The Childhood Obesity Epidemic: Insights from claims plus EMR data

Claims data alone may not accurately reflect the underlying prevalence of childhood obesity; healthcare providers may be less likely to add an obesity diagnosis to a claim because of the stigma associated with the condition.

Linking claims data and clinical data from electronic medical records (EMRs) can enhance the awareness and management of childhood obesity and the associated trajectories of care.

IBM Watson Health analyzed EMR data to differentiate between the prevalence of clinical evidence and the diagnosis of obesity in childhood, as well as describe how the combined data assets of claims and EMR data provide a more comprehensive understanding of childhood obesity and potential related comorbidities.

**KEY TAKEAWAYS**

- Very low prevalence of diagnosis of obesity in EMR and/or claims data, but rising
- Lowest prevalence of diagnoses among youngest children, highest among oldest children
- Among children with diagnosis of obesity, the most prevalent comorbidity is asthma, followed by mental health issues

**IBM MarketScan® Explorys® Claims-EMR Data Set: A combination of MarketScan administrative claims and Explorys EMR data**

- Comprehensive longitudinal patient record from each of a patient’s providers
- Payments, including patient responsibility
- Outpatient prescription fills including specialty pharmacy
- Coverage eligibility
- Vital signs, biometrics
- Medical/surgical history
- Laboratory results
- Implantable devices
- Patient-reported outcomes
- Inpatient drugs and ambulatory prescriptions

The linking is deterministic at the patient level and the linked data set is de-identified data as required under HIPAA provisions.

**Total children with clinical evidence and diagnosis of obesity in IBM Explorys Cohort Discovery**

Only 4.2% of children with clinical evidence of being obese had a diagnosis in 2011, and only 6.5% had one in 2016

<table>
<thead>
<tr>
<th>Year</th>
<th>Clinical evidence</th>
<th>Clinical evidence and diagnosis</th>
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</thead>
<tbody>
<tr>
<td>2011</td>
<td>42,730</td>
<td>1,780</td>
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<tr>
<td>2016</td>
<td>205,980</td>
<td>13,450</td>
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**FACT FILE PARTNER:**

IBM Watson Health

Solutions from Truven Health Analytics® are being rebranded as IBM Watson Health

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Methodology

To observe the differences in the prevalence of clinical evidence and diagnosis of obesity, analysts extracted data using two different data sources: Explorys EMR data, using IBM Explorys Cohort Discovery, and the IBM MarketScan Explorys Claims-EMR Data Set, which links the EMR and commercial claims data. Analysts compared children age 0–19 years in 2011 and 2016 by age, sex, and comorbidities associated with obesity with:

- Clinical evidence in EMR data: height and weight measures calculated to Body Mass Index (BMI) percentile
- EMR and/or claims diagnosis of obesity

Age distribution of children with clinical evidence and diagnosis of obesity in IBM Explorys Cohort Discovery

- Age distribution of clinical evidence and diagnosis of obesity among total with a Body Mass Index (BMI) reading of obese
- Age distribution of clinical evidence and diagnosis of obesity among children with both a BMI reading of obese and a diagnosis of obesity

Children with EMR and claims diagnosis of obesity by age in IBM MarketScan Explorys Claims-EMR data set

- Age distribution of obesity among children with EMR and claims diagnosis

Children with EMR and claims diagnosis of obesity by sex in IBM MarketScan Explorys Claims-EMR data set

- Sex distribution of obesity among children with EMR and claims diagnosis

Comorbidities of children with clinical evidence and diagnosis of obesity in IBM MarketScan Explorys Claims-EMR data set

- Percentage of obese children

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