 11   | (69%) |
| Free diab educ     | 4    | (25%) |
CHRISTIANA CARE HEALTH SYSTEMS CO-PAYMENT ELIMINATION PROGRAM DATA MANAGEMENT

**PHARMACY MANAGERS**
- EXPRESS SCRIPTS (CCBS)
  - DRUG
  - DATE
  - DAYS SUPPLIED
  - DOSE
  - COST
- MEDCO (same)
  - DRUG
  - DATE
  - DAYS SUPPLIED
  - DOSE
  - COST

**BCBSDE (other insured)**
- DRUG
- DATE
- DAYS SUPPLIED
- DOSE
- COST

**UTILIZATION CLAIMS DATA**
- Date
- Type
- Diagnosis Code
- Provider
- Location

**HEALTHWAYS (DM) PARTICIPATION DATA**
- Contact Type
- Date
- Duration/Intensity?
- Recommendation?

**PLAN DATA**
- Type
- Employer
- Co-Pay Structure
- Benefits Structure

**DE-IDENTIFICATION VALIDATION/CLEANING**

**PARTICIPANT DATA**
- Demographic Data
- Survey Instrument
- Lab Values

**FINAL DE-IDENTIFIED DATASET**
Operational Challenges

- HIPAA, contracts, agreements, and corporate integrity
- Partnership with Benefits Managers, Account administrator
Other considerations

- Which problem/services to target?
- How comprehensively?
- Which employees to target?
- Other PR benefit