COMMISSIONING GUIDE FOR CHRONIC RHINOSINUSITIS

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NICE has accredited the process used by Surgical Speciality Associations and Royal College of Surgeons to produce its Commissioning guidance. Accreditation is valid for 5 years from September 2012. More information on accreditation can be viewed at www.nice.org.uk/accreditation
Rhinosinusitis is defined as inflammation of the nose and paranasal sinuses. In acute sinusitis, there is complete resolution of symptoms within 12 weeks of onset; persistence of symptoms for more than 12 weeks is categorised as chronic rhinosinusitis. Acute rhinosinusitis usually has an infective aetiology. The aetiology of chronic rhinosinusitis is largely unknown but is likely to be multifactorial, with inflammation, infection and obstruction of sinus ventilation playing a part.

Chronic rhinosinusitis is a highly prevalent condition affecting 10% of the UK adult population. It is associated with significant reduction of quality of life, high healthcare utilisation and significant absenteeism/presenteeism.

Diagnosis is made by the presence of two or more persistent symptoms for at least 12 weeks, one of which should be either nasal obstruction and/or nasal discharge, and/or facial pain/pressure or anosmia.

Chronic rhinosinusitis is sub-categorised by the presence or absence of nasal polyps (CRSwNP or CRSsNP respectively).

Treatment entails a trial of maximum medical therapy, with surgery reserved for recalcitrant cases, with a diagnosis confirmed by radiology, after an appropriate trial of treatment.

There is over 5 fold variation in procedure rates for sinus surgery per 100,000 population by CCG across England.

email: entuk@entuk.org web: www.entuk.org
### GLOSSARY

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
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<tbody>
<tr>
<td>VAS</td>
<td>Visual Analogue Scale</td>
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<tr>
<td>2WW</td>
<td>2 week wait</td>
</tr>
<tr>
<td>CRS</td>
<td>Chronic Rhinosinusitis</td>
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<tr>
<td>CRSwNP</td>
<td>Chronic Rhinosinusitis with nasal polyps</td>
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<tr>
<td>CRSsNP</td>
<td>Chronic Rhinosinusitis without nasal polyps</td>
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<tr>
<td>ARIA guidelines</td>
<td>Allergic Rhinitis and its impact on Asthma (ARIA) guidelines</td>
</tr>
<tr>
<td>INCS</td>
<td>Intranasal corticosteroids</td>
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<tr>
<td>SNOT</td>
<td>Sinonasal Outcome Test</td>
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<tr>
<td>QOL</td>
<td>Quality of Life</td>
</tr>
<tr>
<td>PPV</td>
<td>Positive predictive value</td>
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</tbody>
</table>
1. HIGH VALUE CARE PATHWAY FOR CHRONIC RHINOSINUSITIS IN ADULTS

**Primary Care Assessment**

History documenting the symptoms included in the diagnostic criteria above;
2 or more persistent symptoms for at least 12 weeks, one of which should be either nasal
obstruction and/or nasal discharge, and/or facial pain/pressure or anosmia

Assessment of severity of symptoms using a 10cm Visual Analogue Scale (VAS) to categorise into
mild (VAS 0 – 3) or moderate/severe (VAS >3) (2)

Examination by anterior rhinoscopy
Any unilateral findings should raise suspicion of neoplasia
Look for visible nasal polyps (consider turbinate hypertrophy in differential diagnosis)

Consider diagnosis of allergic rhinitis in patients (especially those with family history of atopy) with
associated epiphora, itching, sneezing in addition to rhinorrhea – manage according to ARIA
guidelines (3)

Assess for lower airway symptoms and control of asthma (4)

Consider alternate diagnosis in presence of unilateral symptoms, cacosmia, crustung, epistaxis,
orotobal symptoms (diplopia, reduced visual acuity, globe displacement, peri-orbital oedema) or
neurological symptoms (severe frontal headache, signs of symptoms of meningism, neurological
signs) – consider urgent/ 2WW referral in these cases

There is no role for plain X-ray in assessment of CRS (plain X-ray, despite low cost and availability,
has limited usefulness due to underestimation of bony and soft tissue sinus pathology (5,6)) .
Imaging is usually reserved for those who fail medical therapy or have complicated infection/more
serious conditions

**Offer all patients:**

Saline irrigation (7): commercially available positive pressure squeeze bottles or irrigation jugs (Netti
pots) available to aid douching. High volume irrigation more effective than saline sprays (Appendix 1)

Intranasal corticosteroids (INCS) (8-10): advise on correct application technique. Bioavailability varies
between INCS – negligible with mometasone and fluticasone

We do not recommend routine use of antibiotics for CRS in primary care1, due to limited evidence of
efficacy in unselected groups, low specificity of symptomatic diagnosis without endoscopy or
imaging, and risks of increasing antibiotic resistance.

If bilateral large nasal polyps visible on anterior rhinoscopy, consider trial of oral prednisolone
(0.5mg/kg for 5 – 10 days) followed by topical drops (fluticasone propionate 400mcg bd or
beclomethasone tds) applied in the head upside down position, review after 4 weeks of treatment
and refer if no improvement (11)

Reassess symptom control after 3 months

For mild symptoms (VAS 0 -3) – continue with medical treatment as outlined above, emphasise need
for compliance
For persistent moderate/severe symptoms at 3 months:

Assess treatment compliance and technique

Refer to specialist community or secondary care provider for nasal endoscopy and further investigation (12 – 15)

**Recommended Primary Care Pathway**

<table>
<thead>
<tr>
<th>2 or more persistent symptoms for at least 12 weeks, one of which should be either nasal obstruction and/or nasal discharge, and/or facial pain/pressure or loss of smell</th>
<th>Examination by anterior rhinoscopy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment of severity of symptoms using a 10cm VAS to categorise into mild (VAS 0 – 3) or moderate/severe (VAS &gt;3)</td>
<td>Any unilateral findings should raise suspicion of nasal polyps. Look for visible nasal polyps (consider turbinate hypertrophy in differential diagnosis)</td>
</tr>
</tbody>
</table>

2 or more persistent symptoms for at least 12 weeks, one of which should be either nasal obstruction and/or nasal discharge, and/or facial pain/pressure or loss of smell

Consider diagnosis of allergic rhinitis and/or asthma

If associated epistaxis, itching, sneezing in addition to rhinorrhoea – manage according to ARIA guidelines

Assess for lower airway symptoms and control of asthma

**Secondary Care**

Assessment (see above) and consider diagnosis and treatment of co-morbidity – Allergy, ASA triad, systemic conditions (vasculitides, Churg-Strauss, sarcoidosis) etc

Endoscopy – nasal purulence, presence of polyps or oedema in middle meatus supportive of diagnosis of CRS
Consider nasal culture – endoscopically guided middle meatal culture

Disease-specific Patient Reported Outcome Measure to assess symptom severity and response to treatment – 22 item Sinonasal Outcome Test (SNOT-22)

Consider CT where endoscopy findings not supportive and diagnosis is uncertain, or when malignancy or complications of CRS suggested (presence of orbital or neurological signs as above)

For CRSwNP, and moderate/severe symptoms (VAS>3, SNOT-22>)
Continue nasal saline irrigation
Short course oral steroids (0.5mg/kg 5 - 10 days)
Consider topical drops (fluticasone propionate 400mcg bd or beclomethasone tds) or continue intranasal corticosteroid spray
Consider doxycycline (100mg od 3 weeks)

Review after 3 months for moderate disease, 1 month for severe disease

For CRSsNP, and moderate/severe symptoms (VAS>3, SNOT-22>20)
Continue nasal saline irrigation
Continue intranasal corticosteroid spray
Consider long term macrolide antibiotics (most likely to be effective when IgE levels NOT elevated)
Do not use macrolides in patients with significant history of cardiorespiratory disease or those taking statins.

Review after 3 months

For both CRSwNP and CRSsNP
Consider endoscopic sinus surgery after failure of maximum medical therapy above and persistent moderate/severe symptoms
CT mandatory before surgery if not performed earlier in care pathway (does not need to be repeated if no intervening surgical intervention)
When LM<4 alternate diagnosis should be considered, and ESS not usually indicated.

There is insufficient evidence to inform as to the optimum extent of surgery, instrumentation to be used, or post-operative packing materials.
In suitable patients, endoscopic sinus surgery may be performed in an ambulatory setting.

Post-operative care

Many patients likely to require long-term medical maintenance therapy with saline irrigation and INCS
Use of INCS shown to reduce risk of polyp recurrence and is safe for long term use
Surgical intervention does allow enhanced delivery of medical treatment in topical forms (e.g. douching, steroids).
Follow-up after surgery should be tailored to individual patient needs in terms of duration and frequency and may be influenced by other factors such as atopy and co-morbidity.
Once patients are stabilized post-op, further follow-up/maintenance of treatment can be provided in primary care.
**Recommended Secondary Care Pathway**

<table>
<thead>
<tr>
<th><strong>Reassess history and consider diagnosis and treatment of co-morbidity – etc</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>allergy, ASA triad</td>
</tr>
</tbody>
</table>

**Endoscopy - findings supportive of diagnosis of CRS**

- nasal purulence (take sample for culture)
- polyps
- middle meatal oedema

**Disease-specific Patient Rated Outcome Measure to assess symptom severity and response to treatment – 22 item Sinonasal Outcome Test (SNOT-22)**

**Consider CT where:**

- Uncertainty from endoscopy
- neoplasia suspected
- complications of CRS (orbital/neurological)

**Continue nasal saline irrigation +**

For CRSwNP:
- Short course oral steroids (0.5mg/kg 5 - 10 days)
- Consider topical drops (fluticasone propionate 400mcg bd or betamethasone bd/tds or continue intranasal corticosteroid spray)
- Consider doxycycline (100mg od 3 weeks)

For CRSuNP:
- Continue intranasal corticosteroid spray
- Consider long term macrolide antibiotics (most likely to be effective when IgE levels NOT elevated; avoid clarithromycin with statins and in patients with IHD)

**Consider endoscopic sinus surgery after failure of maximum medical therapy above and persistent moderate/severe symptoms**

- CT mandatory before surgery if not performed earlier in care pathway (does not need to be repeated if no intervening surgical intervention)
- When CT score (LM) <4 alternate diagnosis should be considered, and ESS not usually indicated

**Many patients likely to require long-term medical maintenance therapy with saline irrigation and INCS**

- Follow-up after surgery needs to be tailored to individual patient needs in terms of duration and frequency
- Once patients are stabilized post-op, further follow-up/maintenance of treatment can be provided in primary care

## 2. PROCEDURES EXPLORER FOR RHINOSINUSITIS

Users can access further procedure information based on the data available in the quality dashboard to see how individual providers are performing against the indicators. This will enable CCGs to start a conversation with providers who appear to be 'outliers' from the indicators of quality that have been selected.

The Procedures Explorer Tool is available via the [Royal College of Surgeons](https://www.rcs.org.uk) website.
3. QUALITY DASHBOARD FOR RHINOSINUSITIS

The quality dashboard provides an overview of activity commissioned by CCGs from the relevant pathways, and indicators of the quality of care provided by surgical units.

The Quality Dashboard is available via the Royal College of Surgeons website.

4. LEVERS FOR IMPLEMENTATION

4.1 Audit and Peer Review Measures

<table>
<thead>
<tr>
<th>Audit/Peer Review Measure</th>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Care Assessment</td>
<td>Use VAS to assess severity and measure response to treatment</td>
<td>Do not offer investigation or treatment to patients not meeting diagnostic criteria. Do not use plain X-ray for investigation.</td>
</tr>
<tr>
<td>Referral</td>
<td>Do not offer referral before a trial of conservative management, or those in whom medical treatment achieve adequate control of symptoms</td>
<td></td>
</tr>
</tbody>
</table>

4.2 Quality Specification/ CQUIN

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
<th>Data Specification (if required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of stay</td>
<td>Provider demonstrates a mean LOS of x days</td>
<td>Data available from HES</td>
</tr>
<tr>
<td>Day Case Rates</td>
<td>Provider demonstrates &gt;80% day case rate for x procedure</td>
<td>Data available from HES</td>
</tr>
</tbody>
</table>

5. DIRECTORY

5.1 Patient Information for CHRONIC RHINOSINUSITIS

<table>
<thead>
<tr>
<th>Title</th>
<th>Published By</th>
<th>Web Link (if available)</th>
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<tbody>
<tr>
<td>Functional Endoscopic Sinus Surgery (FESS)</td>
<td>ENT-UK</td>
<td><a href="https://entuk.org/ent_patients/nose_conditions/fess">https://entuk.org/ent_patients/nose_conditions/fess</a></td>
</tr>
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</table>
**Sinusitis**

NHS Choices  

**Loss of sense of smell**

Fifth Sense  

### 5.2 Clinician Information for CHRONIC RHINOSINUSITIS

<table>
<thead>
<tr>
<th>Title</th>
<th>Published By</th>
<th>Web Link (if available)</th>
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<tbody>
<tr>
<td>Sinusitis - Clinical Knowledge Summaries</td>
<td>NICE</td>
<td><a href="http://cks.nice.org.uk/sinusitis">http://cks.nice.org.uk/sinusitis</a></td>
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</tbody>
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### 6. BENEFITS AND RISKS OF IMPLEMENTING THIS GUIDE

This section describes the benefits/risks of implementing the guidance. Some examples are given below.

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Benefit</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient outcome</td>
<td>Ensure access to effective treatment</td>
<td></td>
</tr>
<tr>
<td>Patient safety</td>
<td>Reduce chance of missing sinonasal malignancy or complication of CRS</td>
<td></td>
</tr>
<tr>
<td>Patient experience</td>
<td>Improve access to patient information, support groups</td>
<td></td>
</tr>
<tr>
<td>Equity of Access</td>
<td>Improve access to effective treatment</td>
<td></td>
</tr>
</tbody>
</table>
Resource impact | Resource required to provide saline irrigation on prescription
---|---
Reduce unnecessary referral, investigation and intervention

7. FURTHER INFORMATION

7.1 Research Recommendations

- Aetiology of CRS, role of allergy
- Assessment – Better phenotyping of subgroups of CRS, implications for treatment options and outcomes
- Comparative effect of medical versus surgical treatment for both CRSwNp and CRSsNP
- Role of long-term antibiotics in management of both CRSwNP and CRSSNP
- Novel therapies for chronic rhinosinusitis

7.2 Other recommendations

- Improved coding of procedures for endoscopic sinus surgery reflecting developments in surgical technique
- Need for national database to collect epidemiology data, PROMs and operative activity, to further knowledge base and provide individual surgeon outcome data.

7.3 Evidence Base


7. Harvey R, Hannan SA, Badia L et al. *Nasal saline irrigations for the symptoms of chronic rhinosinusitis*. Cochrane Database of systematic reviews. 2007 (3)


12 EPOS – recommends referral after failure of 3 months medical therapy.

13 Smith T, Kern R, Palmer J et al. Medical versus surgery for chronic rhinosinusitis: a prospective, multi-institutional study with 1-year follow-up. Int Forum Allergy Rhinol. 2012. Study shows that 34% patients fail medical management within 3 months of treatment. Disease specific QOL then stagnates or worsens until crossover into surgical treatment. Supports referral after 3 months, as non-responders are unlikely to respond at later stage and will suffer deterioration in symptoms.

14 Hopkins C, Milano Masterclass 2013. Early intervention for Chronic rhinosinusitis. Patients undergoing surgery within 12 months of onset of symptoms that fail to respond to maximum medical therapy, achieve significantly better measured outcomes in terms on improvements in SNOT-22 than those undergoing surgery at a later stage. Health care utilisation is significantly lower in first 2 years following surgery in patients undergoing surgical intervention compared with those having surgery at a later stage.

15 Confirmation of diagnosis by endoscopy or CT imaging is required according to both EPOS and AAO-HNS definitions of CRS, as symptoms alone have a sensitivity of 89% but a specificity of only 12%, PPV of 49% and NPV of 54%.

Therefore, we are unable to recommend escalation of care pathway without either endoscopy or CT, particularly as this would entail prolonged courses of antibiotics in a significant number of patients unlikely to benefit from such treatment, in the face of increasing antibiotic resistance.

Either a Community Specialist or Secondary Care Specialist may perform endoscopic examination.

CT imaging is normally reserved for patients selected for surgical management in order to minimize risk from exposure to ionizing radiation, and therefore not recommended for use in primary care or at this stage of the treatment pathway. However, up to 40% of patients with symptoms of CRS and normal endoscopy have radiological evidence of CRS (Cain RB, Lal)

D. Update on the management of chronic rhinosinusitis. Infection and Drug resistance 2013: 6: 1 – 14), and CT is therefore recommended at a later stage if the diagnosis remains uncertain.


17 Van Zele T, Gevaert Pn Holtappels G et al. Oral Steroids and doxycycline: two different approaches to treat nasal polyps. JACI 2010:125;1069-1076


20 Rowe-Jones J, Medcalf M, Durham S, Richards D, Mackay I. Functional Endoscopic Sinus Surgery: 5 year follow up and results of a prospective, randomised, stratified, double-blind, placebo controlled study of postoperative fluticasone propionate aqueous nasal spray. Rhinology 2005 ;43-1: 2-10,

Evidence identified by Bazian but not incorporated into care pathway;

Krespi YP, Kizhner V. Phototherapy for Chronic rhinosinusitis – n=23 2 treatment arms both show symptomatic benefit, but no control arm, therefore unacceptable risk of bias and needs further evaluation before use can be recommended.

7.4 Guide Development Group for Chronic Rhinosinusitis

A commissioning guide development group was established to review and advise on the content of the commissioning guide. This group met once, with additional interaction taking place via email.

<table>
<thead>
<tr>
<th>Name</th>
<th>Job Title</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
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<td>ENT-UK</td>
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<tr>
<td>McCombe</td>
<td>ENT surgeon</td>
<td></td>
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<td>Honorary Consultant ENT Surgeon,</td>
<td>Norwich Medical School</td>
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<td>Consultant ENT Surgeon,</td>
<td>Frimley Park Hospital</td>
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<td>June Blythe</td>
<td>Independent patient representative</td>
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<td>Mike Thomas</td>
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<td>University College London &amp; Honorary Consultant</td>
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<td></td>
<td>ENT Surgeon, University College Hospital London</td>
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<td>Darryl Veldtman</td>
<td>Independent patient representative</td>
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<tr>
<td>Andrew Swift</td>
<td>Consultant ENT surgeon and Rhinologist</td>
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<tr>
<td>Dr Greg Battle</td>
<td>Executive Medical Director, Integrated Care</td>
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7.5 Funding statement

The development of this commissioning guidance has been funded by the following sources:

- DH Right Care funded the costs of the Guide Development Group, literature searches and contributed towards administrative costs.
- The Royal College of Surgeons of England (RCSEng) and ENT-UK provided staff to support the guideline development.
Appendix 1

**Saline Irrigation recipe**

How to make 1 pint of salt solution

1. **You will need:**
   - salt (sea salt, canning, or pickling salt)
   - baking soda
   - nasal irrigation pot
   - measuring spoon (1 teaspoon, 1/2 tsp)
   - pint container

2. **Mix the solution:**
   - Measure 1 tsp of salt and 1/2 tsp of baking soda into the pint container.
   - Add one pint of cooled boiled water (lukewarm tap water may be safe in some areas)
   - Stir
   - From one-pint container of solution, fill nasal pot