

Case study: Nigel

About this case study

What is included in this case study?

This case study consists of materials to print out for use directly as they are, or for adaptation to suit particular audiences.

There are pages to print out to form hand out notes for participants, broken down into two parts.

Facilitator notes to print out are also included, to guide the leader of a discussion workshop based on the case.

Pages showing the case summary to prompt questions are also included. These are available as powerpoint slides.

Who can use this case study?

The materials are designed for use by a facilitator with a small group of health care professionals, such as practice nurses, hospital nurses working in respiratory and general medicine care, GPs and junior hospital doctors working with patients with asthma (eg those in paediatrics, respiratory medicine, geriatrics and A&E).

The group should be kept small enough to encourage participation in the discussion.

A group of 8-15 may be ideal, though the materials can also be adapted for use with groups of other sizes or with individuals.

Using this case study

This case study is designed to give plenty of opportunity to discuss asthma management and key points from the revised British Guideline on the Management of Asthma (2008).

The two parts of the case study should be handed out to participants progressively, so that the story unfolds and to allow for discussion around all the salient points.

After each part has been read, the facilitator may like to initiate discussion by posing questions. The facilitator notes give guidance on the points to bring out in the ensuing discussion. In addition to the key issues to be covered, other discussion points are suggested, together with practical issues that could be raised.

The case study should give ample opportunity to tailor the discussion to suit the needs and interests of the participants.

It is possible to use only one part of the case, if more appropriate for the participants concerned or if there are time constraints.

Learning outcomes

This case illustrates severe acute asthma in a child, progressing to poor control as a young adult with possible occupational causes of symptoms.

After completing the first part of the case, participants should be able to:

- recognise the signs of severe acute asthma in a child and
- describe appropriate management for such patients.

After completing the second part of the case, participants should be able to:

- identify the factors that can result in an exacerbation in a child
- discuss compliance and self-management
- recognise the potential relevance of occupation in assessing asthma in adults.

Part 1: notes for participants

Background

Nigel's mother said he had "always been chesty" and he has always had a runny nose. As an infant, he had numerous episodes of wheezing with colds. On a number of occasions he was admitted to hospital with wheezing and breathlessness. Before he started school, his parents noted that he would often cough and get more breathless than his siblings when he ran about.

In the last couple of years, since he started school he has missed many weeks of schooling as cold after cold 'went to his chest'. During these episodes, his GP often prescribed a course of antibiotics. He has had a permanent cough which often kept the whole family awake at night.

Schoolboy aged 7 years

At 9.45 am one October morning, Nigel's mother brought him into the surgery because he had had another bad night. He had been wheezy and had difficulty talking. They did not have an appointment and Nigel's mother was very grateful when the receptionist said that that the doctor could see Nigel at the end of surgery, around 11 o'clock. Nigel and his mother sat quietly in the corner of the busy waiting room.

The appointment

After a hectic morning of scheduled appointments – many over-running the allotted time – Nigel and his mother were called in to see the doctor after about an hour and a half. Nigel's mother explained that her son started with a cold a couple of days before, but had become progressively more wheezy. Although he was now less wheezy, Nigel's mother was concerned that he still seemed very short of breath.

On examination, Nigel was pale and could only speak single words when asked a question. His respiratory rate was 45/minute and his chest was virtually silent, with only a few high-pitched rhonchi. He was unable to blow into a peak flow meter due to his coughing. The practice did not have a pulse oximeter so were unable to measure an oxygen saturation. His GP multi-dosed him with Salbutamol through a large volume spacer and arranged for him to have 30mg oral prednisolone immediately. This helped Nigel a little, but within an hour he was wheezy again so the GP then arranged for him to be admitted to the local paediatric unit. At discharge, he was started on prophylactic inhaled corticosteroids.

Part 2: notes for participants

Scout camp

Following the acute admission at the age of 7 years, Nigel attended his local practice nurse asthma clinic where his asthma was kept more or less under control.

However, when he was 14 years old, Nigel suffered another acute attack while at scout camp in Scotland. This required emergency hospital admission and ventilation. Following this life-threatening episode, he was followed up at the local hospital asthma clinic. His asthma improved quickly over the next 2 years such that by the time he left school, aged 16 years, Nigel appeared to have 'grown out' of his breathing problems. He had been discharged from the hospital clinic and was no longer using any preventative treatment.

Another attack

Nigel married quite young, at the age of 19 years, when his girlfriend became pregnant. Now, aged 24 years and with three young children, the marriage is on the rocks. Partly to escape the atmosphere at home, and partly because money is tight, Nigel has been holding down a number of part time jobs, mainly to do with cars. He has also been spending a lot of time with his mates. Nigel turns up at the surgery one evening, having heard that GPs could now give out treatment to help smokers give up – his wheezy chest was becoming embarrassing and he thought the time had come to cut back a bit as he had recently had to start use his blue inhaler again.

Part 1: facilitator's notes

The key questions for discussion are listed below, with points that should emerge during the discussion. A number of other topics that could be discussed, together with practical issues, are also indicated.

This child is experiencing a severe acute exacerbation of asthma, as indicated by the silent chest, respiratory rate over 30/minute and inability to talk. He requires prompt action. (section 6.7, page 61)

How would you manage the immediate problem?

Nigel requires immediate oxygen therapy via a face mask, together with nebulised salbutamol 5mg or terbutaline 10mg with ipratropium 0.25mg. Soluble prednisolone 30-40mg should also be given (or IV hydrocortisone 100mg if oral steroids could not be taken), and hospital admission arranged immediately with a '999' ambulance call. A written assessment and referral details should be sent with Nigel, who should continue to receive repeat β^2 agonists via oxygen driven nebuliser in the ambulance on route to the hospital.

Was Nigel at risk of death from acute asthma while waiting for his consultation?

Delay is the most common preventable factor in asthma deaths. Nigel's mother had not appreciated how ill her son was, and the receptionist did not notice how breathless Nigel was because he was not making a noise from his breathing or talking. Since his mother spoke for him, it was not apparent to the receptionist that Nigel was too breathless to speak, even if training in recognising life-threatening illness had been given. (section 6.7, page 61)

Practical discussion point

How can a practice ensure that seriously ill asthma patients (particularly children) are identified at an early stage by the practice team and that the necessary action is taken?

Ideally, what should happen later in the week?

Hopefully, Nigel will make a good recovery in hospital and will be seen by his GP practice within 7 days of discharge. Nigel and his mother should have been given a written action plan while in hospital, explaining the danger signs and what to do should Nigel have another acute attack. Good liaison with primary care should ensure that an appropriately-trained practice nurse sees Nigel and his mother. The nurse can review therapy, check inhaler technique, and reinforce education and the asthma action plan. Any admission for acute asthma should be taken as an opportunity for education and improvement of self-management. (section 9, pages 82-83)

Key point

- Assess and act promptly in acute asthma – admit patients with any features of a severe or life-threatening severe attack persisting after initial treatment.
- Primary care follow up is required promptly after acute asthma.

Further details on SIGN and BTS websites (www.sign.ac.uk and www.brit-thoracic.org.uk)

Part 2: facilitator's notes

The key questions for discussion are listed below, with points that should emerge during the discussion. A number of other topics that could be discussed, together with practical issues, are also indicated.

What factors could have precipitated the attack at the scout camp?

At the camp, Nigel may have been undertaking strenuous activities in a cold or damp atmosphere. He may have been sleeping on the bottom bunk where he would have been exposed to elevated levels of house dust mite allergens. He may have felt inhibited about taking his inhalers in front of his friends. Being away from home Nigel may not have taken his treatment as prescribed. Depending on the time of the year and his particular triggers, Nigel could have been exposed to high levels of pollen, exacerbating both rhinitis and asthma. (section 6.1, page 51)

The asthma exacerbation also occurred at around the time of transfer from paediatric to adult hospital care. Transferring of care between services and a change in the continuity of care can be potentially disruptive to young adults and their families.

Practical discussion point

Do patients (or indeed health professionals) understand the importance of asthma action plans for other people (e.g. leaders of youth groups acting in loco parents)?

What factors would you wish to address during this consultation with 24-year old Nigel?

It is important to explore possible factors responsible for the renewed symptoms. There could be avoidable precipitating factors – eg exercise, aspirin use, alcohol, allergen exposure or an occupational cause.

It is good practice to ask any patient with asthma about their occupation, which may raise a suspicion of an occupational related cause. Nigel should be asked about patterns of breathlessness and any relationship with his work. It is useful to see if the symptoms are improved when away from work ie holidays/weekends. There are a number of allergens associated with the car industry, and 'two tone' paint spraying is a common cause of occupational asthma. Although the use of 'two tone' spray painting is less common without precautions due to H&S legislation, in some small companies this can still be a problem. (section 7.8, pages 74-76)

A specialist referral is required in cases of breathing problems associated with suspected occupational allergens.

The impact of smoking on health generally, and respiratory health in particular, should be addressed. Nigel should also consider the potential impact on his young children (section 3.3.1, page 28).

Nigel should have a written action plan, outlining the steps to be taken when symptoms increase – the aim is to take action before an exacerbation becomes severe. The therapy currently being taken by Nigel needs to be examined and nebulised. It would be useful before making any change to medications to assess if he is taking his medication as prescribed. Inhaler technique should be checked. Above all, Nigel needs to understand that, after two hospital admissions including an admission where he was ventilated, he is at increased risk of a fatal asthma attack (section 6.1 table 9 and section 9, pages 82-86).

If Nigel is started on an inhaled steroid, compliance issues need to be discussed eg attitudes to inhaler usage, ICS, disruption to his normal life, remembering regular treatment. It would be worth discussing the potential benefits from a combination inhaler. It is possible also that he could be prescribed a regime that resulted in him using a combination treatment both as a preventer and a reliever. The psychological stress of his marriage breakdown and the need for A&E treatment are further obvious risk factors. It should also be noted that every episode of severe asthma represents a failure of previous management.

Practical discussion point

Are practice prescribing records used to flag up under-utilisation of inhaled corticosteroids?

Key points

1. Self-management is effective – offer self-management to all patients with asthma; reinforce with a written asthma action plan that gives patient-specific advice on signs of deteriorating asthma and appropriate actions to take (see Asthma UK website, www.asthma.org.uk).
2. Healthcare professionals must be aware that patients with severe asthma and one or more adverse psychosocial factors are at risk of death. It is very important to follow up a patient who has required ventilation by secondary care.
3. Consider occupational causes in adults presenting with asthma symptoms. Further details on SIGN and BTS websites (www.sign.ac.uk and www.brit-thoracic.org.uk)

Part 1: case summary

- 7 year old boy with history of wheeze with respiratory infections and cough
- Presents with respiratory rate 45/minute, virtually silent chest, few high-pitched rhonchi.

Part 2: case summary

- Acute admission for asthma at age 7 years when he was started on inhaled corticosteroids.
- Asthma controlled until age 14 years, when another emergency admission from a scout camp with life-threatening asthma for which he was ventilated in ICU.
- Patient now aged 24 years with symptoms of asthma. He is smoking and presents to his GP for smoking cessation advice because of his increased respiratory symptoms. Has attended for emergency treatments. Need to include appropriateness of using a spacer device.

Part 1: questions

1. How would you manage the immediate problem?
2. Was Nigel at risk of death from acute asthma while waiting for his consultation?
3. Ideally, what should happen later in the week?

Part 2: questions

1. What factors could have precipitated the attack at the scout camp?
2. What factors would you wish to address during this consultation with 24-year old Nigel?

Part 1: key points

1. Assess and act promptly in acute asthma – admit patients with severe attack persisting after initial treatment or any features of a life threatening or near fatal attack.
2. Primary care follow up required promptly after hospital admission with acute asthma.

Further details on SIGN and BTS websites (www.sign.ac.uk and www.brit-thoracic.org.uk)

Part 2: key points

1. Self-management is effective – offer self-management to all patients with asthma; reinforce with a written asthma action plan that gives patient-specific advice on signs of deteriorating asthma and appropriate actions to take (see Asthma UK website, www.asthma.org.uk)
2. Healthcare professionals must be aware that patients with severe asthma and one or more adverse psychosocial factors are at risk of life-threatening asthma.
3. Consider occupational causes in adults presenting with asthma symptoms.

Further details on SIGN and BTS websites (www.sign.ac.uk and www.brit-thoracic.org.uk)