

**APPENDIX V**

**METHODOLOGY FOR CALCULATING MEDICAID PERFORMANCE  
MEASURES ISSUES CONCERNING VARYING LENGTHS OF ELIGIBILITY**

## UMBC Center for Health Program Development and Management

### Methodology for Calculating Medicaid Performance Measures Issues Concerning Varying Lengths of Eligibility

Problem: Medicaid recipients have varying lengths of eligibility during a 12 month time period. Many measures are only considered meaningful if they are calculated on a population which is eligible for the entire 12 months. This approach eliminates about half of the Medicaid population in any 12 month period. Is it possible to develop a methodology which allows for the inclusion of individuals with less than 12 months of eligibility in measures without distorting the accuracy of the measures?

Solution: We adapted a methodology developed by Herz et al<sup>1</sup> to measure EPSDT services delivered to children and adolescents. That methodology accounted for a number of factors such as eligibility and age at which immunizations were given, to determine a standardized rate of completion of EPSDT services. A similar approach is recommended here.

#### Required Information:

|  |             |   |
|--|-------------|---|
| Expected Participants  | ExpectPar   | Total number of Medicaid recipients eligible to receive the service regardless of length of eligibility during a specified time period, such as a year  |
| Service Standard   | Standard    | This value can be determined in two ways.<br><br>1. Take the observed number of services for recipients who were enrolled for 100% of the time period of the study. This value can be used as the “standard” for the expected number of services.<br><br>2. Use a performance standard if known such as number of mammograms required during the time period. |
| Actual Number of Services                                      | Service     | The number of services which were provided to recipients during the time period regardless of their length of eligibility   |
| Actual number of Participants                                  | Participant | The number of individuals who received the service during the time period regardless of their length of eligibility. In many instances this number may be the same as the actual number of services.  |
| Expected Number of Services adjusted for length of eligibility | ExpctServ   | This number is calculated by taking the number of months actually enrolled, dividing it by 12 and then multiplying this by the standard (see above).  |

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<sup>1</sup> Herz EJ, Sredl K, Alber LA. *Trends in the Use of EPSDT and Other Health Care Services by Children Under Medicaid, 1989 and 1992*. Report prepared for the Health Care Financing Administration. HCFA Contact No. 500-92-066. Washington, DC: The MEDSTAT Group, March, 1996.

Example: Below is an example of the application of this methodology to the rate of mammograms for women age 52 - 69 as defined by HEDIS 3.0.

Required Information<sup>2</sup>

|  |             |   |
|--|-------------|---|
| Expected Participants  | ExpectPar   | All women age 52 - 69 enrolled in Medicaid program in one calendar year. There were 1,994 women in the defined population.  |
| Service Standard   | Standard    | The HEDIS standard is one mammogram every two years for women in this age group. Since we are only using one year of data the standard for this example is .50. <sup>3</sup>  |
| Actual Number of Services                                      | Service     | The number of mammograms were identified as all outpatient services with the CPT4 Procedure Codes of 76090, 76091, 76092. There were 252 mammograms identified during this time period.                                       |
| Actual number of Participants                                  | Participant | The number of individuals who received the service during the time period regardless of their length of eligibility. In this example there were 252 women in the defined population who received a mammogram during the year. |
| Expected Number of Services adjusted for length of eligibility | ExpctServ   | This number is calculated by taking the number of months actually enrolled, dividing it by 12 and then multiplying this by the standard. In this example the number is 769.96   |

We calculated the expected number of mammograms which adjusts for the differences in the length of enrollment using the following formula.

$$\bar{M}_{ij} = \text{Months Enrolled}/12 * \text{Number of recommended Mammograms}$$

for this example

$$\bar{M}_{ij} = \text{Months Enrolled}/12 * .50$$

$$\text{Mammogram Rate} = \text{Serv}/\text{ExpctServ} \text{ or } 252/769.958 = 32.73$$

The Mammogram Rate of 32.73 differs dramatically from 18.3, the rate for recipients who were enrolled for 12 months or 12.64, raw rate of number of mammograms for any women with

<sup>2</sup> See Appendix A for Raw Data.

<sup>3</sup> The expected number of services was calculated as .5 since the standard is one mammogram is 1 over two years. Based on this standard. for the purpose of this example we chose .5 as the likelihood of having a mammogram in one year. (If there was not an external standard one could have used 216/1,183 = .183 which is the rate for recipients enrolled for 12 months.)

eligibility during this year (252/1994). This methodology takes into account the mammograms that were performed on women who were not enrolled for the entire year, but adjusts for the length of their enrollment.

### Conclusion.

This method offers a simple solution for developing rates for measures across populations with varying lengths of enrollment. It makes it possible to compare populations where all recipients are enrolled for a full year to populations where the majority of recipients are only enrollee for a portion of the year. This methodology gives credit to providers who make an effort of providing preventive services to patients as soon as they are seen in their practice rather than assuming that this members will return for additional visits.

Appendix A - Raw Data

| Months of Eligibility | Number of Recipients | Total Months of Eligibility | Number of Mammograms | Expected Number of Mammograms |
|-----------------------|----------------------|-----------------------------|----------------------|-------------------------------|
| 1                     | 133                  | 133                         | 4                    | 5.54                          |
| 2                     | 84                   | 168                         | 1                    | 7.00                          |
| 3                     | 78                   | 234                         | 3                    | 9.75                          |
| 4                     | 63                   | 634                         | 1                    | 10.50                         |
| 5                     | 67                   | 335                         | 5                    | 13.96                         |
| 6                     | 93                   | 570                         | 4                    | 23.25                         |
| 7                     | 66                   | 462                         | 2                    | 19.25                         |
| 8                     | 67                   | 536                         | 4                    | 22.33                         |
| 9                     | 55                   | 495                         | 3                    | 20.63                         |
| 10                    | 45                   | 450                         | 5                    | 18.75                         |
| 11                    | 60                   | 660                         | 4                    | 27.5                          |
| 12                    | 1,183                | 14,196                      | 216                  | 591.50                        |
| Totals                | 1,994                | 18,873                      | 252                  | 769.96                        |