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Abstract

Objectives: Mastoidectomy is a common otolaryngology procedure performed as either inpatient or ambulatory surgery. We investigate the impact of payor mix on the frequency of statewide inpatient vs. outpatient mastoidectomy from 1995-2007.

Study Design: Retrospective analysis of a statewide inpatient and ambulatory surgery database from 1995-2007.

Methods: All cases of inpatient and ambulatory mastoidectomy in the database were identified. In addition, age group of the patients, gender, Health Service Area (HSA) in which the surgery was performed, payor status, and associated ICD-9 diagnosis codes were also extracted.

Results: Between 1995-2007, 23,161 mastoidectomies were performed with 68% performed in the ambulatory setting. The mean age was 37 years; males (55%) and those aged 20-44 years (35%) comprised the majority of cases. The most common ICD-9 codes were for conductive hearing loss, otitis media, chronic mastoiditis, and cholesteatoma. Although a majority (50%) of cases were performed in HSA 7, 40% of inpatient and 56% of ambulatory cases were performed in other HSAs. There was a significant increase in ambulatory cases over time: from 30% in 1995 to 80% in 2007. Simultaneously, there was a shift in payor mix from 1995 to 2007; 36% of inpatient and 21.5% of ambulatory cases were paid for by Medicare or Medicaid.

Conclusions: Between 1995-2007, there has been a dramatic increase in mastoidectomy being performed in the ambulatory setting. The shift in the site of surgery may be related to a change in payor mix with an increasing proportion of government insurance.

Background

Common procedures in otolaryngology, including thyroidectomy, myringotomy, and tonsillectomy, have been assessed for safety and are often performed in the ambulatory setting.¹⁻² In 2012, 91.8% of ear surgeries and 86.7% of nose, mouth, and pharynx surgeries were done in ambulatory settings.³ This shift is in large part due to advances in technology and the impact of health care policy.⁴

Although performed routinely for chronic otitis media or cholesteatoma, less is known about the incidence or payor mix of patients receiving a mastoidectomy in either setting. We investigate the impact of payor mix on the frequency of inpatient and ambulatory mastoidectomy from 1995-2007 in New York State.

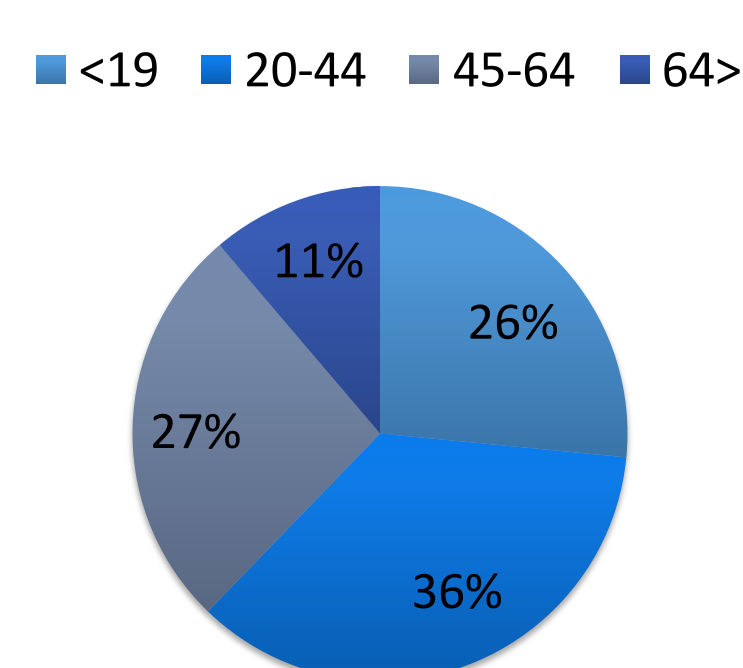


Figure 1. Distribution of cases by age group

Methods and Materials

The SPARCS database was established and is maintained by the New York State Department of Health

- Inpatient discharge and ambulatory surgery data
- Public and de-identified

Data was extracted using Clinical Classification Software (CCS) procedure group 024 for "mastoidectomy," which includes ICD-9 codes 2041, 2042, 2049

- Inpatient and ambulatory cases from 1995-2007
- Demographics include age, gender, Health Service Area (HSA), payor status, and ICD-9 diagnosis codes
- Children ≤ 19 years and adults ≥ 20 years. Age was divided into subgroups: 20-44, 45-64, and ≥ 65

Results

The majority (68%) of surgeries in this sample were performed in the ambulatory setting. Adults aged 20-44 and males comprised the largest subset of patients in both settings (Figure 1). The pediatric subset of patients comprised 26% of the sample. Between 1995 and 2007, there was a decreasing trend in inpatient mastoidectomy and increasing trend in ambulatory mastoidectomy (Figures 4 and 5).

Although a majority of procedures occurred in HSA-7 New York City, nearly 30% of inpatient surgeries and almost half of ambulatory surgeries occurred in other areas of the state (Figure 2). A majority of claims were paid for by private insurance in both settings, although this was higher in the ambulatory setting (Figure 3). Most surgeries were performed due to otitis media and related conditions, as well as mastoiditis and cholesteatoma.

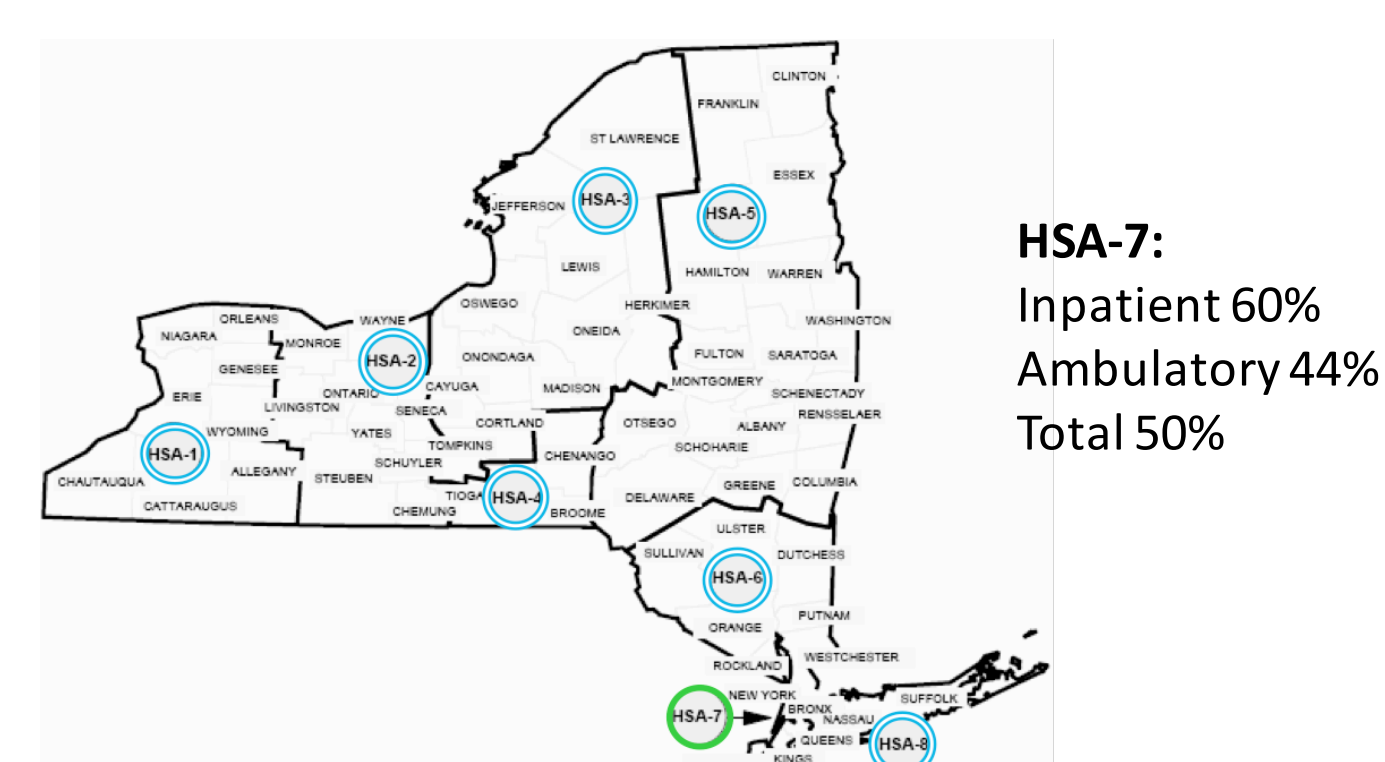


Figure 2. New York State Health Service Areas (HSAs)

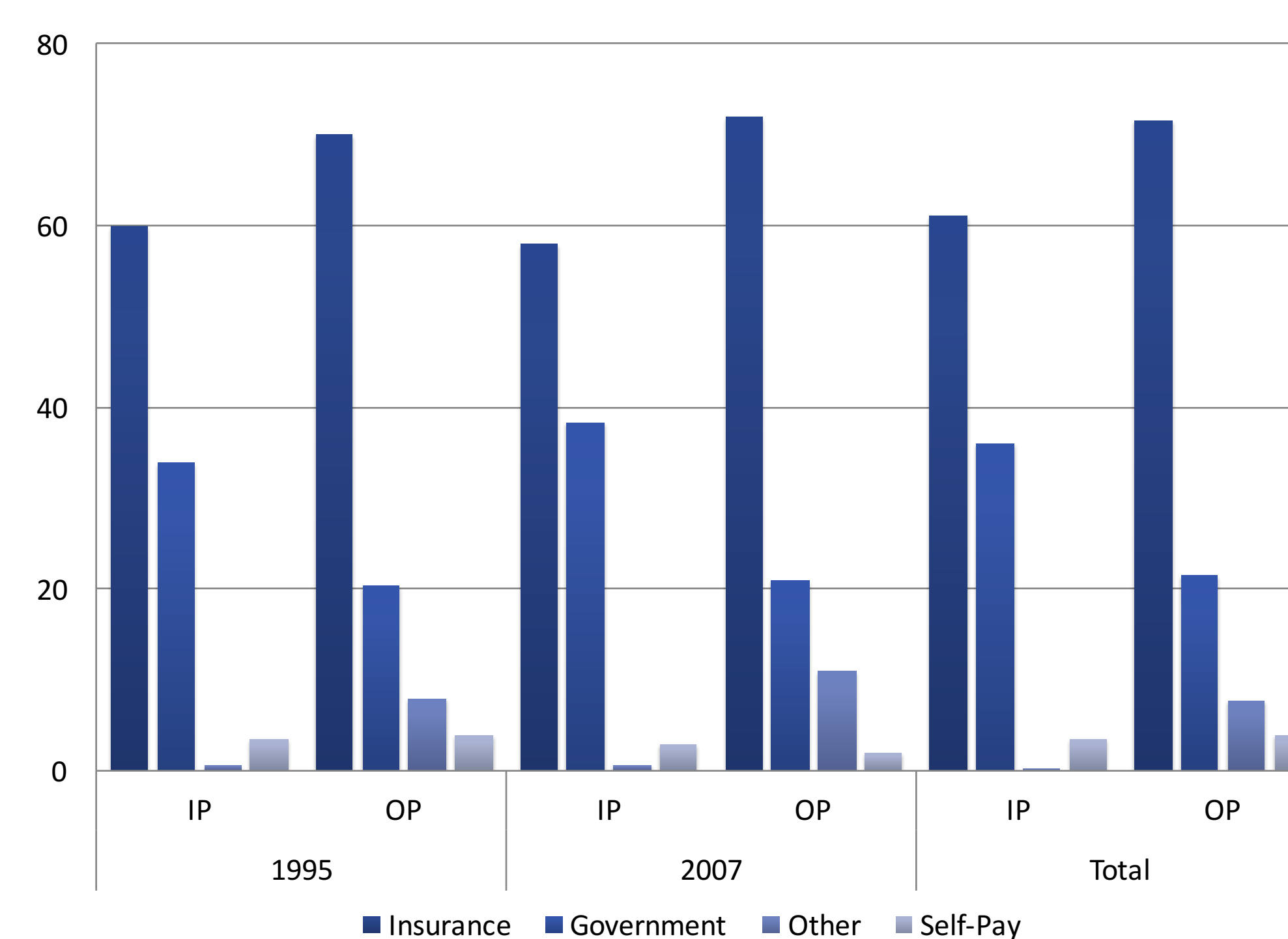


Figure 3. Percentage of cases by year, insurance type and surgical setting

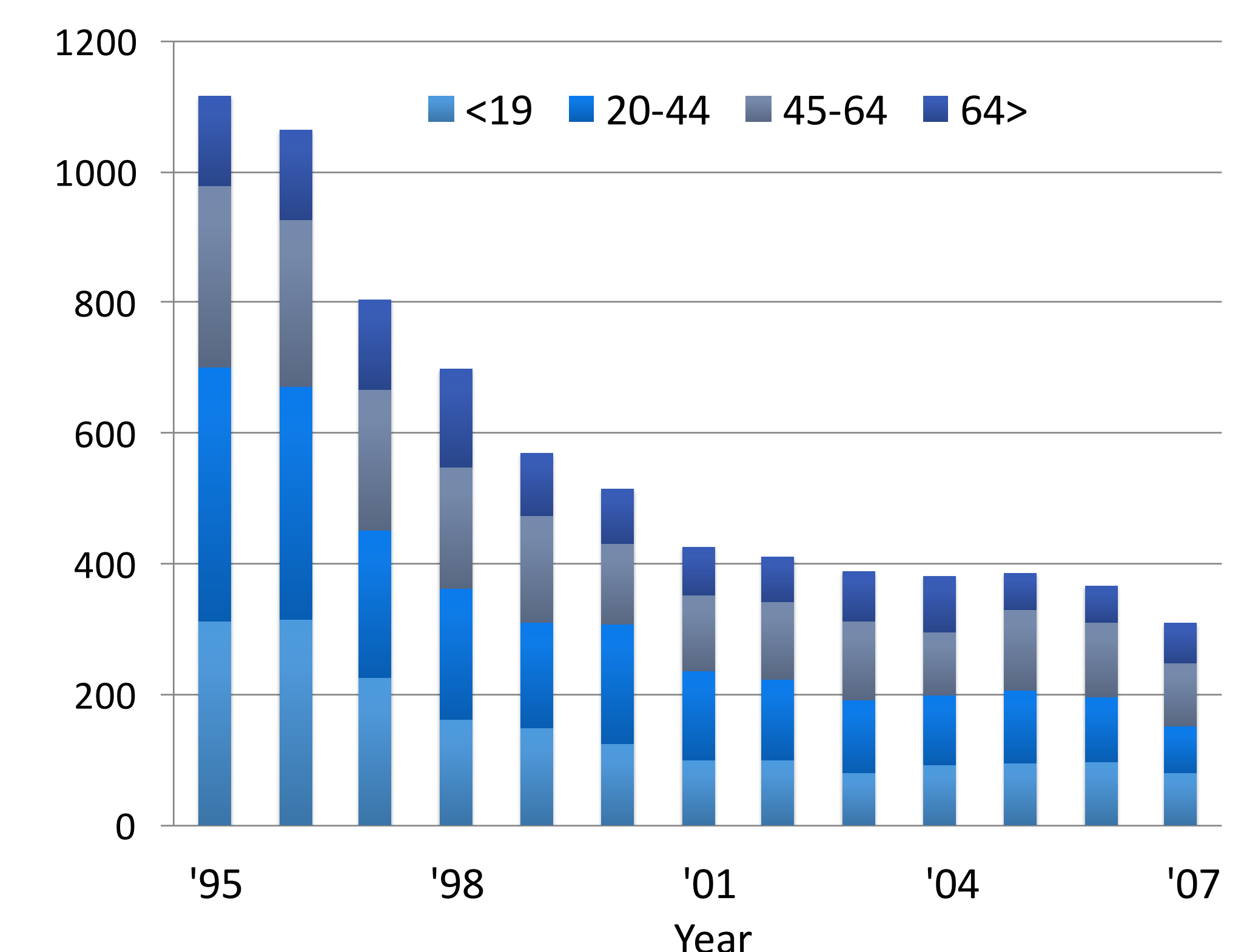


Figure 4. Number of inpatient cases by year and age group

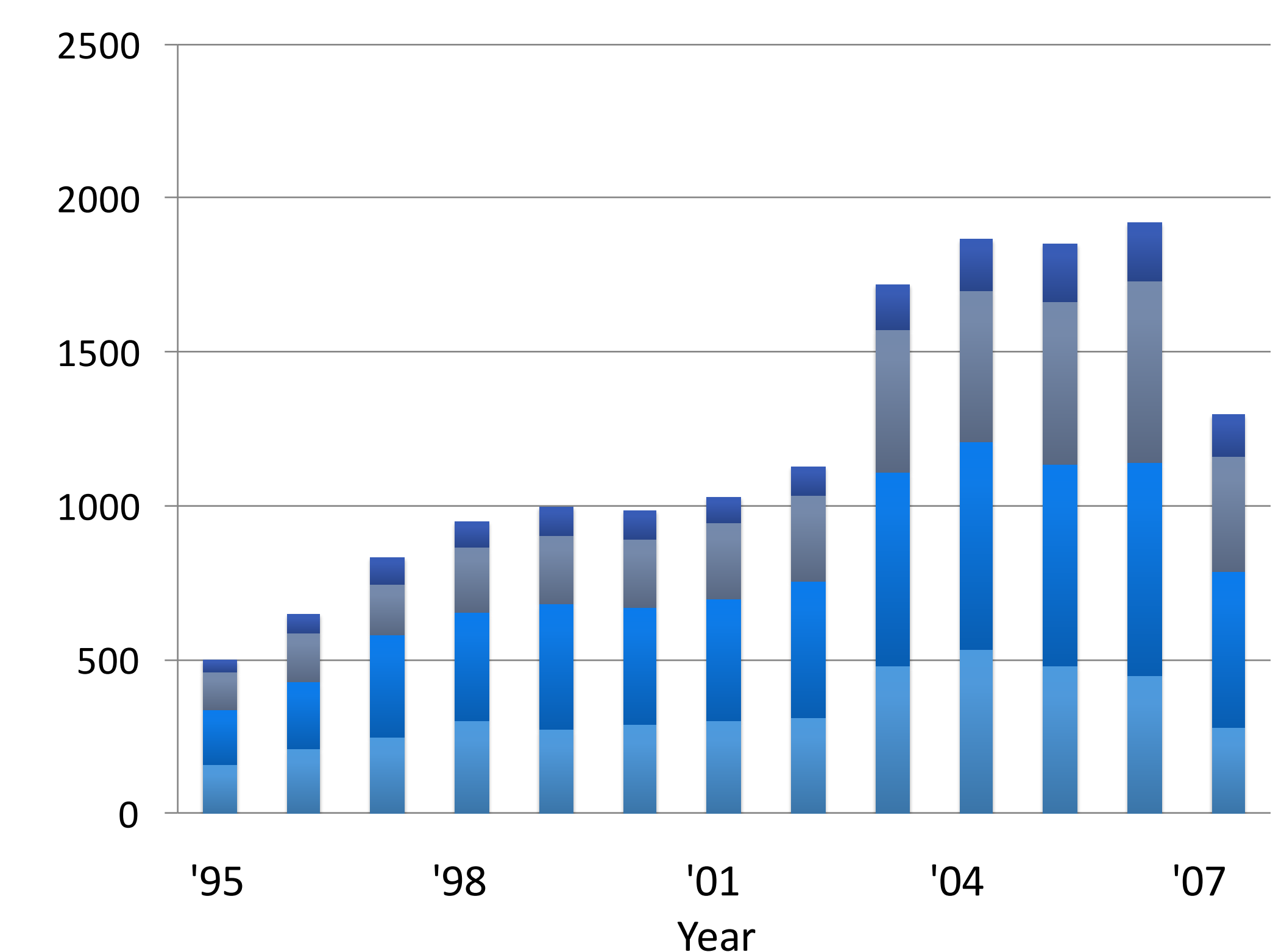


Figure 5. Number of ambulatory cases by year and age group

Discussion

Most mastoidectomies in New York State from 1995-2007 were performed in the ambulatory setting. Males aged between 20 and 44 years comprised the largest subset of patients, which may suggest a greater incidence of ear disease in this age group.⁵ A variety of factors, including age⁶⁻⁷, patient co-morbidity, and post-operative nausea and vomiting have been considered in assessing safety and setting of surgery.⁸⁻⁹ The use of this database is limited by the inability to distinguish between the types of mastoidectomy, severity of disease, or post-operative complications which may have influenced the site of surgery. Although the payor mix remained similar during this time period, there was a slight increase in the number of cases insured by Medicare or Medicaid in the inpatient setting. The shift from inpatient to ambulatory surgery is consistent with changes seen in otolaryngology and most areas of surgery. The shift may be related to changes in New York State health policy and the distribution of healthcare facilities in Health Service Areas.¹⁰⁻¹¹ Future studies may address the impact of the Affordable Care Act on payor mix and the site of surgery.

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