Healthcare Resource Use Among Patients with Chronic Rhinosinusitis with Nasal Polyps in the United Kingdom: Results of an Expert Elicitation Survey

Danny Gibson[1], Santiago Zuluaga Sanchez[2], Matthew Wallace[3], Emilija Veljanoska[4], Agota Szende[3]

[1]Market Access and Pricing, AstraZeneca, Cambridge, UK; [2]Health Economics, Amgen, Uxbridge, UK; [3]Market Access Consulting & HEOR, Fortrea, Leeds, UK; [4]Market Access Consulting & HEOR, Fortrea, Munich, Germany

EE503

Introduction

- Chronic rhinosinusitis with nasal polyps (CRSwNP) is a long-term inflammatory condition of the sinuses, which typically manifests as nasal congestion and obstruction, reduction in sense of smell, nasal discharge, facial pressure or pain, and sleep disruption.[1]
- CRSwNP is a common disease, estimated to affect up to 3.0% of people in the United Kingdom (UK).[2,3]
- Despite being a common condition, there is limited data to describe the burden of CRSwNP with respect to healthcare resource use (HRU) associated with its management in the UK.

Objective

- To quantify HRU across the treatment pathway for patients with CRSwNP in the UK, stratified by disease severity.

Method

- HRU estimates were obtained through an expert elicitation process, consisting of a series of one-to-one semi-structured interviews with practicing consultant ear, nose and throat (ENT) surgeons within the UK National Health Service (NHS).
- Clinical experts were identified via an initial screening survey designed to assess eligibility for participation. Physicians were eligible for inclusion if they met the following criteria: i) primary medical specialty in otorhinolaryngology, ii) a minimum of five years' post-specialization clinical experience, and iii) direct management of at least ten patients with CRSwNP per month.
- Data obtained from expert interviews were collated and synthesized to generate consolidated estimates of HRU across the CRSwNP treatment pathway.
- For each resource item (e.g., clinical consultations, diagnostic procedures, surgical interventions), the proportion of patients with mild, moderate or severe CRSwNP estimated to receive the service, and the frequency of use per patient per year, were recorded.
- Mild, moderate and severe CRSwNP were defined as scores on the 22-item Sino-Nasal Outcomes Test (SNOT-22) of ≤20, 21–50 and >50, respectively.[4]
- NHS reference costs were applied to HRU data to estimate per-patient direct healthcare costs by disease severity level.[5]

Results

Physician characteristics

- Five consultant ENT surgeons with a practice in the NHS participated in the research.
- All participants had extensive experience in treating CRSwNP; median ENT practice was 25 years and CRSwNP patient encounters ranged from 20 to 90 per month.
- One participant was based at a tertiary care facility in the South of England, while the remaining four practiced in secondary care settings located in the Southeast, Midlands, and Scotland.

CRSwNP diagnosis and monitoring

- Nasal endoscopy is the primary diagnostic tool, performed in 100% of patients presenting with symptoms indicative of CRSwNP (**Figure 1**).
- Other diagnostic tools, such as biopsy (mean: 3% of patients) and magnetic resonance imaging (mean: 1% of patients), are used rarely and mostly in instances of suspected neoplastic pathology.
- Blood profile tests are commonly requested to assess the presence of dominant type 2 inflammation endotype as a prognostic marker of poorer disease control and more intensive medical and/or surgical management.
- During the post-diagnostic monitoring phase, nasal endoscopy remains the most consistently used procedure, performed, on average, in 90% of patients (range: 50–100%), and typically occurring once per year.

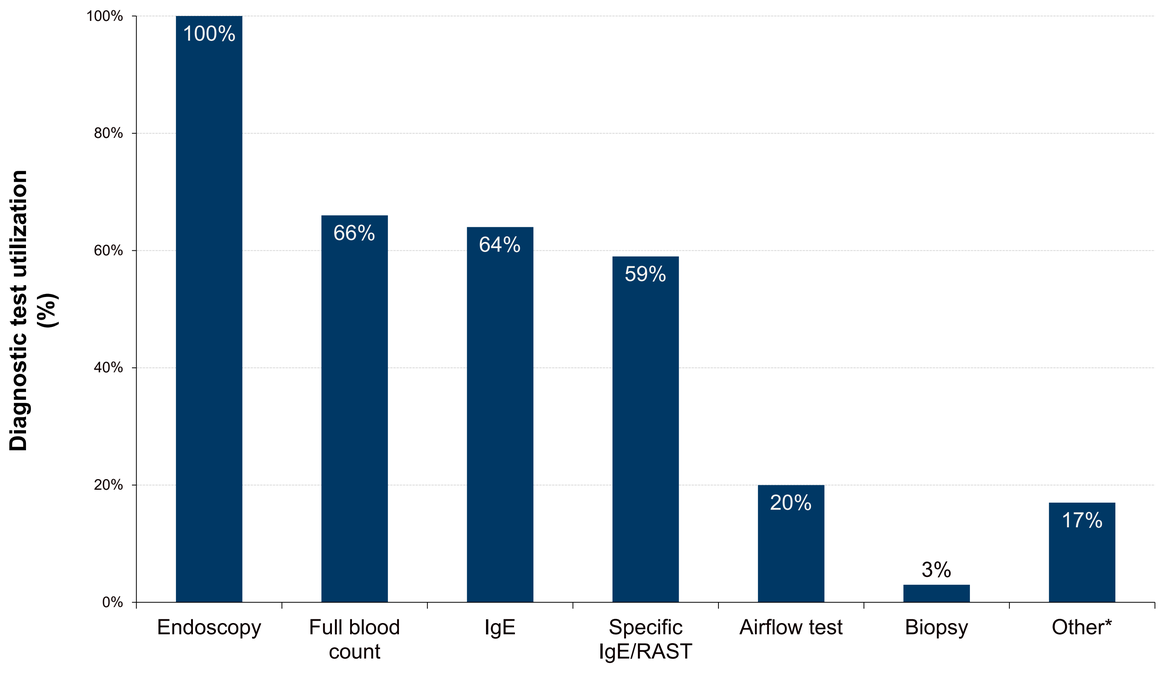

Figure 1. Mean proportion of patients with suspected CRSwNP undergoing each diagnostic test or procedure

*Includes MRI scans, X-ray, tissue eosinophil count, C-reactive protein, MPO, PR3, sputum exam, chemosensory test, and mucociliary function tests.

Treatment

- Daily nasal irrigation and intranasal corticosteroid sprays remain the cornerstone of initial management for all patients with CRSwNP, irrespective of disease severity.
- Oral corticosteroids (OCS) are occasionally prescribed in instances of severe symptom burden (flares) or in anticipation of surgery, where polyp size and/or shape may inhibit access; OCS courses range from one week to six weeks in duration.
- Surgery is typically indicated where patients experience an inadequate response to maximal medical therapy; functional endoscopic sinus surgery (FESS) is preferred over polypectomy (75–100% of surgical cases) for sinus symptom improvement but may be limited by patient factors and local surgical capacity.
- Participants estimated that 35–100% of patients undergo surgery within five years of diagnosis, increasing to 50–100% within ten years.
- Despite its established role in relieving obstructive symptoms and improving quality of life, there was a shared acknowledgement among participants that surgical intervention rarely results in lasting disease control.

Visits

- Median (range) annual visits (all) were estimated to be 3 (2–9) for mild, 7 (3–16) for moderate, and 13 (3–29) for severe CRSwNP cases, encompassing general practitioner, ENT, immunology, pulmonology, rheumatology, specialist nurse, and accident and emergency (A&E) services (**Table 1**).
- Median (range) annual specialist visits were estimated to increase with disease severity: 2 (1–2) for mild, 4 (1–4) for moderate, and 9 (2–16) for severe CRSwNP.

Table 1. Median annual healthcare visits by CRSwNP severity

Median visits (range)	CRSwNP disease severity		
	Mild	Moderate	Severe
All	3 (2-9)	7 (3-16)	13 (3-29)
GP	1 (1-2)	3 (1-4)	4 (1-12)
ENT	2 (1-2)	3 (1-4)	4 (1-4)
Immunology	0 (0-1)	0 (0-1)	1 (0-2)
Pulmonology	0 (0-1)	1 (1-3)	3 (1-4)
Rheumatology	0 (0-0)	0 (0-1)	0 (0-3)
Specialist Nurse	0 (0-1)	0 (0-1)	0 (0-1)
A&E	0 (0-1)	0 (0-1)	1 (0-2)

Costs

- Mean total direct CRSwNP-related healthcare costs in the year following patient presentation to an ENT for diagnosis and initial treatment were estimated to be £1,400, £1,877, and £2,981 for mild, moderate, and severe cases, respectively (**Figure 2**).
- Mean total direct CRSwNP-related healthcare costs associated with patient monitoring in subsequent years were estimated to be £612, £1,089, and £2,193, for mild, moderate, and severe cases, respectively.
- Mean total direct costs associated with surgical cases (assuming a case mix of 3:1 FESS to polypectomy) were estimated to be £3,987, including the cost of ENT visits, pre/post-operative endoscopy, pre-operative computed tomography scan (FESS procedure), and the surgical procedure.

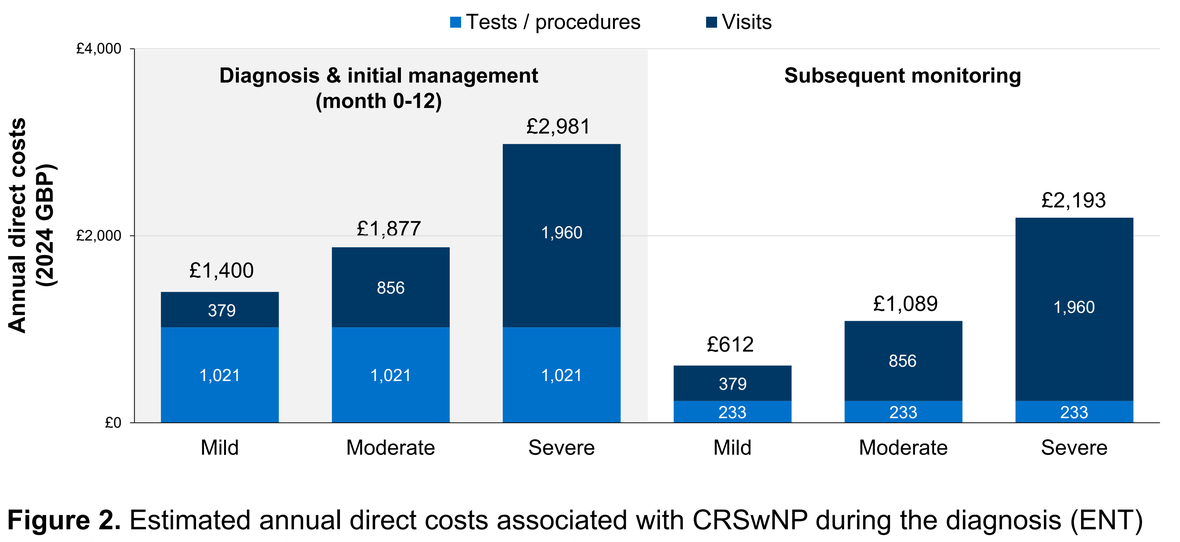

Figure 2. Estimated annual direct costs associated with CRSwNP during the diagnosis (ENT) and initial management period and subsequent monitoring period by disease severity

Conclusions

- CRSwNP imposes a significant and increasing burden on UK healthcare resources as disease severity progresses.
- Most patients seeking specialist care will undergo surgery due to an inadequate response to current maximal medical therapy with corticosteroids.
- Surgical procedures account for the highest cost-related utilization. These findings highlight the importance of effective treatment strategies that may prevent or delay the need for surgical intervention.

Abbreviations

A&E = Accident & emergency; CRSwNP = Chronic rhinosinusitis with nasal polyps; ENT = Ear, nose & throat; FESS = Functional endoscopic sinus surgery; GP = General practitioner; HRU = Healthcare resource use; IgE = Immunoglobulin E; NHS = National Health Service; OCS = Oral corticosteroids; RAST = Radio-Allergo-Sorbent-Test; SNOT-22 = Sino-Nasal Outcomes Test; UK = United Kingdom

References

1. Hopkins C. Chronic rhinosinusitis with nasal polyps. *N Engl J Med*. 2019;381(1):55–63.
2. Ear, Nose and Throat (ENT) UK (2016). Commissioning guide: chronic rhinosinusitis.
3. Stevens W, Schleimer R, and Kern R. Chronic rhinosinusitis with nasal polyps. *J Allergy Clin Immunol Pract.* 2016;4(4):565–572.
4. Toma S, Hopkins C. Stratification of SNOT-22 scores into mild, moderate or severe and relationship with other subjective instruments. *Rhinology*. 2016;54(2):129–133.
5. NHS England (2025). National schedule of NHS costs 2023/24.

Poster presented at ISPOR Europe 2025, 9–12 November, Glasgow, Scotland, UK