The Cost of Prematurity to U.S. Employers

Premature birth accounts for 1 in 8 births in the United States and can lead to long-term health problems and lifelong disabilities. The estimated societal economic impact is at least $26.2 billion annually.

The March of Dimes contracted with Thomson Reuters to estimate the cost of prematurity and complicated deliveries to large employer health plans drawn from the MarketScan database for infants born in 2005. Analyses included the cost of medical care for infants from birth through the first year of life and for mothers including the delivery, prenatal services during the nine months prior, and three months postpartum. Costs have been adjusted to 2007 dollars.

Medical Costs and Utilization for Newborns

Medical costs for newborns with complications were significantly more costly than those without complications (Figure 1). Average expenditures for premature/low birthweight (LBW) infants were more than 10 times as high as uncomplicated newborns. Newborns with other selected complications, including congenital defects and co-morbidities associated with prematurity or LBW, were more than twice as costly as newborns without complications.

<table>
<thead>
<tr>
<th>Table 1. Average Expenditures for Newborn Care, by Payer</th>
<th>Health Plan</th>
<th>Out-of-Pocket</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncomplicated</td>
<td>$3,859</td>
<td>$654</td>
<td>$4,551</td>
</tr>
<tr>
<td>Premature/LBW</td>
<td>$46,004</td>
<td>$1,987</td>
<td>$49,033</td>
</tr>
<tr>
<td>Other Complications</td>
<td>$9,280</td>
<td>$953</td>
<td>$10,273</td>
</tr>
</tbody>
</table>

While health plans paid the majority of total allowed costs, out-of-pocket expenses were substantial and significantly higher for premature/LBW newborns compared with uncomplicated newborns (Table 1).

Health care utilization was greater among premature/LBW newborns and newborns with other selected complications, compared to uncomplicated newborns. Average inpatient (hospital) length of stay for the delivery and the 12 months following delivery was 14.2 days for premature/LBW infants, nearly 12 more days compared to uncomplicated newborns. The average number of outpatient visits and prescriptions filled were also significantly higher for premature/LBW infants than uncomplicated newborns.

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Medical Costs and Utilization for Maternity Care
Health care costs for maternity care (including prenatal care during the nine months prior and postpartum care for the three months following delivery) were significantly higher for complicated deliveries compared to uncomplicated deliveries (Figure 4). **Costs for uncomplicated cesarean deliveries** were more than 40 percent higher than costs for uncomplicated vaginal deliveries and approached the cost of complicated deliveries, and also had significantly longer inpatient stays, outpatient visits and prescriptions filled. Out-of-pocket expenses for maternity care did not differ substantially between groups.

**Combined Newborn and Maternal Costs**
By using a combined maternal/newborn sample of linked mom and infant records, estimates of total combined costs by newborn diagnosis were possible. **Combined infant and maternity medical costs** for an infant with a diagnosis of prematurity/LBW were four times as high as those for an uncomplicated newborn. For infants with a diagnosis of prematurity/LBW, the total expenditures for mothers and babies combined were $64,713, compared to $15,047 for uncomplicated infants. Costs for prematurity/LBW were significantly higher among each of the categories of utilization shown in Table 2. Health plans paid over 90% of the combined costs for prematurity/LBW ($60,417); however, out-of-pocket expenses were also substantial ($3,326).

<table>
<thead>
<tr>
<th>Newborn Diagnosis</th>
<th>Total Payments</th>
<th>Inpatient</th>
<th>Outpatient</th>
<th>Prescriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Births</td>
<td>$21,328</td>
<td>$15,385</td>
<td>$5,940</td>
<td>$736</td>
</tr>
<tr>
<td>Uncomplicated</td>
<td>$15,047</td>
<td>$10,109</td>
<td>$4,938</td>
<td>$596</td>
</tr>
<tr>
<td>Premature/LBW</td>
<td>$64,713</td>
<td>$52,781</td>
<td>$10,132</td>
<td>$1,801</td>
</tr>
<tr>
<td>Other Complication</td>
<td>$22,183</td>
<td>$15,757</td>
<td>$5,691</td>
<td>$736</td>
</tr>
</tbody>
</table>

**Notes and Sources:**

Thomson Reuters MarketScan Research Databases are constructed from privately insured paid medical and prescription drug claims. Data contributors are large self-insured U.S. employers. Expenditures have been adjusted to 2007 dollars using the Bureau of Labor Statistics Consumer Price Index for Medical Care.

Premature/LBW newborns were defined using ICD-9 diagnosis codes on the medical record and include premature infants with and without low birthweight (<2500 grams). Combined newborn and maternal costs are classified by newborn diagnosis; costs are independent of maternal complication status.

Significant differences discussed were statistically significant (p<.05).