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Value-Based Benefits: The Impact of Pharmacy Plan Design



IBI Research - 2007

Source: *A Broader Reach for Pharmacy Plan Design*, Integrated Benefits Institute, 2007

- IBI's study is based on an Ingenix master research database that includes more than 1 million covered lives for 17 employers with up to three years of claims experience for medical, pharmacy, STD, LTD and workers' compensation.
- From the sample, IBI analyzed the medication compliance and disability lost time for 5,483 employees with rheumatoid arthritis.



IBI Research on Value-Based Benefit Design

Purpose: To demonstrate how increasing co-pays for rheumatoid arthritis (RA) reduces medication adherence and increases disability and lost productivity

Key Insights:

- Medication adherence for those with chronic RA is poor, despite beneficial effects from disease-modifying anti-rheumatic drugs (DMARDs)
- Increasing co-pays by \$20 per script further reduces the proportion of those filling at least one script for DMARDs by 35%
- Research by others shows additional medical expense offsetting savings from increased co-pays. This research finds additional disability costs.
- Those in the study filling at least one DMARD script (vs. those filling none) have 36% lower STD incidence and 6% shorter duration
- If those not filling DMARD scripts actually filled them at the same rate as those filling one or more, the employers in the study would reduce lost-productivity costs by 26%
- The [full study](#) is available to members of IBI. Commentary is available in Notes view.

IBI Results Attract Broad Media Attention

The New York Times

Scant Drug Benefits Called Costly to Employers

June 27, 2007

By MILT FREUDENHEIM

Health penny wise, medical pound foolish?

Employers that shift too much of the cost of drugs to workers in their company health plans could wind up losing more than they save, through absenteeism and lost productivity, according to a study by health policy researchers.

The three-year study, to be released today, looked at the medical histories of several thousand workers with a diagnosis of rheumatoid arthritis. The condition is a painful and incurable disease of the joints, but patients can keep it at bay by taking a special class of drugs.

The cost, as much as \$18,000 a year, can be a big expense for employer health plans. Still, putting too much of the cost burden on the employee can evidently backfire.

Among the 17 employers in the study, conducted by the nonprofit Integrated Benefits Institute, more than half the workers with rheumatoid arthritis were not taking their drugs — in many cases because they considered the out-of-pocket co-payments too high.

**High Co-pays deter
Pill-taking and hurt
worker health.**

- This significant press mention of the research represents an important step in bringing the reporting of lost productivity/lost-time savings from value-based benefit design to the general press.
 - ✓ It also warns of inappropriate cost shifting if one is concerned about the full costs of ill health, including absence, disability and lost productivity.
- The article was published on the front page of the New York Times Business Section on June 27, 2007.



Two Classes of Rheumatoid Arthritis Drugs Examined

Modifying disease progression

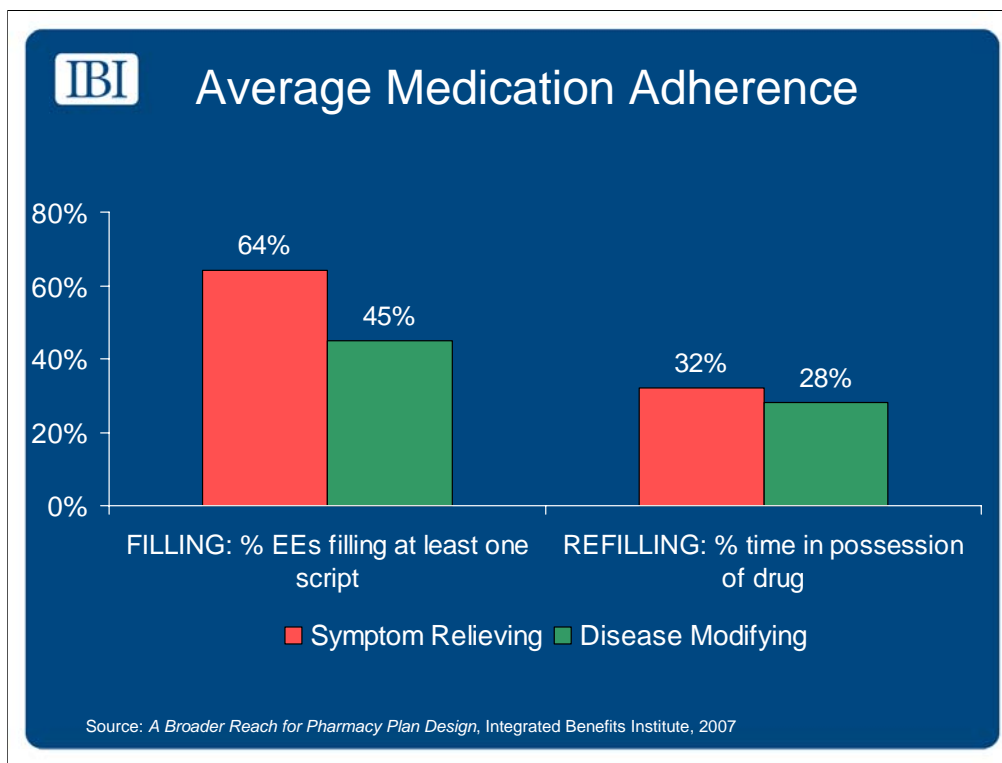
- Disease-modifying anti-rheumatic drugs (DMARDs)
- Anti-tissue necrosis factor (anti-TNF) agents
- Biologic response modifiers
- Select anti-malarials used as DMARDs

Treating and relieving pain/inflammation symptoms

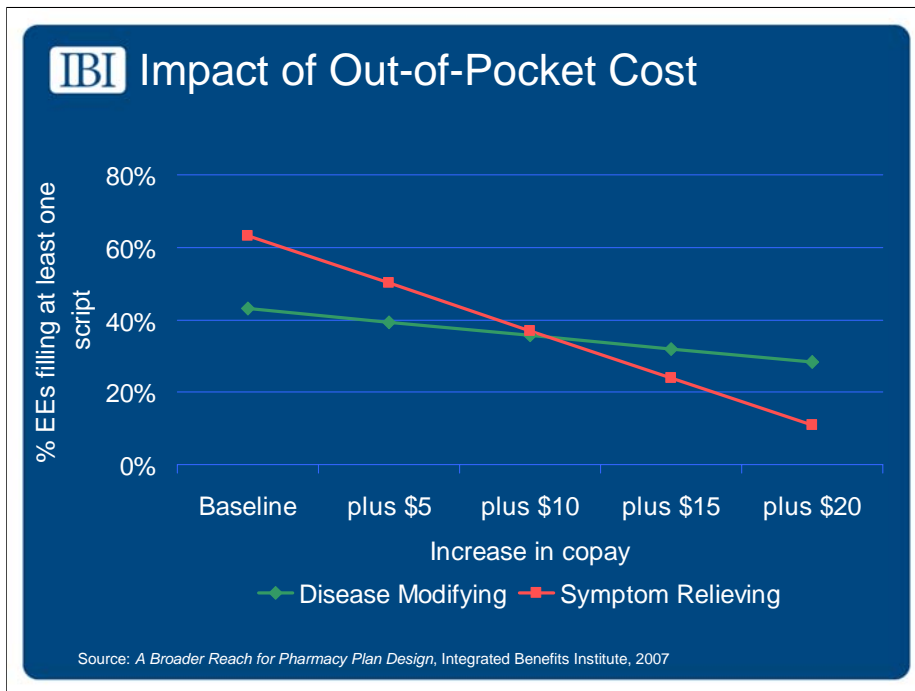
- Non-steroidal anti-inflammatory drug (NSAIDs)
- Cyclo oxygenase 2 (Cox-2) inhibitors
- Analgesics

Source: *A Broader Reach for Pharmacy Plan Design*, Integrated Benefits Institute, 2007

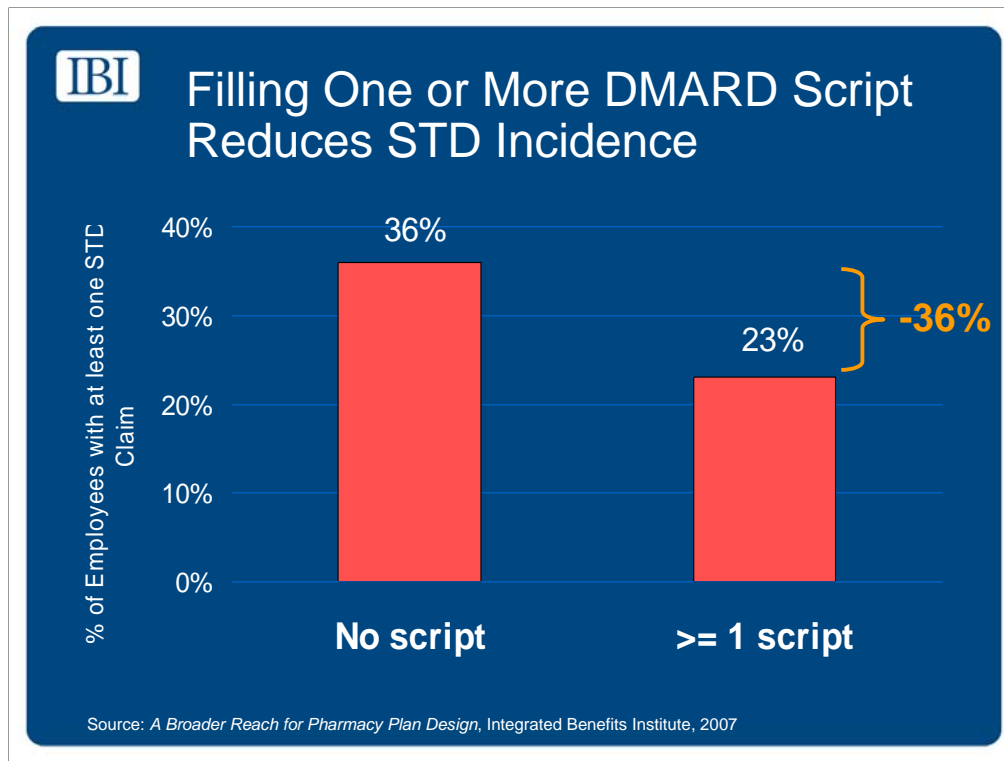
- In the study all drugs used to modify disease progression are referred to as DMARDs and those for treating pain/inflammation symptoms are referred to as symptom-relieving drugs.



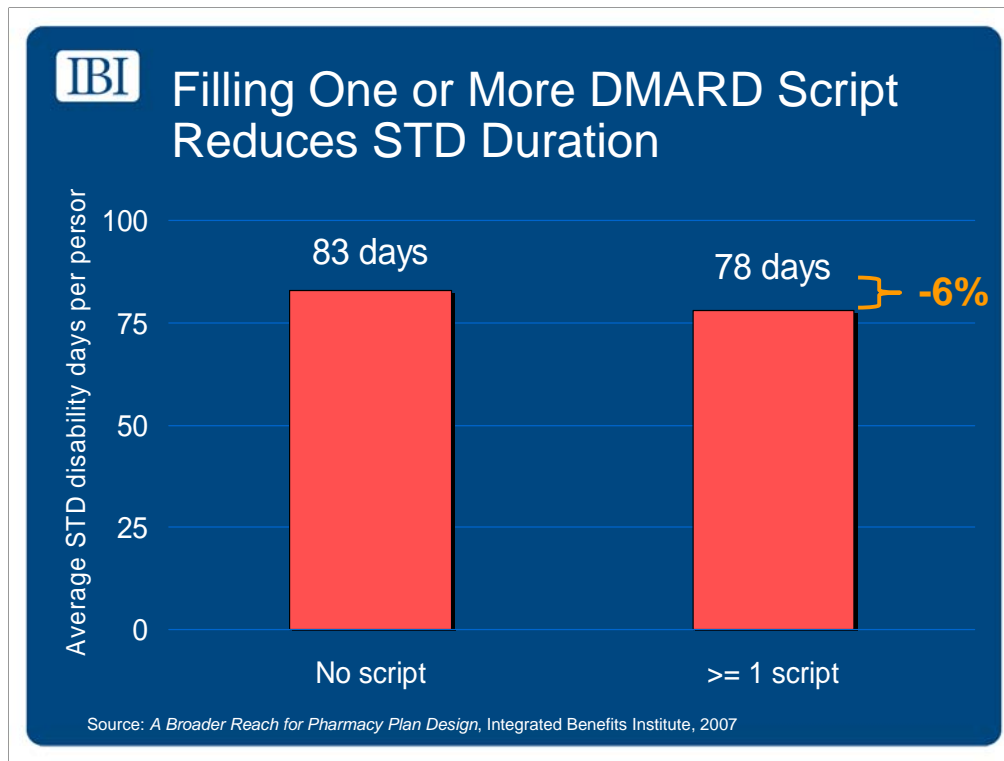
- The average out-of-pocket costs for DMARDs in the sample is \$26 (median = \$10), and for symptom-relieving drugs is \$28 (median = \$18)
- Drug adherence rates relating to these out-of-pocket costs are shown in red for symptom-relieving drugs and in green for disease-modifying drugs.
- Findings:
 - ✓ Fewer than two-thirds (64%) of the employees diagnosed with RA fill at least one script for symptom-relieving drugs, while only 45% fill at least one script for DMARDs.
 - ✓ As for refilling scripts (as measured by medication possession ratio – the percentage of time the employee is in possession of the drug), the levels are significantly lower: about 1/3 for symptom-relieving drugs and only 28% for DMARDs.
- These results are a far cry from minimum HEDIS standards which suggest a minimum guideline of 80%.
- NCQA findings, showing that about 50% of the diagnosed RA population has ever received a prescription for a DMARD, are consistent with the results of this study.



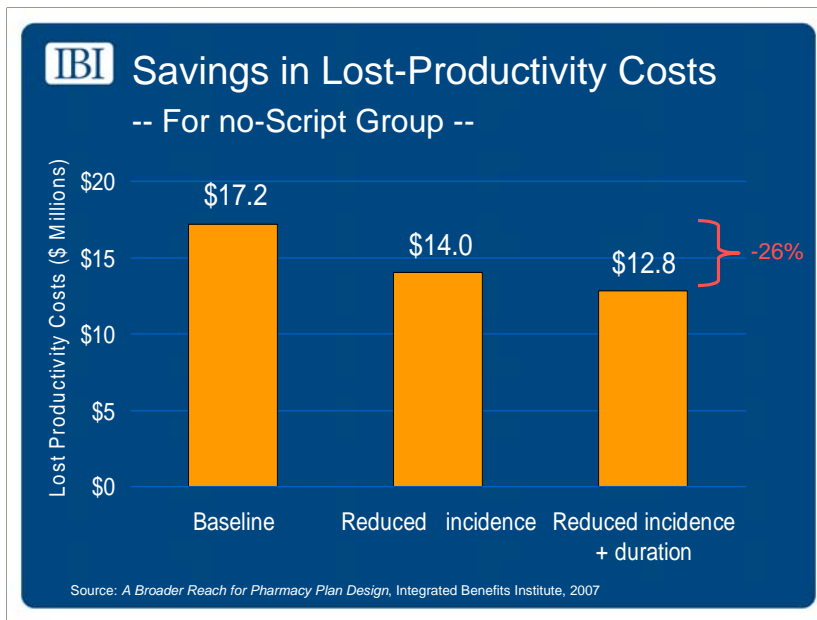
- The IBI study examined the effect of increasing co-payments on adherence
- The green line shows how increasing co-pays of \$5, \$10, \$15 and \$20 from the current payment would affect adherence for disease-modifying drugs.
 - ✓ At the extreme, adding an additional \$20 co-pay would reduce by 35% the share of employees filling at least one script.
- The red line shows the same relationships for symptom-relieving drugs.
 - ✓ At the extreme, an additional \$20 co-pay would reduce by 84% the share of employees filling at least one script. Clearly employees are price-sensitive to their out-of-pocket spending.
- These different price elasticities (employees are more willing to do without symptom-relieving drugs as the cost increases but not so much with DMARDs) make intuitive sense.
- One would expect disease-modifying drugs to be less elastic because of their impact on the underlying disease compared to symptom-relieving drugs, which have many over-the-counter alternatives.



- Filling at least one disease modifying script has a significant influence on incidence of short term disability (STD) in this sample.
- After controlling for employee-clustering within employer groups (some employers simply have sicker employees than others), gender, age and co-morbidity, IBI found a significant impact of script-filling behavior on STD.
- After these controls, comparing the STD incidence rate for the two groups shows stark differences.
 - ✓ Employees with RA that fill no scripts have an STD incidence of 36%, while for those filling at least one script the rate drops to 23% -- a 36% reduction in disability incidence.
- The IBI study also found statistically significant results in modeling the impact of medication possession ratios on disability incidence.



- When examining the impact of filling DMARD scripts on duration of disability, IBI also found a significant result, however not as dramatic an impact as on STD incidence.
 - ✓ Controlling for the same factors, a 6% reduction in disability duration was found when comparing the two groups.
- The results shown in these last two slides make intuitive sense. One would expect a drug that slows down the progression of a disease to have a much bigger impact on the incidence of disability than on the duration once a person already is on disability leave.
- These results on how adherence affects disability incidence and duration should put any temptation for employers to further shift pharmacy costs to employees into a much broader and bottom-line threatening context.



- We know that decreased adherence also decreases aggregate drug costs for the payer – as night follows day. However research by others also finds that not taking needed drugs makes up for the drug savings by increasing overall medical costs. This research shows that decreased adherence impacts STD disability incidence and duration.
- IBI translated lost time to lost-productivity and shows the potential savings from decreasing STD days.
 - ✓ If the 55% of all those having RA that fill no scripts actually filled the scripts at the same rate as employees in the other group it would result in a significant effect
 - ✓ The resulting increase in adherence would reduce lost productivity costs in the no-DMARD-script group from \$17.2 million to \$12.8 million – resulting in lost-productivity savings of \$4.4 million for the 3,025 workers in the no-script group.
- The total-cost view gives a much different result. Employers should carefully consider the impact before embracing cost shifting as a cost-containment measure.