

# CLINICAL AND ECONOMIC BURDEN OF OTITIS MEDIA IN CHILDREN UNDER 5 IN THE UNITED STATES



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## BACKGROUND



OM is one of the most common childhood illnesses and a frequent cause of antibiotic use among children under 5 years old.<sup>1</sup>



Overall, OM incidence declined after introduction of PCV7 and plateaued in the late PCV13 era.<sup>2</sup>



An increase in OM episodes caused by non-typeable *Haemophilus influenzae* and non-vaccine type *Streptococcus pneumoniae* has been reported.<sup>3</sup>



The objective of this study was to assess incidence of OM, TTP and HL complication by age groups, and OM treatment costs, in US children under 5 years in the late post-PCV era (2016–2017).

## METHODS: Retrospective observational study

Data : IBM 2021Q2 MarketScan databases  
ICD-10 procedure codes\*

2016 2017 2018 2019 2020

Incidence & associated costs of pediatric OM episodes

TTP and HL as OM complication

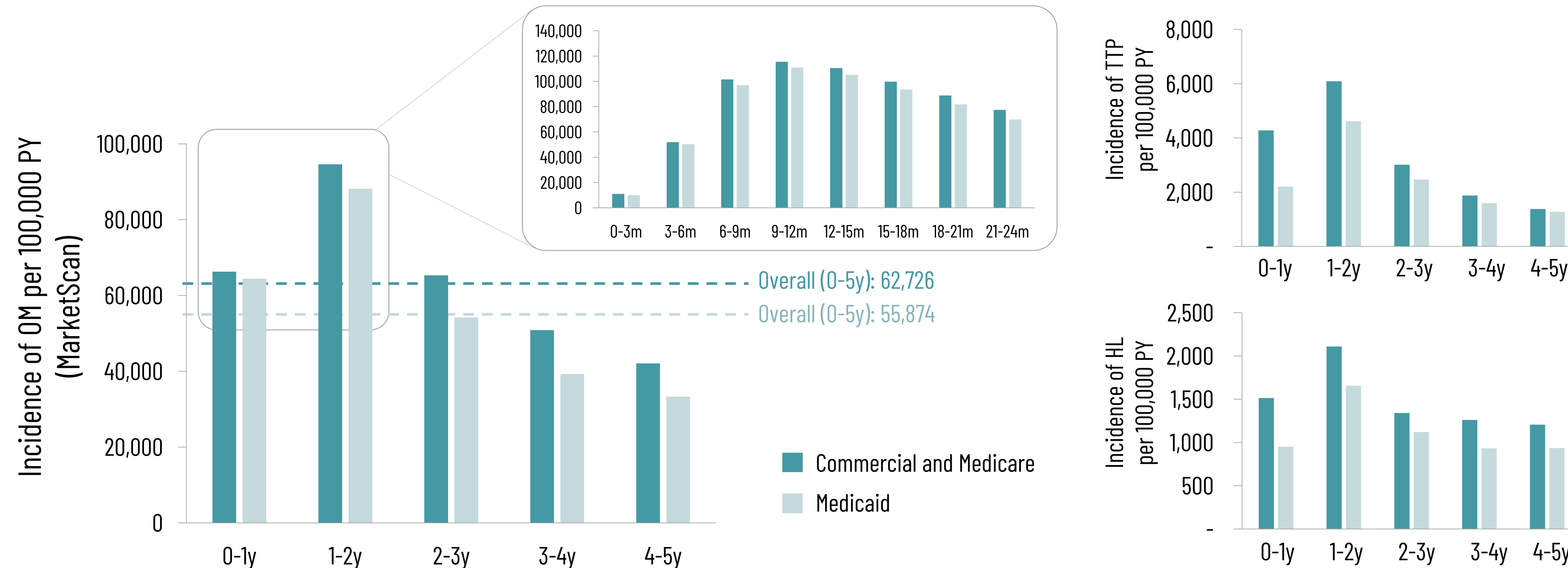
Costs of treatments of OM & complication

Total cost weighted by the proportion of children covered under Commercial insurance & Medicaid, respectively and adjusted to 2020

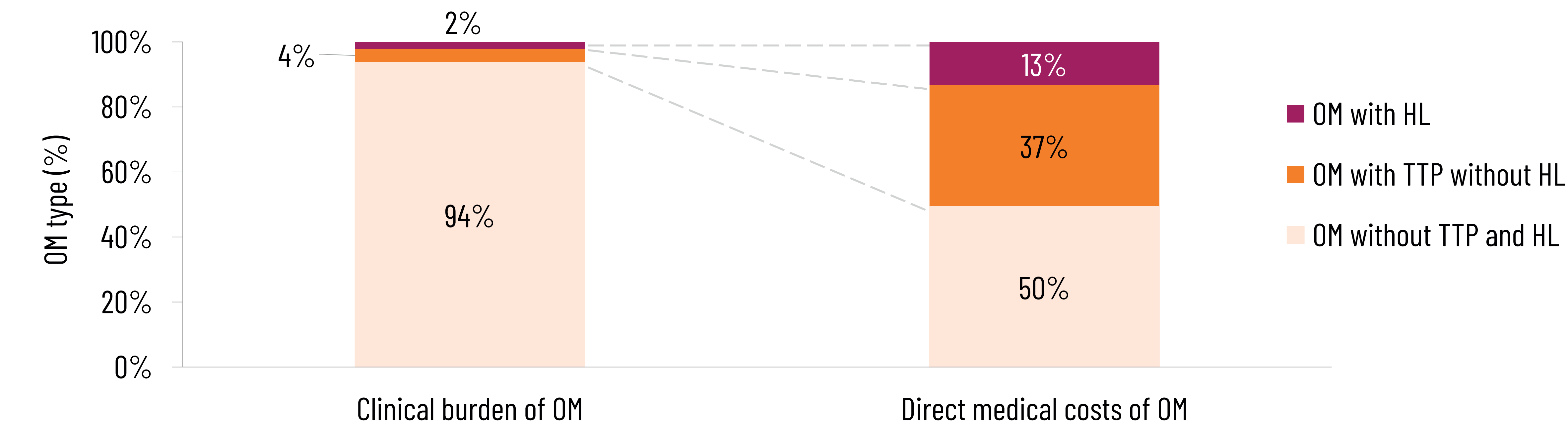
\*OM episodes : claims with H65X and H66X, except allergic OM (H6511X and H6541X). A 30-day interval between two consecutive claims was used to distinguish two different episodes. HL: claims with ICD H90X + previous OM episode within 1 year. TTP: CPT & ICD-10 procedure codes linked to tympanostomy, myringotomy and drainage.

## RESULTS

The incidence of OM among US children under 5 years remained high in 2016/2017 and reached a peak between 6 and 15 months.



The overall economic burden of ~5 billion USD (adjusted to 2020 price) is mostly driven by outpatient episodes treatment and TTP. Most OM episodes (99.9%) are treated in an outpatient setting.



Abbreviations: CPT: Current Procedural Terminology; HL: hearing loss; ICD-10: International Classification of Diseases 10th Revision; m: months; OM: otitis media; PCV(7/13): (7/13-valent) pneumococcal conjugate vaccine; PY: person-years; TTP: tympanostomy tube placement; y: years.

## CONCLUSIONS

The burden associated with OM in US children under 5 years remains significant (~5 billion USD), incidence peaks between 6 and 15 months.

These results are consistent regardless of healthcare re-imbursment scheme (commercial vs. state-funded).

New preventive options are needed to address this unmet need.

## LIMITATIONS

Limitations include those linked to the nature of claims data and of the MarketScan sample population (e.g., potential lack of representativity), the TTP/HL could be associated with OM (time sequence of events without proven causality), and difficulties to differentiate between OM, TTP and HL costs.

The situation of OM may have evolved since 2016–2017 (note: period 2018–2020 was used for HL post-OM analysis).

Only direct medical costs were analyzed, potentially under-estimating the total economic burden related to OM.

References: 1. Monasta L et al. Burden of Disease Caused by Otitis Media: Systematic Review and Global Estimates. *PLoS ONE*. 2012. 7(4):e36226. 2. Kaur R et al. Epidemiology of Acute Otitis Media in the Postpneumococcal Conjugate Vaccine Era. *Pediatrics*. 2017. 140(3):e20170181. 3. Schilder AG et al. Otitis media. *Nat Rev Dis Primers*. 2016. 2(1):16063.

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Conflicts of interest: DD is employed by the GSK group of companies. EB, LT, JP and MS are employed by and hold shares in the GSK group of companies. LBD is a consultant for the GSK group of companies.

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