

## Supplementary Online Content

Karaca-Mandic P, Jena AB, Joyce GF, Goldman DP. Out-of-pocket medication costs and use of medications and health care services among children with asthma. *JAMA*. 2012;307(12):1284-1291.

**eTable 1.** Medication and Other Health Care Utilization by Quartile of OOP Cost for Asthma Medications, Children Under 5 Years

**eTable 2.** Sensitivity Analysis of Association Between OOP Asthma Medication Costs and Asthma Medication Utilization and Asthma-Related Hospitalizations, Children Ages 5-18

**eTable 3.** Sensitivity Analysis of Association Between OOP Asthma Medication Costs and Asthma Medication Utilization and Asthma-Related Hospitalizations, Children Ages 5-18 Using a Hierarchical Model With Nesting at the Plan-Year Levels

This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable 1.** Medication and Other Health Care Utilization by Quartile of OOP Cost for Asthma Medications, Children Under 5 Years

|  | <b>Full Sample</b> | <b>Quartile 1</b> | <b>Quartile 2</b> | <b>Quartile 3</b> | <b>Quartile 4</b> |
|--|--------------------|-------------------|-------------------|-------------------|-------------------|
| No.  | 2921               | 769               | 707               | 730               | 715               |
| Annual OOP cost for basket of asthma medications, \$ Mean (SD)   | 151 (72)           | 89 (17)           | 118 (24)          | 161 (34)          | 241 (73)          |
| Mean non-medication coinsurance rate (95% CI)  | 24.2 (23.8-24.6)   | 20.6 (20.1-21.1)  | 22.9 (22.0-23.7)  | 27.0 (26.2-27.7)  | 26.7 (25.9-27.5)  |
| Medication utilization   |                    |                   |                   |                   |                   |
| Days covered by an asthma prescription during 365-day follow-up, % (95% CI)                              | 46.2 (45.2-47.1)   | 47.9 (46.0-49.8)  | 46.0 (44.0-47.9)  | 43.9 (42.0-45.8)  | 46.8 (44.9-48.8)  |
| Mean non-medication coinsurance rate (SD)  | 24.2 (10.7)        | 20.6 (7.5)        | 22.9 (11.4)       | 27.0 (10.7)       | 26.7 (11.4)       |
| Medication utilization   |                    |                   |                   |                   |                   |
| Days covered by an asthma prescription during 365-d follow-up, % (SD)                                    | 46.2 (26.7)        | 47.9 (26.8)       | 46.0 (26.4)       | 43.9 (26.3)       | 46.8 (26.7)       |
| Health care utilization after initiating control therapy   |                    |                   |                   |                   |                   |
| Asthma-related hospitalization during 365-d follow-up, No. children (%)                                  | 136 (4.7)          | 39 (5.1)          | 39 (5.5)          | 23 (3.2)          | 35 (4.9)          |
| Asthma-related emergency department visit during 365-d follow-up, No. children (%)                       | 231 (7.9)          | 53 (6.9)          | 57 (8.1)          | 60 (8.2)          | 61 (8.5)          |
| Health care utilization prior to initiating control therapy  |                    |                   |                   |                   |                   |
| Asthma-related hospitalization in 180 d prior to initiating control therapy, No. children (%)            | 162 (5.6)          | 38 (4.9)          | 47 (6.7)          | 34 (4.7)          | 43 (6.0)          |
| Asthma-related emergency department visit in 180 d prior to initiating control therapy, No. children (%) | 207 (7.1)          | 54 (7.0)          | 50 (7.1)          | 54 (7.4)          | 49 (6.9)          |

Table reports unadjusted analyses. Annual OOP cost and expenditures on hospitalization are in 2010 dollars. Mean non-medication coinsurance rate is the mean OOP cost of all medical services (eg, hospitalizations, ED visits, durable equipment, etc.) divided by the total payment (OOP + health plan) for those services. The 25th, 50th And 75th Percentiles of Annual OOP cost for asthma medications are \$100, \$140, and \$190 respectively.

**eTable 2.** Sensitivity Analysis of Association Between OOP Asthma Medication Costs and Asthma Medication Utilization and Asthma-Related Hospitalizations, Children Ages 5-18

|  | Annual OOP Cost for Asthma Medications    |   |         |
|--|---|---|---------|
|  | 25th Percentile (\$100),<br>Mean (95% CI) | 75th Percentile (\$190),<br>Mean (95% CI) | P Value |
| Follow-up period of 90 d, rather than 365 d  |   |   |         |
| Days covered by an asthma medication prescription, %                                       | 63.2 (62.1-64.2)                          | 62.0 (61.1-62.8)                          | .02     |
| 90-d rate of asthma-related hospitalization per 100 children                               | 0.5 (0.3-0.7)                             | 0.8 (0.5-1.1)                             | .04     |
| Requirement of 12 mo without control therapy, rather than 6 mo, to be included in sample   |   |   |         |
| Days covered by an asthma medication prescription, %                                       | 42.3 (41.2-43.5)                          | 40.8 (39.8-41.8)                          | .03     |
| Annual rate of asthma-related hospitalizations per 100 children                            | 1.4 (1.1-1.8)                             | 2.2 (1.6-2.7)                             | .007    |
| Sample restricted to children initiating therapy during pollen season (April to September) |   |   |         |
| Days covered by an asthma medication prescription, %                                       | 44.4 (43.2-45.6)                          | 43.0 (42.0-44.0)                          | .03     |

Annual OOP cost and expenditures on hospitalization are in 2010 dollars. Requirement of 12 mo without control therapy (rather than 6 mo) reduces sample to 4502 children. Restricting sample to children initiating therapy during pollen season reduces sample to 2715 children.

**eTable 3.** Sensitivity Analysis of Association Between OOP Asthma Medication Costs and Asthma Medication Utilization and Asthma-Related Hospitalizations, Children Ages 5-18 Using a Hierarchical Model With Nesting at the Plan-Year Levels

| Hierarchical Model With Nesting at Plan-Year Levels      | Annual OOP Cost for Asthma Medications |  |         |
|--|--|--|---------|
|  | 25th Percentile (\$100), Mean (95% CI) | 75th Percentile (\$190), Mean (95% CI) | P Value |
| Days covered by an asthma medication prescription, %     | 34.8 (34.0-35.6)                       | 33.7 (33.0-34.3)                       | .005    |
| Rate of asthma-related hospitalizations per 100 children | 1.7 (1.2-2.2)                          | 2.3 (1.9-2.7)                          | .03     |