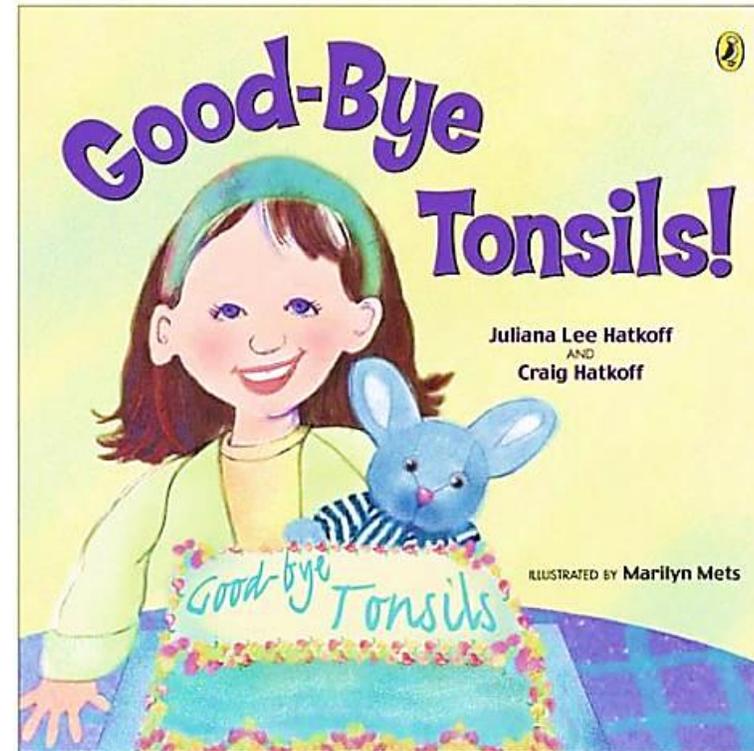
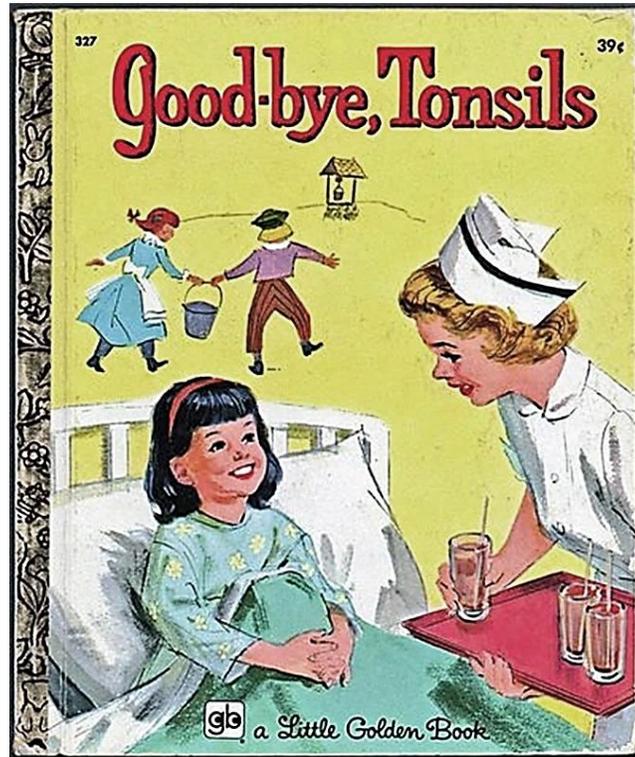


## How many tonsillectomies are necessary?



### **An eleven year retrospective study of indications and eligibility for childhood tonsillectomy in UK**

Dana Šumilo, Ronan Ryan, Tom Marshall

# Tonsillectomy

- First mentioned in Hindu medicine around 1,000 years B.C.
- One of the most common surgical procedures in children
  - UK 2015/16: 35,000 tonsillectomies
  - National Health Service cost: £39,000,000
- Large national and international variations in tonsillectomy rates
- Safety:
  - general anaesthesia
  - postoperative bleeding

# Evidence based indications

- **Sore throat (severely affected children)**

- **Modest reduction** in recurrent sore throats in children meeting **Paradise criteria** (*Cochrane Review 2014*)

**Documented sore throats:  $\geq 7$  in a year OR  $\geq 5$  yearly in the last 2 years OR  $\geq 3$  yearly in the last 3 years**

**At least 1 clinical feature per episode** (Temperature  $\geq 38.3^{\circ}\text{C}$  / Cervical adenopathy  $\geq 2$  cm / Tonsillar exudate/ Culture positive for group A streptococcus)

- Periodic fever, aphthous stomatitis, pharyngitis and cervical adenitis syndrome **PFAPA** (*Cochrane 2014*)

- positive effect on symptom resolution / decrease in episodes based on moderate quality RCTs

- **Tonsillar tumour** – very uncommon in children

# Indications without convincing evidence

- **Sore throat (less severely affected children)**
  - No significant difference in number of sore throats (*Cochrane review 2014*)
  - No longer term benefits, no significant difference in quality of life (*AHRQ review 2017*)
- **Obstructive sleep apnoea (OSA)/ sleep-disordered breathing** (*Cochrane 2015, AHRQ 2017*)
  - QoL: short term improvements (in 5-9 year olds)
  - Attention and neurocognitive performance: no benefit
  - Resolves spontaneously in about half of children in <1 year
  - Unevaluated in younger children; inconclusive evidence in those with an unconfirmed diagnosis
- **Quinsy (peritonsillar abscess)**
  - Limited evidence, no controlled studies
- **Guttate and chronic plaque psoriasis**
  - Limited evidence, no trials in children
- **Glomerulonephritis**
  - Inconclusive evidence based on RCT (mainly adults) in Japan 2014

# Aims

- **Describe indications for tonsillectomies carried out** in children in the UK
  - proportion of tonsillectomies that are evidence based
- **Describe incidence of evidence based indications** for tonsillectomy
  - potential need

# Methods

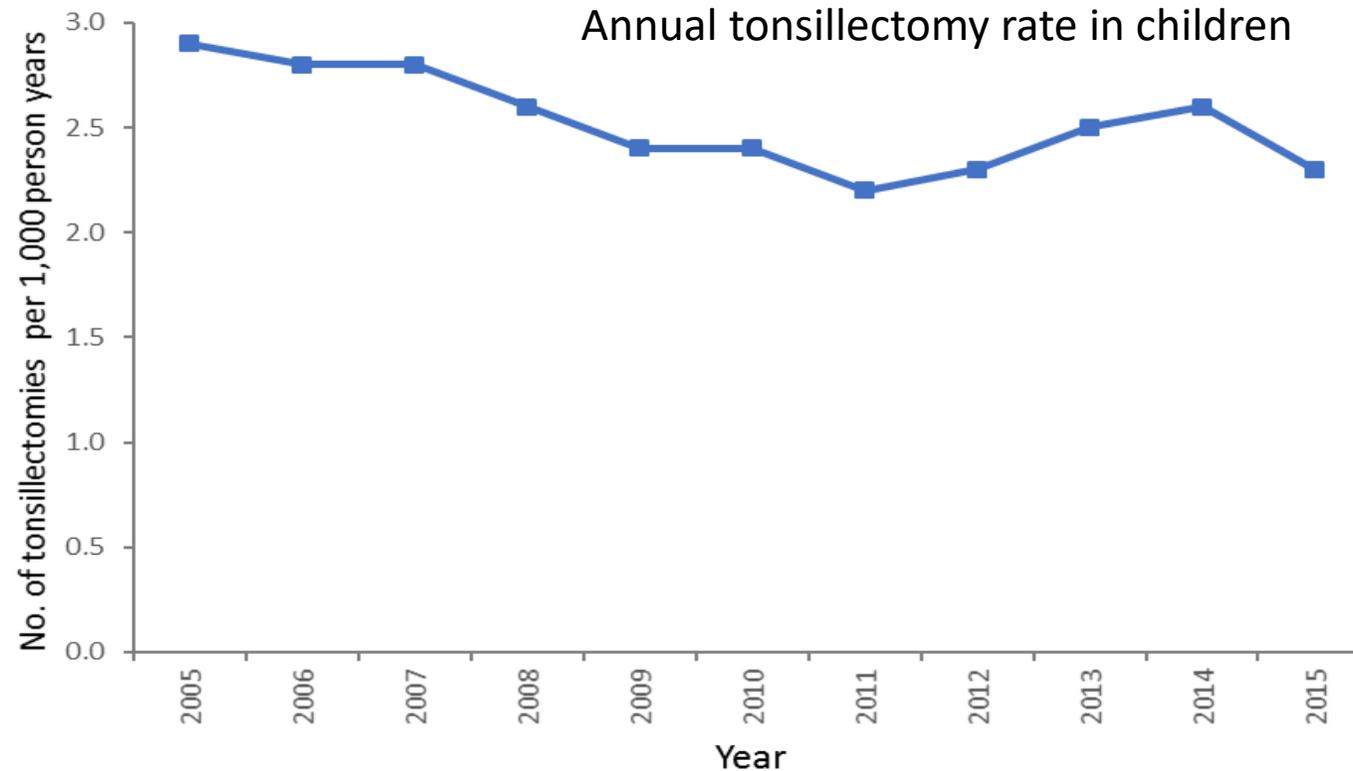
- Retrospective open cohort study of children aged 0 - 15 years
- The Health Improvement Network (THIN) database of patient records from 500 UK general practices
- Contains information on diagnoses, symptoms, referrals to secondary care, tests and treatments
- Broadly representative of the UK population in terms of demographics and medical condition prevalence

# Methods

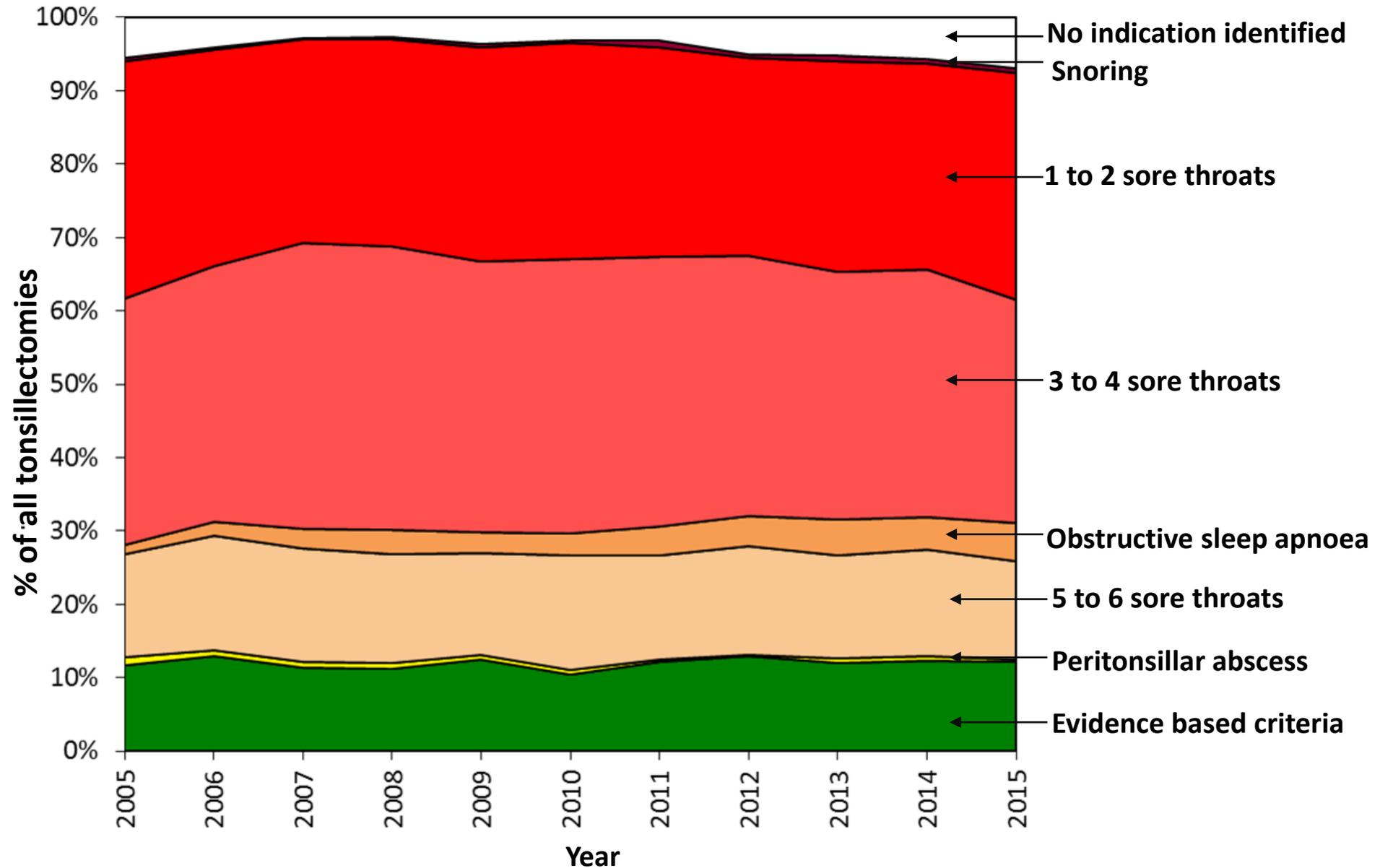
- Exposure
  - Potential indications for tonsillectomy were identified
  - The strongest indication based on evidence, if several potential indications
- Broad definition of indications
  - e.g. for sore throats we used consultations for sore throats or any other upper respiratory tract infection
  - Sensitivity analysis broadening the definition further to include antibiotic prescribing relevant to sore throats (penicillin V, erythromycin and clarithromycin)

# Cohort characteristics (2005-2015)

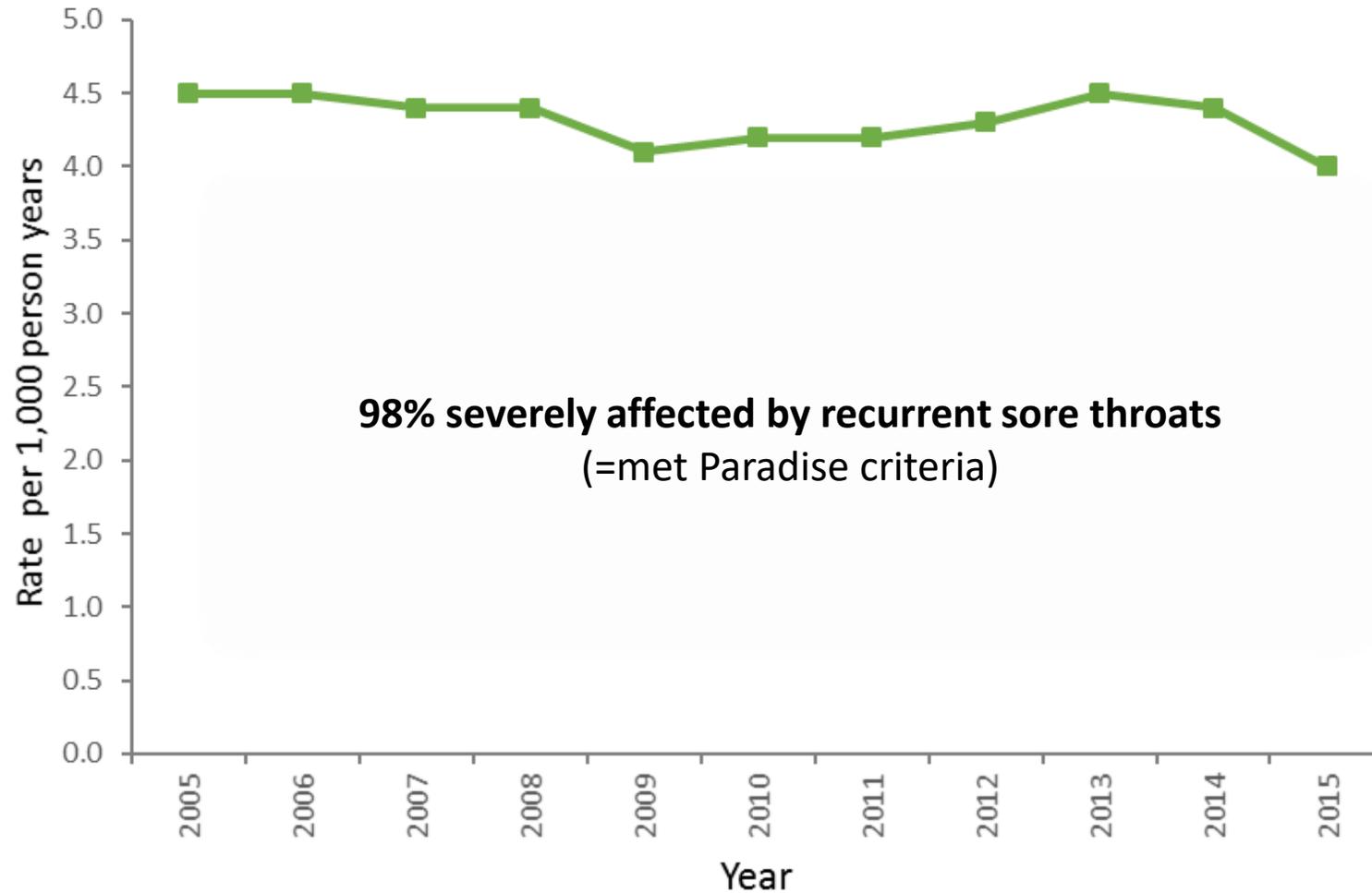
- 1,471,560 children aged 0 to 15
- 6,333,566 person years of follow-up
- 16,015 tonsillectomies



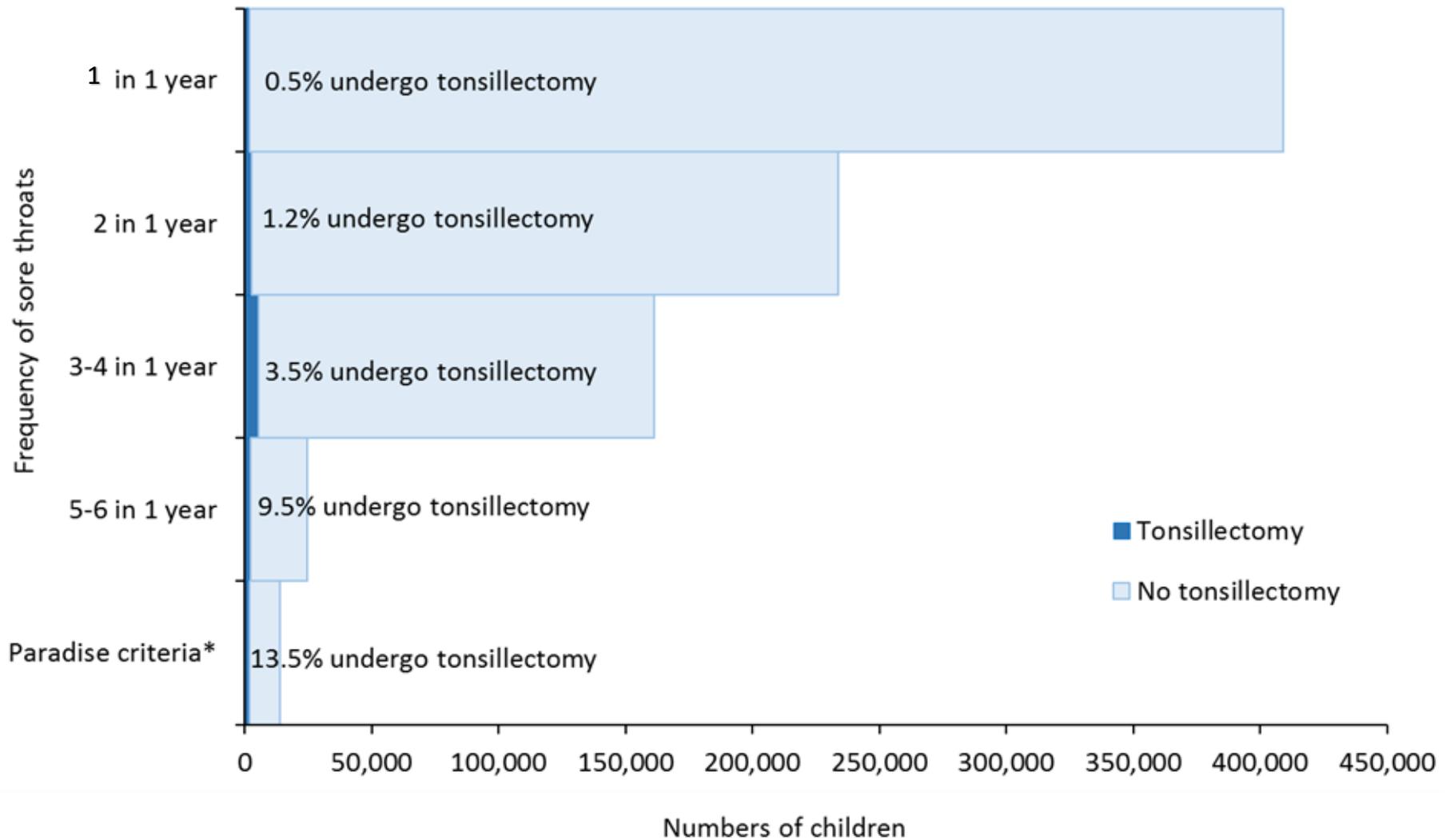
# Proportion of tonsillectomies due to different indications



# Incidence of evidence based indications over time



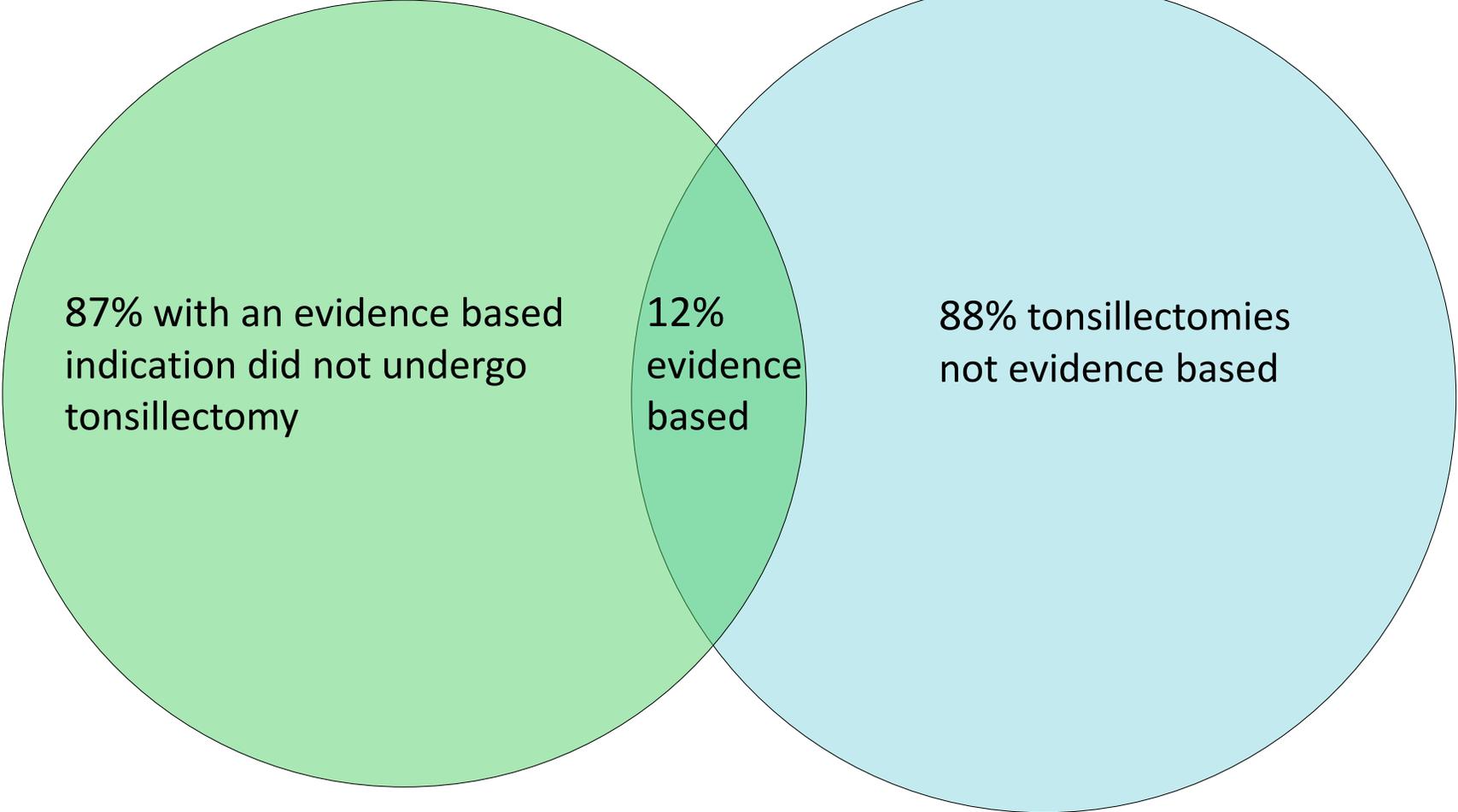
# Sore throat frequency and tonsillectomies



# Mismatch between need and tonsillectomies

**Children with evidence based indications (N=14,528)**

**Tonsillectomies (N=16,015)**



# Implications for practice and research

- Significant scope to improve tonsillectomy practice in the UK
  - 30,000 unnecessary childhood tonsillectomies in the UK annually
  - Tonsillectomy offers only **modest** benefits in **severely affected** children with **documented** sore throats
  - Parents should be informed that most children do not undergo tonsillectomy
- Need for RCTs on tonsillectomy for:
  - peritonsillar abscess
  - guttate and chronic plaque psoriasis
  - sleep disordered breathing