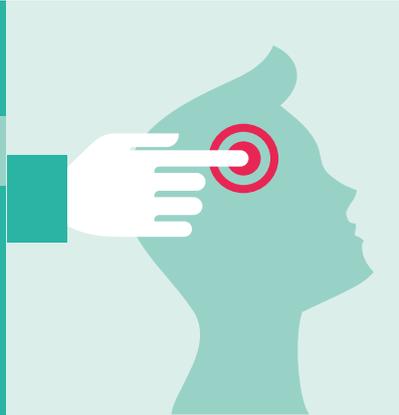
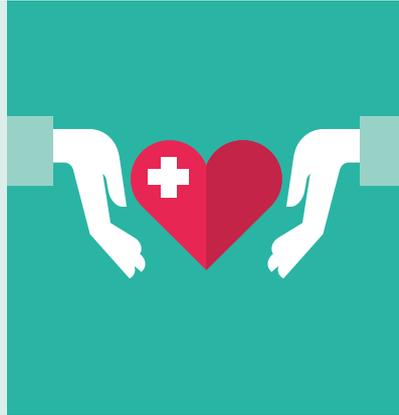


check

Independent learning program for GPs



Unit 516 May 2015

Stages of life: Adolescent/ youth health

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Stages of life: Adolescent/youth health

Unit 516 May 2015

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The five domains of general practice

-  Communication skills and the patient-doctor relationship
-  Applied professional knowledge and skills
-  Population health and the context of general practice
-  Professional and ethical role
-  Organisational and legal dimensions

National indicators show significant improvements in the health and wellbeing of young Australians in the past two decades.¹ In particular, there has been a 50% decrease in the death rate, which is largely attributable to a decline in injury.¹ However, rates of sexually transmissible infections, teenage pregnancy, high-risk use of alcohol, substance use and mental health disorders remain at unacceptably high levels.¹ Many illnesses that affect young people are preventable² and health-related behaviours established during adolescence can have long-term consequences for health later in life. This presents an opportunity to promote and establish healthy practices in adolescence that will have long-term health benefits.³ However, adolescents are under-represented in general practice encounters,³ possibly for reasons including concerns about confidentiality and fear of not being treated with respect.⁴

This edition of *check* focuses on common problems affecting adolescents and considers approaches for effective engagement and management.

LEARNING OUTCOMES

At the end of this activity, participants will be able to:

- describe screening and management of an adolescent suspected of substance abuse
- outline options for the management of gender dysphoria in an adolescent
- discuss the assessment and treatment of irritable bowel syndrome in an adolescent
- list the forms of contraception available for teenagers and discuss the management of teenage pregnancy
- explain approaches to sexual health assessments and treatment of sexually transmissible infections in adolescents.

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activities, drugs, sexuality and suicide/depression) assessment tool, include screening for drug and alcohol use.^{3,5} Other alcohol and drug screening questionnaires that can be used for adolescents include CRAFFT (car, relax, alone, forget, friends, trouble), RAFFT (relax, alone, friends, family, trouble), CAGE (cut down, annoyed, guilty and eye-opener), TWEAK (tolerance, worried, eye-opener, amnesia, cut down), SSI-AOD (simple screening instrument for alcohol and other drugs) and DAP-4 (drug and alcohol problem quickscreen).⁴ It has been reported that adolescents are more likely to answer truthfully to a paper-based questionnaire, or one completed on a computer, than face-to-face interview.⁶

CRAFFT

The best-studied screening tool for adolescents aged 14 years and older is CRAFFT, which is a mnemonic for six questions that are asked over a lifetime (refer to *Resources*). Scores obtained using CRAFFT have been correlated with levels of drug and alcohol use in adolescent populations.⁴

Scoring for CRAFFT

Each 'yes' answer is scored as 1 and 'no' as 0. A positive answer to a CRAFFT question requires the GP to consider engaging the parent in directly addressing the behaviour.

The adolescents are classified into:⁷

- CRAFFT-negative (summed scores of 0–1)
- high risk (summed scores of ≥ 2), suggesting that the adolescent requires further questioning.

Onset of drug use before the age of 15 years (early-onset drug use) is of particular concern. A CRAFFT score of ≥ 2 in younger adolescents (<15 years), in addition to daily drug use, and blackouts related to alcohol use are markers for regular review, intervention and referral to a specialist.⁵

If established, Jenny's cannabis use can also be addressed with the Severity of Dependence Scale (SDS).⁸ This free, self-report questionnaire to determine cannabis use in adolescents and adults is available from the National Cannabis Prevention and Information Centre (NCPIC) website.⁸

ANSWER 3

Although a request for a UDS of adolescents by parents is not uncommon, the usefulness of a UDS in this setting is questionable. There are problematic UDS false-positive findings and false negative findings.⁹ Further, arranging a UDS in the absence of a therapeutic relationship with the young person with possible drug problems is difficult for future treatment, regardless of the test findings. There are also ethical issues relating to the use of UDS with competent adolescents.

ANSWER 4

Principles in treating Jenny's substance use are:

- engagement
- assessment of the severity/extent of the problem
- psycho-education

- engagement of Jenny's parents
- consideration of referral to other specialist agencies/services.

A paternalistic approach with the expectation of abstinence, in which the GP instructs Jenny to make changes, is unlikely to be helpful and is not recommended.¹⁰ The Stages of Change model and motivational interviewing are both promising tools in assisting with behaviour change for adolescent alcohol and drug use.^{5,10–12}

The Stages of Change model

Understanding where Jenny is on the Stages of Change model is very helpful in offering Jenny advice and support. The stages of change described are from precontemplation (unready to stop), contemplation (thinking about it), preparation–action (ready for change, goal setting, plans) and maintenance (preventing relapse). Relapse is considered a learning stage in which the person re-enters the cycle, usually at the precontemplation or contemplation stages. Jenny may need to go through many cycles before sustaining abstinence.

Motivational interviewing

This approach has been used to address adolescent substance use.^{5,12} Motivational interviewing is a focused and goal-oriented counselling approach that addresses the person's conscious and unconscious ambivalence about stopping their drug use. During the motivational interviewing process, patients are not instructed on what to do but are assisted in developing their own reasons to stop their drug use. The GP facilitates this by assisting them in strengthening this resolve. The motivational interviewing approach involves:

- open-ended questioning
- use of positive affirmations
- use of reflective listening and providing summary statements.

Even one or two sessions can have a positive impact on the adolescent.^{12,13}

ANSWER 5

Psycho-education is an essential component of the GP's role. In the large US national epidemiological survey (2005–2008) on drug use and health, 37% of adolescents had used drugs or alcohol, and nearly 8% met the criteria for a substance related disorder.¹⁴ How adolescents cope with stress is likely to influence how they respond to stress as adults. Drug use in early age has been consistently found to relate to a higher risk of developing substance use disorders.¹⁵ Adolescents are more likely than children or adults to engage in risk-taking behaviour, including illicit drug use and abuse. The NCPIC website is an excellent resource for patients, parents, schools and professionals (see *Resources*).

The Screening, Brief Intervention, and Referral and Treatment (SBIRT) is an often-cited approach, which has gained currency in the US as the standard for detecting and addressing teenage alcohol and drug use in primary care.³ The American Academy of Pediatrics and NIAAA recommend the use of SBIRT in routine care. SBIRT is an algorithmic approach that incorporates the CRAFFT

screening tool and then assigns a risk based on the CRAFFT score and other risk factors including age of the adolescent, number and frequency of hospital visits, pattern of drug use. There is, however, mixed evidence for the effectiveness of SBIRT in adolescent alcohol abuse.¹⁶

Depending on where Jenny is on the spectrum of drug use, a referral to a specialist drug and alcohol counsellor needs to be considered. Convincing Jenny of the need for the specialist referral would form part of the GP's motivational interviewing. Treatment options include outpatient treatment, individual counselling, cognitive behaviour therapy (CBT), family therapy, group counselling or inpatient treatment.

There may be a role for medication in adolescents with drug dependence, although this might be best managed in specialist settings. N-acetylcysteine has been shown to assist in reducing cannabis use.¹⁷ Another medication that can have a role in the treatment of drug dependence in adolescents are nicotine replacement (transdermal patches and gum) for smokers.¹⁸ Naltrexone and acamprosate have been used for adult alcohol abuse, although the role of these medications in adolescents is unclear.¹⁸ Methadone and buprenorphine have been found to be helpful in adolescents with heroin use, but may lead to relapse in the medication tapering phase.¹⁹

ANSWER 6

Drug use across the spectrum is associated with mental health problems.^{15,20} The teenage brain is very susceptible to the toxic effects of illicit substances. Anxiety disorders, depression, conduct disorder, schizophrenia, bipolar affective disorder, anti-social and borderline personality disorders have been associated with drug abuse. Consider using the Screen for Child Anxiety Related Disorders (SCARED), which is available from University of Pittsburgh²¹ for screening adolescent anxiety, and the Mood and Feelings Questionnaire (MFQ) available from Duke University²² for screening adolescent depression. The co-occurrence of drug use and mental health problems adds complexity to the clinical picture and requires separate referrals for both mental health and drug and alcohol treatment.

RESOURCES FOR PATIENTS AND DOCTORS

- National Cannabis Prevention and Information Centre, <https://ncpic.org.au>

RESOURCES FOR DOCTORS

- The Center for Adolescent Substance Abuse Research (CeASAR) website provides the CRAFFT screening tool, www.ceasar-boston.org/CRAFFT

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CASE 2 ANSWERS

ANSWER 1

It is vital for the initial consultation and for providing ongoing care that the GP should begin by establishing the individual's preferred name and gender label.¹ For example, Miss Stephanie Jones may prefer to be called Mr Steve Jones and prefer the male pronoun rather than the female. These simple and initial questions will establish understanding and trust in the ongoing therapeutic relationship.

An important part of the history is determining the duration of symptoms, as a diagnosis of gender dysphoria requires that symptoms have been present for at least 6 months.² However, people often present much later, for various reasons. It is important to assess the degree of dysphoria, as this will determine short-term risks to the individual. Finally, it is important to discuss their short- and long-term goals:³

- Are they currently living in their preferred gender role?
- Are they planning on making changes?
- Have they changed their name or sex on legal documents?
- Do they want hormones?
- Do they want sexual reassignment surgery?

ANSWER 2

Gender dysphoria is the term used to describe people whose gender at birth is different from the gender they identify as being, and which must cause significant distress to the individual.² The *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition (DSM-5),² states that the difference between the 'experienced/expressed' and 'assigned' gender must have been present for at least 6 months and be manifested as two or more of the following criteria, for a diagnosis of gender dysphoria in adolescents/adults (there are separate criteria for children):

- a clear difference between one's perceived gender and their physical sex characteristics
- an intense need to do away with their physical sex features (or, in the case of young teenagers, to avert the maturity of the likely secondary features)
- an intense desire to have the physical sex features of the other gender
- a deep desire to transform into the other gender
- a profound need for others to identify them as the other gender
- a powerful assurance of having the characteristic feelings and responses of the other gender.

It is also important to specify if the individual has a disorder of sex development (ie such as congenital adrenal hyperplasia) and if they post-transition (whether living permanently in the role, accessing hormones, or surgically reassigned).

ANSWER 3

Individuals who experience gender dysphoria are at higher risk of mental illness and suicide, compared with the general population.⁴

A HEADSS (home and environment, education and employment, activities, drugs, sexuality and suicide/depression) assessment should be performed to help identify any risks as part of an initial consultation with anyone experiencing gender dysphoria.⁵ Although the HEADSS assessment has not been validated in gender dysphoria, it does serve to cover important psychosocial aspects of a consultation in a group of individuals who often present during adolescence and in their twenties.

Substance misuse data in Australia's transgender population is scarce. The most common substance misused was reported to be anabolic steroids and was predominantly related to a desire to transition to a male role rather than the classical definition of abuse.⁶

In our experience it is common for younger patients to report little-to-no history of sexual activity. However, other individuals may have risks for sexually transmissible infections (STIs), particularly those who may engage in receptive anal sex or sex work.⁴ A few simple questions avoid the possibly intrusive experience of blanket testing.

People with gender dysphoria are often uncomfortable with their bodies, particularly their secondary sexual characteristics.⁷ They may avoid seeking healthcare to avoid a genital and/or breast examination.³ A genital examination is not part of the routine assessment unless there is suggestion or evidence of intersex or genital mutilation.⁷ However, vital signs are important to provide a baseline for future hormone therapy if this is something they desire.

ANSWER 4

Gender nonconformity is different from gender dysphoria, as the former does not cause distress to the individual. In the DSM-5, the term gender dysphoria has now replaced gender identity disorder to remove the associated stigma.²

Gender dysphoria may occur uncommonly as part of a mental health disorder and should be differentiated from people who are transgender, if clinically suspected by an experienced mental health professional. A diagnosis of gender dysphoria can be made by a GP with experience in mental health but should be confirmed by any mental health professional with experience in the area of gender dysphoria.^{3,7} Unfortunately, such professionals may not be easily accessible in many parts of Australia. Many of the professionals who are experienced with, or have an interest in gender issues are best found by contacting the Australian and New Zealand Professional Association for Transgender Health (see *Resources for doctors*), support groups, or even with an internet search.

The following differential diagnoses could be considered.⁸

Transvestic disorder involves cross-dressing as a sexual urge or fantasy. Individuals do not consider themselves the opposite gender and do not want surgery or hormones. Outside of these times, their dress and behaviour are congruent with their natal sex and gender.

Body dysmorphic disorder is a distressing or impairing preoccupation with an imagined or slight defect in appearance. Individuals with this condition do not consider themselves as being of a different gender, but find parts of the body (possibly the genitalia or breasts) to be abnormal and want them removed.

A patient with **psychosis** may report a delusion telling them they are a different gender. However, this is uncommon in practice and the individual may have a history of a psychotic disorder.

Borderline personality disorder is defined as disturbance in self-identity and this may include sexual orientation and/or gender dysphoria. If a patient shows symptoms of borderline personality disorder, or is known to have the disorder, then a mental health professional should be involved to aid in assessment.

Individuals with **Asperger's syndrome** are prone to obsessive preoccupations that may include gender confusion. If Asperger's syndrome is previously diagnosed or suspected, then review by an appropriate mental health professional may be warranted to differentiate true gender dysphoria from a manifestation of Asperger's syndrome.

Rarely, individuals with **dissociative identity disorder (DID)** may experience a different sex as one of their identities. However, the patient is likely to have a history of DID and consultation with a mental health professional will help elucidate whether gender dysphoria is distinct from DID in this setting.

ANSWER 5

Laboratory testing is not required to make a diagnosis of gender dysphoria. Testing for chromosomal abnormalities or endocrine disorders should only be considered if there is clinical suspicion (eg congenital adrenal hyperplasia, intersex conditions such as ambiguous genitalia, or androgen insensitivity syndrome), but is not routine for gender dysphoria.⁷

A risk assessment and baseline tests should be performed for individuals who wish to consider hormone therapy, as this therapy can exacerbate some medical conditions and may be contraindicated in others. For example, testosterone is contraindicated in pregnancy, uncontrolled polycythaemia with a haematocrit >55%, unstable coronary artery disease, and possibly oestrogen responsive breast cancer.⁷ Therefore, testing and consultation with experienced specialists such as an endocrinologist, cardiologist, or obstetrician/gynaecologist would be advisable before referral for commencement of hormone therapy, to check for any possible contraindications to such treatment.

For FTM individuals considering testosterone therapy, a suggested series of baseline tests, prior to initiation of therapy, should include:⁹

- FBE for polycythaemia
- LFTs for baseline prior to testosterone
- fasting lipids (as testosterone may increase lipids)
- fasting blood sugar (if there is family history of diabetes)
- HbA1c (if diabetic)
- ECG, as testosterone may increase the risk of cardiovascular disease.

ANSWER 6

Some or all of the following health professionals and services may be involved with the GP in holistic management of a patient with gender

dysphoria. Requirements are individualised, depending on locality, GP experience and patient preference.

- **Experienced mental health professionals (psychologist or psychiatrist)** may provide help when the diagnosis is not certain, assess comorbid depression/anxiety, and provide ongoing care for those during the transition period if required.
- **Sexual health clinic or gender clinics** often have experience dealing with transgender people as a 'one-stop-shop' with doctors, counsellors and social support. However, not all will accept transgender patients for this sort of care so it is wise to check.
- **Endocrinologists** are helpful when prescribing hormones if the GP is unfamiliar or if the patient is complex or has multiple medical comorbidities.
- **Social workers** are invaluable for assistance with the paperwork involved with changing sex on documents, and accessing government services.

Support groups are a useful source of information, guidance and help with changing documents, accessing appropriate services and for family support. There are many support groups, especially online, for people who are transgender and/or suffering from gender dysphoria (refer to *Resources for patients*). There are a number of evidence-based resources for GPs interested in transgender health (refer to *Resources for doctors*). For primary care protocols, the Center of Excellence for Transgender Health (US) provides clear and concise healthcare intended for GPs (transhealth.ecsf.edu). The Endocrine Society (US) has published clinical guidelines for hormone management and follow-up advice entitled 'Endocrine treatment of transsexuals'. Finally, the most comprehensive guidelines are provided by the World Professional Association for Transgender Health (WPATH), which covers diagnosis, psychosocial assessment, medical and surgical care, and is available online.

ANSWER 7

Medication review

Testosterone is safe in the long term but levels need to be monitored to avoid overdosing.¹⁰ To monitor hormone levels and monitor for adverse effects, it is recommended that regular clinical and laboratory testing, including monitoring hormone levels, be performed every 3 months for the first year and then once or twice yearly.⁹ Routine laboratory testing for FTM individuals, including serum testosterone, haemoglobin, and LFTs, should occur every 3 months for the first year and then every 6 months if stable after this time. Lipids and fasting blood sugar (if there is a family history of diabetes) or HbA1c (if diabetic) testing should occur yearly.⁹ Hormone levels for FTMs should be kept within the normal physiological range for their desired gender (12–24 nmol/L testosterone and <200 pmol/L oestradiol).⁹ Supratherapeutic levels lead to an increased risk of adverse effects and provide no beneficial effects.

Benefits

Testosterone is administered to induce male characteristics and this should be enquired about during a follow-up consultation.

For example, growth of facial hair, increased muscle mass, fat redistribution and deepening of the voice should begin within 6 months of initiating treatment. However, these processes are highly variable and may take longer.⁹

Adverse effects

The adverse effects most significantly associated with testosterone therapy include clinical and laboratory changes.

Laboratory changes may include polycythaemia, hyperlipidaemia and elevated liver enzymes, which should be monitored and addressed, if required, in consultation with a specialist with experience in the field.⁹ Clinical changes may include acne, clitoromegaly, alopecia and irritability. These should also be addressed if they become burdensome to the patient.⁴

Mental health

Transitioning can be a difficult time for transgender individuals with gender dysphoria and although they may be consulting a mental health professional, a GP can also monitor mental health and assist where required.³

Ongoing preventive care

It is important to note that transgender individuals still need to undergo general practice preventive health measures applicable to their sex at birth. For example, FTM individuals should continue to have Pap smears and breast screening (if mastectomy has not been performed) as per current Australian guidelines.⁹

CONCLUSION

Ash returns to see you 6 months after initiating hormone therapy, as part of his regular 3-monthly review. He is much happier in himself and enjoys his deeper voice. He is starting to develop facial hair, increased muscle bulk and mild acne vulgaris. He has changed his sex on some of his documents such as his driver's licence and Medicare card. He has some ongoing symptoms of depression but these are improving with the help of his regular counselling sessions with an experienced psychologist. He also has a new girlfriend, with whom he enjoys spending time, and has found work in a local café, where he is accepted as a male.

His blood pressure is 125/70 mm/Hg and his BMI has reduced to 24 kg/m². His testosterone level is 15 nmol/L, which is physiologically appropriate. Ash is reminded that a Pap smear is still important in the future and that regular follow-up with you is an important part of the holistic care. Ash's family are still not fully supportive of his decision to start hormone therapy but are currently seeking counselling for help. Ash thanks you for all your help and says that he now can see a happy and productive future for himself – something that he had thought impossible just a few months earlier.

RESOURCES FOR PATIENTS

National and state services and support groups include:

- Ausgender, www.ausgender.com.au
- A Gender Agenda, <http://genderrights.org.au>

- The Gender Centre Inc, www.gendercentre.org.au
- Trans Health Australia, www.transhealthaustralia.org
- FTM Australia, www.ftmaustralia.org
- Genderqueer Australia, <http://www.genderqueer.org.au>
- The Royal Children's Hospital's Gender Identity Service, <http://ww2.rch.org.au/outpatient/directory/index.cfm?fuseaction=home.full&id=127>
- Prahan Market Clinic, www.prahanmarketclinic.com
- Northside Clinic, <http://northsideclinic.net.au/trans-health-2>
- Transgender Victoria, www.transgendervictoria.com
- Seahorse Victoria, <http://seahorsevic.com.au/main>
- Butch Femme Trans Melbourne, www.genderqueer.org.au/vicbutchfemmetrans
- Rainbow Network Victoria, www.rainbownetwork.com.au
- Taylor Square Private Clinic, www.tspsc.com.au
- Twenty10, www.twenty10.org.au
- Goldcoast Sexual Health, www.health.qld.gov.au/sexhealth
- Transbridge – Townsville, www.qgroups.com.au/listing/transbridge-support-townsville
- Sexual Health Service Tasmania, www.dhhs.tas.gov.au/sexualhealth/sexual_health_service_tasmania
- Working it out, www.workingitout.org.au
- Canberra Sexual Health Service, www.health.act.gov.au/our-services/sexual-health
- ATSAQ (Australian Transgender Support Associations of Queensland), www.atsaq.com
- Brisbane Gender Clinic, <http://brisbanegenderclinic.org.au>
- Cairns Sexual Health Service, www.health.qld.gov.au/sexhealth/help/cairns.asp
- South Australia Gender Dysphoria Clinic, www.anzpath.org/about/service-providers/south-australia

RESOURCES FOR DOCTORS

- BMJ Best Practice website provides guidelines for diagnosis, treatment and follow-up; <http://bestpractice.bmj.com/best-practice/monograph/992/treatment/details.html>
- Center of Excellence for Transgender Health (US), transhealth.ecsf.edu.
- The Endocrine Society (US). Endocrine treatment of transsexuals, <http://press.endocrine.org/doi/pdf/10.1210/jc.2009-0345>
- Standards of Care version 7, www.wpath.org/site_page.cfm?pk_association_webpage_menu=1351

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CASE 3

DAN HAS ABDOMINAL PROBLEMS

Dan, aged 18 years, is a high-achieving university student in a large country town. He comes to see you for his abdominal discomfort and diarrhoea. He was diagnosed with Crohn’s disease 2 months ago.

Dan says he feels quite lethargic and cannot get much work done because of his frequent trips to the toilet, spending up to 1 hour there per day because of frequent bowel motions. He has tried to ‘sit it out’ for almost 2 weeks now.

You see that he recently presented to the local emergency department with similar symptoms, which led to an admission of 3 days duration. The follow-up appointment with the gastroenterologist resulted in the diagnosis of Crohn’s disease on the basis of colonoscopy findings.

QUESTION 1 

What further information would you enquire about? What physical examination would you perform?

FURTHER INFORMATION

On further questioning, you find out that Dan frequently has blood and mucus in his otherwise loose bowel motions. He finds it hard to quantify amounts, but has had 8–12 motions a day. He is able to keep up his fluid intake, but has not been eating as much lately. He tried loperamide for the diarrhoea but it had little effect. He describes abdominal cramps associated with bowel motions, but no nausea or vomiting. His specialist started him on a dose of prednisolone, 50 mg daily, and 5-aminosalicylic acid therapy 4 weeks ago. The dose of prednisolone has been gradually reduced and he is currently taking 12.5 mg of prednisolone daily. His symptoms started to progress when he dropped below 25 mg. His weight has dropped by approximately 5 kg over the past 3 months. He is unsure of the foods he can eat. He is concerned that whatever he eats might make his Crohn’s worse. He tries to be brave but has not really understood what Crohn’s disease is.

His physical examination reveals a tired-looking young man with a non-distended, soft abdomen, no clear mass identified but increased bowel sounds. His vital signs are within normal limits:

- temperature 36.5°C
- heart rate 70 beats per minute, regular
- blood pressure 120/80 mmHg
- respiration rate 16 breaths per minute
- oxygen saturation 100% room air
- blood sugar level 4.5 mmol/L
- haemoglobin 140 g/L
- urine dipstick test is normal.

Dan declines a digital rectal examination, as it feels ‘too sore’. Visual inspection reveals a mildly erythematous and inflamed anal region.

QUESTION 2 

What is your differential diagnosis for Dan’s condition? What tests will you order?

FURTHER INFORMATION

Dan is keen to accept any help as he is quite fed up with being so lethargic and spending so much time in the toilet.

QUESTION 3 

What will you do as an immediate management plan for Dan?

CASE 3 ANSWERS

ANSWER 1

It is important to ask Dan to describe what occurs when he has diarrhoea. It is useful to enquire about the presence of blood or mucus in the stool, indicating a possible flare-up of his Crohn's disease. Frequency and duration of symptoms are also important aspects of the presenting complaint. History items of particular interest are associated symptoms such as nausea or vomiting, abdominal pain or systemic symptoms such as fatigue, fever and weight loss. Extra-intestinal manifestation of Crohn's disease include mainly joints, eyes and skin, but can have renal and lung manifestations as well.¹

The usual history items include:

- past medical history (in particular tuberculosis)
- past surgical history
- family history (inflammatory bowel disease [IBD], coeliac disease, colorectal cancer)
- allergies (including food intolerances)
- medications
- vaccination history
- social history (including sexual and travel history, and smoking).

In addition, it is good to focus on the impact of the condition and disease on Dan's life, and his understanding of the disease.

As per the Australian IBD guidelines², a physical examination should include the following:

- review of general wellbeing and vital signs:
 - weight and body mass index (BMI)
 - heart rate, blood pressure
 - body temperature
 - signs of anaemia and fluid depletion
- abdominal region:
 - tenderness
 - distention
 - palpable masses
- perianal region
 - tags, fissures, fistulae, abscess
 - digital rectal examination
- oral inspection
- inspection of eyes, skin and joints.

ANSWER 2

Dan is particularly at risk of developing infections because he is on immunosuppressive medication. He had a recent hospital admission. His condition is most probably a combination of an ongoing disease process (inflammation/flare-up) in addition to an infective component such as *Clostridium difficile*. It would be prudent to order some baseline tests such as a full blood evaluation (FBE), electrolytes, liver

function tests (LFTs), renal function tests, inflammatory markers and stool samples, but these should not delay necessary treatment.² In the Australian IBD guidelines,² GPs are encouraged to call for advice from a local gastroenterologist if they are uncertain about which tests are necessary before referral. *C. difficile* is more prevalent in patients with IBD so treatment of the disease with immunosuppression without addressing bacterial pathogens can be extremely dangerous. This could lead to a greater risk for emergency colectomy.²

ANSWER 3

The Australian IBD guidelines² suggest that the aim of any tests done for patients who are unwell should be to define disease activity and severity. The Crohn's Disease Activity Index (CDAI)³ can be used to estimate the clinical severity of disease.

The Australian IBD guidelines² suggest the following definitions:

Disease activity

- mild: CDAI 150–220
- moderate: CDAI 220–450
- severe: CDAI >450

Remission

- CDAI <150 for at least a year

Relapse

- a flare-up of symptoms in a patient with established Crohn's disease who is in clinical remission

Recurrence

- reappearance of lesions after surgical resection.

You can calculate Dan's score on the CDAI (*Table 1*). The score of 259 indicates moderate disease. In this case, hospital admission is advisable. An appropriate referral to hospital care should not be delayed while waiting for test results.² You can tell Dan that the main goal is to treat the acute disease, reduce inflammation, minimise side effects, eliminate symptoms and improve his overall wellbeing. Nutritional deficiencies will need to be corrected as well.²

Please refer to the *Therapeutic Guidelines* for currently accepted medical treatment approaches.⁴

Table 1. Adult Crohn's disease activity index ³		
	Factor	Subtotal
Number of liquid or soft stools per week = 12 x 7	2	168
Abdominal pain rated from 0–3 on severity = 3	5	5
General well-being, from 0–4 for seven days = 3	7	21
Presence of complications = 0	20	0
Taking loperamide or similar for diarrhoea = 1	30	30
Presence of an abdominal mass: 2 (none = 0; possible = 2; yes = 5)	10	20
Haematocrit (<0.47 in men; <0.42 in women)	6	0
Weight: deviation from standard weight:	100 X (1 – current/standard weight)	5
Total CDAI score: 259		

Generally speaking, when disease activity is severe or extensive, or the patient is not well enough to require IV drug therapy, hospital admission is advisable.^{2,5} The CDAI can assist in quantifying severity but is not a measure of inflammation.^{2,3}

ANSWER 4

This question provides an opportunity to discuss the classification and natural history of Crohn's disease, exacerbation and periods of remission, and development of potential complications. It is also an appropriate time to reinforce the treatment goal of inducing and maintaining remission, and provide relevant information about prognosis.⁶

Classification of Crohn's^{7,8}

Crohn's disease activity can be classified either as mild, moderate or severe, on the basis of the CDAI score (refer to *Answer 3*). This score is a measure of clinical severity; it does not correlate with inflammation activity. A patient is in 'remission' when the CDAI score is less than 150 CDAI for 12 months. A relapse is a flare of symptoms in a patient who was in clinical remission. A relapse should be confirmed by investigation results (imaging, lab or endoscopy results). A recurrence is defined as reappearance of lesions after surgical resection.²

Initially, the Vienna classification was used to characterise the clinical pattern of the disease.⁷ The Montreal modification of this classification now divides Crohn's disease into three principal patterns, which are somewhat sequential in disease progression:⁷

1. primarily inflammatory
2. primarily stenotic or obstructing
3. primarily penetrating or fistulising.

The Montreal is a subclassification of Crohn's disease using predominantly phenotypic elements; its reproducibility for an indication of disease activity is still being studied.^{9,10}

Complications and medical emergencies

The inflammatory process can affect any area of the gastrointestinal tract from mouth to anus and can involve all or some of the associated layers. Complications specific to Crohn's disease include abscesses, fistulae, fissures and strictures. Pancolitis is a medical emergency requiring hospital admission and sometimes surgery. Extra-intestinal manifestations of Crohn's disease include mainly joints, eyes and skin, but can have renal and lung manifestations as well.^{7,8}

Patient-specific information is available from Crohn's and Colitis Australia.¹¹

Surgery

It is good to explain to Dan that surgery is generally only considered when medical therapy has failed to control symptoms. There is a role for surgery when mechanical complications, such as stricture, obstruction, perforation, abscess or bleeding have occurred; however, a stoma ('the bag') is rarely needed. Upfront, early resection can also be a reasonable option in patients with isolated short-segment ileal Crohn's disease.² The National Institute for Health and Care Excellence (NICE) guidelines⁶ state that 50–80% of people with Crohn's disease will eventually need surgery for strictures that cause symptoms of obstruction, and other complications such as fistula formation, perforation or failure of medical therapy.⁶

Prognosis and prognostic factors

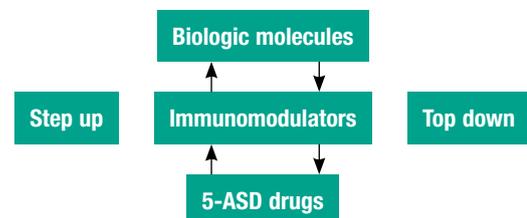
Without treatment, approximately 3 in 20 people with Crohn's disease have frequent and/or severe flare-ups. A few people would have just one or two flare-ups in their lives, but for most of their lives have no symptoms. Most people fall somewhere in between, with occasional flare-ups and long spells without symptoms.¹¹ A systematic review and meta-analysis concluded that age at diagnosis, perianal disease, initial use of steroids and localisation of the disease seem to be independent prognostic factors of disabling disease.¹²

ANSWER 5

Outline to Dan the natural history of Crohn's, and the treatment options and associated side effects, focusing on the class of 'biologics'. Acknowledging Dan's concerns, it would be good to provide an overview of management and common side effects.⁶ A 'top-down treatment approach' has been described by Morrison et al¹³ (*Figure 1*). However, treatment is also based on severity of the disease.⁴

Specialist-prescribed biologic treatment options covered by the Pharmaceutical Benefits Scheme (PBS) are infliximab and adalimumab. These agents are monoclonal antibodies against tumour necrosis factor alpha (TNF α) and have a 60–70% response rate for refractory disease.⁴ Important side effects include an increased risk of infection or reactivation of tuberculosis or hepatitis, and worsening of cardiac failure. Rare but serious side effects include lymphoma, demyelinating syndromes and hepatotoxicity.⁴ It is worth noting that most serious infectious complications in patients with IBD who were on an anti-TNF α agent occurred early in treatment, and most cases were associated with steroid co-therapy.²

Figure 1. Top-down versus step-up strategies in IBD management



What the 'top' of the top down approach should be is still under debate but usually implies use of biological molecules from the outset. This means starting biologics on first presentation in an attempt to change the history of the disease and ensure healing. It is not currently in widespread practice and most patients are managed by starting at the bottom of the treatment control and/or evidence if active disease. The main use of top down is in the first presentation of acute severe disease where biologic therapy can be used as a 'bridge' to maintenance therapy (usually an immunomodulator).

Rapid escalation of therapy to gain effective disease control should be the strategy from the point of diagnosis.

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ANSWER 6

An initial assessment should include sources of potential infection (sepsis), baseline LFTs, tuberculosis and human immunodeficiency virus (HIV) screens and a risk assessment for complications and provision of appropriate preventive measures such as vaccinations. The Therapeutic Guidelines are shown in *Table 2*.⁴

Table 2. Recommendations for screening and monitoring patients commencing anti-tumour necrosis factor therapies*

Screening assessments before commencing anti-tumour necrosis factor (anti-TNF) therapy

- clinical history and examination to exclude current sepsis
- exclusion of contraindications (eg demyelination, cardiac failure, malignancy)
- clinical assessment of patient demographics and past exposure to, or risk factors for, particular infections (eg TB, HBV, HIV, VZV, HPV)
- chest X-ray, TB-specific interferon-gamma release assay or tuberculin skin test, HBsAg and anti-HBc
- prophylaxis/treatment should be offered to patients testing positive for TB or HBV
- assessment of vaccination status and vaccination where required, including for HBV, HPV, influenza,
- *Streptococcus pneumoniae* and VZV [NB1] [NB2]
- Papanicolaou (Pap) smears for women

Monitoring during anti-TNF therapy

- clinical review every 3 months to assess efficacy of therapy and any adverse effects, especially sepsis
- ongoing preventive health programs (eg Pap smears for women)

anti-HBc = antibodies to the HBc (core) antigen; HBsAg = hepatitis B s (surface) antigen; HBV = hepatitis B virus; HPV = human papillomavirus; TB = tuberculosis; VZV = varicella-zoster virus

NB1: Although suggested before anti-TNF therapy, proactive vaccination of patients should be considered before any immunosuppressive therapies, including thiopurine immunomodulatory drugs, methotrexate and corticosteroids.

NB2: VZV vaccine is a live virus and cannot be given to patients already taking immunomodulatory drugs.

Other live vaccines include yellow fever, measles/mumps/rubella and Bacille Calmette-Guérin vaccine for TB (BCG)

Reproduced with permission from Gastrointestinal Expert Group. Recommendations for screening and monitoring patients commencing anti-tumour necrosis factor therapies (Table 6.2) [revised 2011 Feb]. In: eTG complete [electronic]. Melbourne: Therapeutic Guidelines Limited; 2014 Nov.

*The content for the gastrointestinal guidelines is being revised and the updated guidelines will be released in March 2016.

ANSWER 7

Give Dan advice on:

- dietary intake to avoid nutritional deficiencies
- avoiding triggers such as smoking
- the effects of fats and bile salts, lactose and enzyme activity, gluten and low-fibre diets, short- and long-term implications, malabsorption of elements such as iron, zinc, magnesium, vitamin B12, calcium loss secondary to treatment and also vitamin D deficiency states
- prebiotics, probiotics, supplements and herbal medication²
- bone health – some of the risk factors for low bone mass in this setting are chronic inflammation, corticosteroid therapy, extensive small bowel disease or resection, age, smoking and low physical activity.²

Discuss preventive measures, such as vaccination, including influenza vaccination, lifestyle measures, and physical and mental wellbeing strategies. There is a good question and answer section on the Crohn's and Colitis Australia website covering these topics to some extent.¹¹

Outline the implications on occupational and personal lifestyle (intimacy, family planning, etc) Also outline the principles of Crohn's disease classification and associated prognosis, referring to the natural history of Crohn's, flare-ups, remission and goals of treatment.

Toilet access can be a major concern regardless of where one is – technology may offer some assistance with finding toilets through 'toilet map apps'. Travel can be challenging, particularly when going to 'exotic' countries where yellow fever vaccination is required. Patients on immunosuppressive therapy cannot receive the yellow fever vaccination unless they can stop medication for at least 4 months.²

ANSWER 8

GPs play a major role in the overall management of IBD, from early diagnosis, supporting patients with psychological comorbidities, assisting with smoking cessation and managing intercurrent issues such as maintenance therapy, monitoring and adherence, sexuality, fertility, family planning and pregnancy, iron deficiency and anaemia.²

Colorectal cancer surveillance after initial colonoscopy evaluation should be offered based on risk profile:¹⁴

- Low risk: offer colonoscopy with chromoscopy at 5 years
- Intermediate risk: offer colonoscopy with chromoscopy at 3 years
- High risk: offer colonoscopy with chromoscopy at 1 year.

Osteoporosis prevention is also important. Australian dietary recommendations include intake of calcium 1000 mg per day and maintenance of vitamin D levels above 27.5 nmol/L.

A particular focus should be on the quality of life and practical implications of IBD, as outlined in *Table 3*. GPs may wish to refer to resources available from organisations such as Crohn's and Colitis Australia for topic-specific information such as 'School and IBD'.¹¹

Table 3. The overlooked issues in IBD patient care

Issue	Comment
Employment	The ACCESS report revealed over three-quarters of patients noticed a change in work life as a result of IBD. This included time off, restriction of duties, travel restriction and loss of income.
Education	Similar findings to above, as well as a lack of understanding or not being believed about their illness.
Quality of life	Many studies have shown a lower quality of life in IBD patients and this has been associated with disease activity.
Anaemia	Common in IBD and often multifactorial. Iron deficiency is common and responds poorly to oral iron. Intravenous iron is particularly useful in this situation.
Psychological health	Stress, depression and poor psychological health are associated with chronic disease and increased disease activity.
Sexual dysfunction	The potential for incontinence and wind, and a resistance to discuss sexual health concerns makes these issue common and challenging.
Functional GI symptoms	Common in IBD and require careful assessment. Dietary interventions (via a specialist dietician) have proven useful.
Smoking	Strongly associated with negative disease outcomes in CD. Cessation should be actively encouraged and awareness of available help and resources given.
Nutrition and development	Key priorities in all patients, but should be particularly focused on children, adolescents and young adults.

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RESOURCES FOR PATIENTS

- Healthdirect Australia, www.healthdirect.gov.au/symptoms-of-crohns-disease-and-colitis
- Crohn's and Colitis Australia has sections on financial aspects of IBD, and other patient-relevant resources such as 'students with IBD', www.crohnsandcolitis.com.au

RESOURCES FOR DOCTORS

- Morrison G, Headon B, Gibson P. Update in Inflammatory bowel disease. *Aust Fam Physician* 2009;38:956–61.
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- Improving Inflammatory Bowel Disease care across Australia a report by PricewaterhouseCoopers Australia (PwC 2013), www.crohnsandcolitis.com.au/site/wp-content/uploads/PwC-Report-2013-Executive-Summary.pdf. This report provides information about IBD statistics and models of care used in Australia.

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CASE 4

JESSICA HAD UNPROTECTED SEX

Jessica, 16 years, comes to an appointment alone, reporting that she had unprotected sex last night, with a boy in her year at school, and does not want her mother to know.

QUESTION 1   

What laws guide decision making with regards to consent and privacy? How might these laws apply to this consultation?

QUESTION 2 

What are your priorities for this consultation?

QUESTION 3 

What sexual health testing is appropriate?

QUESTION 4 

What contraceptive options are available for Jessica?

FURTHER INFORMATION

A self-administered swab is done today and you advise Jessica that it will need to be repeated at her next visit. She requests contact on her mobile phone for results. She decides on having an etonogestrel implant. You write a prescription for her and arrange a follow-up appointment to coincide with the onset of her next period. You suggest she might like to bring her mother along, but does not have to.

Jessica misses her next appointment but promises to re-book when contacted by the practice nurse. She returns 6 weeks later, having missed her last period. Her urine pregnancy test is positive.

QUESTION 5 

What are the next considerations for this appointment?

FURTHER INFORMATION

You ask Jessica to return in a few days to discuss her decision making. In the meantime, Jessica's chlamydia test returns positive.

QUESTION 10 

What is the outlook for Jessica and her baby?

CASE 4 ANSWERS

ANSWER 1

Minors are entitled to confidentiality and, as children grow older, they have increasing capacity to give consent with regards to their medical care. Parental authority cannot be assumed. Only New South Wales and South Australia have specific legislation.

In 1986, the Gillick principle was established in Britain and allows for minors with adequate maturity to give consent for their own medical treatment.^{1,2} The principle has never been tested in Australian courts, but it is widely assumed the principle would hold. Finding a minor to be mature (Gillick competent) is situation specific, but overrides any parental decision (refer to *Resources for doctors*).

Privacy of medical information should also be assumed for legally competent minors. Parents do not automatically have access to their child’s medical records. Young people can be reassured about their entitlement to confidentiality; however, there are a few exceptions where there are serious concerns for their safety. This should be balanced with the knowledge that adolescents who have parental support are psychologically more protected and, where appropriate, young people should be encouraged to involve their parents in their care as a useful support and to reduce the risk of family dispute.³

It is a valuable routine practice to note who attended a consultation with a child or adolescent and what information young people are comfortable having disclosed to parents.

Jessica can be reassured about being able to make her own health decisions in this context and that she is entitled to complete confidentiality, except in special circumstances (eg significant risk of harm). We would encourage her to involve her parents if it is safe to do so, but the decision is hers to make.

ANSWER 2

It is important to ensure that you first engage Jessica. Teenagers may be difficult to engage but, like all patients, benefit from a trusting relationship with a regular GP. Listening to the young person and identifying their concerns is the highest priority. Teenagers may be unfamiliar with the consultation process and worry about confidentiality. They identify staff attitudes of respect and friendliness, good communication, medical competency, guideline-driven care and involvement in their own healthcare as important determinant of satisfaction with their care.⁴

Jessica will require levonorgestral, the morning-after pill (emergency contraception), to reduce her risk of pregnancy. This is available over the counter as a single tablet of 1.5 mg or 2 x 750 µg tablets taken 12 hours apart. A prescription alternative is 25 x 30 µg levonorgestral progestin-only minipill tablets repeated after 12 hours.⁵

There are no medical contraindications to the use of levonorgestrel but the cost can be prohibitive for adolescents. Practices might consider keeping their own stock for this situation or being aware of local non-government organisations that have a youth focus and may be able to provide brokerage.

ANSWER 3

Jessica will require screening for sexually transmissible infections (STIs). She is particularly at risk for chlamydia, as this STI occurs at a rate of over 4 per 1000 in the 15–19 year age group.⁶ Reporting of chlamydia has increased 4-fold in the past decade. Jessica’s same-age partner has a low risk for other STIs.⁷

While practitioner-administered cervical swab for chlamydia polymerase chain reaction (PCR) is the most reliable test,⁸ a self-administered swab or first-pass urine are reasonable alternatives and usually much more acceptable to young women.⁸ Screening for gonorrhoea, syphilis, human immunodeficiency virus (HIV) or trichomonas might be considered, depending on risk.⁹

Jessica can also be reassured that she will not need a Pap smear until she is 18–20 years of age. There is no benefit for women under the age of 20 years to have Pap smear screening and it increases the risk of over-treating lesions with little invasive potential.¹⁰

ANSWER 4

All reversible methods of contraception can be used by adolescents. Use of condoms in conjunction with emergency contraception should be covered in detail. Further counselling about contraceptive options should cover efficacy, patient preferences and barriers to use. The oral contraceptive pill remains popular among young women. The recent addition of the ethinyloestradiol pill (20 µg) to the Pharmaceutical Benefits Scheme (PBS) has made it affordable for low-income earners. Use of the very low dose pill continuously reduces bleeding, dysmenorrhoea, iron deficiency and, potentially, reduces the incidence of endometriosis.¹¹ However, compliance is particularly poor in this age group and pregnancy prevention can

be better achieved with long-acting reversible contraceptives.^{12,13} These methods offer a high level of reliability and include:

- etonogestrel implants
- hormone-containing and copper intrauterine devices (IUDs)
- medroxyprogesterone acetate injection.

Nulliparity and adolescence are no longer contraindications for IUD use. The risk of pelvic inflammatory disease or infertility is not increased in IUD users.¹⁴ Adolescent women who have had an IUD inserted for contraception report a high level of satisfaction.¹⁵

ANSWER 5

Young people engaging in early sexual activity are at a greater risk of behavioural and mental health issues¹⁶ so, apart from following-up with chlamydia testing, there are now major psychosocial issues to explore.

A non-judgmental conversation about Jessica's wishes and options for the pregnancy will be the focus. It is possible for Jessica to give consent for an abortion if she is judged to be a mature minor. She would benefit from having a parent or guardian involved, or at least a supportive adult she trusts. Her termination options include either surgical or medical procedures. The choice between the two options is very much a personal one and complications rates are not significantly different.¹⁷

An ideal way of assessing the psychosocial situation of a teenager is to use the HEADSS (home and environment, education and employment, activities, drugs, sexuality and suicide/depression) mnemonic:¹⁸

- Home and environment (eg Whom do you live with?)
- Education and employment (eg How is school for you?)
- Activities (eg What do you do outside of school?)
- Drugs (eg Have you ever tried cigarettes, alcohol or any other drugs?)
- Sexuality (eg Have you ever been sexually involved with anyone? Have you identified who you are sexually attracted to?)
- Suicide/depression (eg How are you going emotionally? Have you ever self-harmed or thought of killing yourself?).

In the context of being reassured about confidentiality, most teenagers are very comfortable answering such questions with a GP.

ANSWER 6

Azithromycin 1 g stat, the usual treatment for chlamydia, is category B1 in pregnancy and would still be the treatment of choice.¹⁹ Doxycycline can be used in the first 18 weeks of pregnancy, after which dental complications may occur. Test of cure should be performed in pregnant women and, given the high risk of re-infection, you might repeat the test in the third trimester. No single technique for contact tracing or partner treatment seems better than any other, although partner-initiated therapy reduces re-infection with chlamydia,²⁰ but success rates can be quite low.

ANSWER 7

Jessica is at risk of disengaging from education and living in poverty. Teenage pregnancies are more likely to result in adverse neonatal outcomes²¹ such as inadequate antenatal care, lower birth-weight babies, premature births and major congenital defects. There is also a higher risk of perinatal mortality and postnatal depression.²² Young women have a high rate of disordered eating and pregnant teenagers are more likely to be using drugs and alcohol than older women.²¹

ANSWER 8

Proceeding with the dTpa vaccination may help protect Jessica's baby from whooping cough in the early months of life, but giving Jessica the vaccination should be delayed until the third trimester or immediately postpartum.²³

ANSWER 9

There are many advantages to breastfeeding. In Jessica's case, there would be a cost saving, as she would not need to buy formula, and an improved attachment between mother and baby.²⁴

Teenage mothers may be from families of origin that are more chaotic, have poor emotional attachment and an increased risk of domestic violence.²² Such teenagers may have the most to gain from improved emotional attachment with their infant. The Edinburgh Postnatal Depression Scale has been validated for use in adolescent mothers²⁵ who are at increased risk of depression and post-traumatic stress disorder. Successful breastfeeding has long-term beneficial effects in reducing these risks.^{26–29}

ANSWER 10

Young mothers who continue their education and have good family and other social supports record outcomes as good as those for older mothers.^{30,31}

Keeping Jessica well engaged with good antenatal care has completely changed her outlook for the better.

RESOURCES FOR DOCTORS

- The Royal Children's Hospital, Melbourne, www.rch.org.au/clinicalguide/guideline_index/Engaging_with_and_assessing_the_adolescent_patient
- Australian Government, Australian Law Reform Commission, www.alrc.gov.au/publications/68.%20Decision%20Making%20by%20and%20for%20Individuals%20Under%20the%20Age%20of%2018/capacity-and-health-info
- Headspace, Psychosocial Assessment for Young People, www.headspace.org.au/what-works

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CASE 5

ISAAC HAS A BURNING SENSATION

Isaac is a plumbing apprentice aged 17 years and is new to your practice. After a brief introduction you ask him what you can help him with today. He seems a little embarrassed and states, 'It burns when I piss'.

QUESTION 1 

What are some of the general principles you adhere to when taking a sexual history in a case like this? What information do you need to obtain from Isaac?

FURTHER INFORMATION

After reassuring Isaac that this is quite a common problem, you explain that you need to ask him more questions to work out what the problem is. In reply to your questions, Isaac states that he has had this burning for about 5 days. He did not make an appointment at the onset of his symptoms because he was embarrassed and hoped it would just go away. He thinks he may have had some clear watery discharge but is not sure. He has not noticed any sores or blisters on his penis. Other than the dysuria, he has not felt unwell. He does not have urinary frequency. He has never had similar symptoms before.

When you ask about his sexual history, he informs you that about 6 months ago he started experimenting with male-to-male sex. He does not have a boyfriend, but has had sex with a handful of men, most of whom are a few years older than him. He does not usually ask them about their human immunodeficiency virus (HIV) status. He does try to use condoms for anal sex, but does not always remember to do so, particularly after he has had a couple of drinks. He tends to be the receptive partner during anal sex, and he sometimes finds it difficult to insist on the use of condoms. He last had receptive anal sex without using a condom about 1 week ago. He has not had any female partners. Isaac does not inject drugs, but a couple of times he has smoked crystal meth when it was offered to him during sex.

Isaac agrees to being examined and you notice some slight erythema of his urethral meatus, with a small amount of clear watery urethral discharge. Otherwise, there are no genital lesions. He does not have swelling or tenderness of the testes or epididymis. There is no inguinal lymphadenopathy.

QUESTION 2 

What is the likely diagnosis for Isaac's condition? What tests will you perform to confirm the diagnosis?

QUESTION 3 

Isaac does not seem adequately informed about the risks associated with condomless sex. What information would you give him at this stage?

QUESTION 4  

You suggest to Isaac that he should return in about 1 week for his results and to follow up his progress. How do you manage him in the meantime?

Less likely causes for his urethritis are *Mycoplasma genitalium*, *Ureaplasma urealyticum*, *Herpes simplex virus* (HSV) and anaerobes. *Mycoplasma* and *ureaplasma* may present in this way, they are less prevalent than chlamydia and gonorrhoea.¹ HSV can present with only dysuria, but usually it presents with some visible lesions. Also, this is Isaac's first episode and primary HSV infection often presents with constitutional symptoms.

Unlikely causes for his urethritis include *Trichomonas vaginalis* and adenovirus. *Trichomonas* is an uncommon cause for urethritis in men and is seen only in men who have female sexual partners.² Adenovirus usually presents with impressive meatal erythema and oedema, and is often accompanied by conjunctivitis and constitutional symptoms.³

Tests to perform

To investigate his urethritis, Isaac should be tested with a meatal swab for microscopy and culture, and a meatal swab for polymerase chain reaction (PCR) for chlamydia and gonorrhoea.⁴ The culture result is important to assess for antibiotic resistance if gonorrhoea is confirmed. If Isaac had no symptoms of urethritis, then a first-pass urine PCR for chlamydia and gonorrhoea would be a preferred alternative.^{5,6} It would be reasonable to also test the PCR swab for *M. genitalium* in a symptomatic case such as Isaac's, but this test is currently not routinely available at most commercial laboratories in Australia.

Isaac should be offered a pharyngeal swab and anal swab to test for chlamydia and gonorrhoea by PCR at these sites, as colonisation at these sites can often be asymptomatic. Collection of the anal swab also allows for examination of the peri-anal area for warts.

Isaac reports significant sexual risk, so he should be offered full STI testing, including serology for HIV, hepatitis B and syphilis. Hepatitis C is not generally considered an STI, but you could offer to test for it in case there was any unreported intravenous drug use.⁴

ANSWER 3

There are a few issues that need to be addressed with Isaac at this stage:

- Isaac has some understanding of the need to use condoms, but probably does not realise how much risk he is taking. In Australia, the HIV transmission rate is currently the highest it has been since the mid 1990s; in 2013, there were 1236 new diagnoses. The majority of these cases were in men who have sex with men (MSM).⁷
- Although he has some understanding of the need to use condoms, Isaac reports that he sometimes does not feel empowered to insist on condom use. He may benefit from referral to a sexual health counsellor or psychologist to further explore this.
- Before ordering an HIV test, you should discuss with Isaac whether he understands the implications of a positive HIV result. Also, a negative HIV result needs to be interpreted with an understanding of the test's 'window period'.
- As Isaac's behaviour pattern places him at significant risk of HIV, it is important that he knows about post-exposure prophylaxis (PEP) or non-occupational PEP. He needs to know when and where

to access PEP. This is available from most hospital emergency departments and sexual health clinics, and some general practices that specialise in HIV treatment. PEP should be started within 72 hours of possible HIV exposure, although sooner is better. It consists of 4 weeks of antiretroviral treatment.⁸

ANSWER 4

Isaac should be treated at the current visit, on the basis of his symptoms alone. To delay treatment would increase the risk of complications such as epididymo-orchitis, prostatitis and urethral strictures. Delay of treatment also increases the risk of transmission to others.

Syndromically, Isaac is likely to have chlamydia, but epidemiologically, gonorrhoea is also quite likely, as this is increasingly common among men who have sex with MSM.⁷ Australian guidelines differ in empirical treatment of urethritis, some suggesting treating for chlamydia only while awaiting the results,⁴ whereas others recommend treating for both chlamydia and gonorrhoea if the patient is a man who has sex with men.⁹ Given the high incidence of gonorrhoea among MSM in Australian cities,⁷ it is reasonable to treat for both chlamydia and gonorrhoea when these patients present with urethritis,⁹ with a combination of azithromycin 1 g PO stat and ceftriaxone 500 mg IM stat (dissolved in 2 mL of 1% lignocaine).⁴

Isaac should inform all his sexual partners that they will need to be tested for chlamydia and gonorrhoea. He can do this either through the method by which he usually contacts them, or he could use one of the web-based services that provide some anonymity. These include www.thedramadownunder.info and www.letthemknow.org.au

Isaac should refrain from having any sexual contact for 1 week after treatment and after that week he should avoid having sex with any of the people with whom he's had sex over the past 6 months until after those sexual contacts have been tested and treated.⁴

ANSWER 5

Isaac had urethral and anal gonorrhoea, which have been treated. It is recommended that patients be followed-up 1 week after treatment (which is now) to:

- assess for symptoms resolution
- confirm that contact tracing has been undertaken and offer assistance if needed
- provide further sexual health education.⁴

For pharyngeal, cervical and anal gonococcal infections, a test of cure using PCR testing is recommended at 2 weeks after treatment, as treatment failure is thought to be more common at these sites.⁴

It is recommended that Isaac has repeat STI testing at 3 months, as there is a significant risk of re-infection. The Sexually Transmissible Infections in Gay Men Action Group (STIGMA) guidelines recommend that someone in Isaac's situation has STI testing every 3 months.^{5,6}

Isaac also needs repeat HIV and syphilis testing, as he had a significant risk exposure 1 week before his test so these infections may have been missed. Repeat HIV and syphilis tests 6 weeks later would be advisable.

ANSWER 6

Re-infection due to re-exposure is generally the most likely cause of repeat presentations with urethritis. However, if Isaac had no sexual contact, including oral sex, then we must consider the possibility of treatment failure. Treatment failure of urethral gonorrhoea is uncommon when the patient has been treated with the recommended treatment regimen, particularly if the culture result indicated adequate antibiotic sensitivity.

In this case, it is possible that a concurrent case of urethral *M. genitalium* has been missed. The recommended treatment regimen for *M. genitalium* urethritis is azithromycin 1 g PO stat⁴ but, unfortunately, mycoplasma infections have fairly high treatment failure rates; one study reported a failure rate of 28%.¹⁰

In this situation it would be worthwhile repeating his tests and including a first-pass urine test for mycoplasma PCR and ureaplasma PCR.

If Isaac tests positive for mycoplasma, and if he has had no new sexual contacts since he was treated with azithromycin, then he is considered a treatment failure and should be referred to a sexual health centre for further management. Some sexual health centres are currently conducting trials of novel antibiotic agents for the treatment of genital *M. genitalium* infections.

RESOURCES FOR PATIENTS

- Partner notification can be assisted through online platforms such as www.thedramadownunder.info (for MSMs) and www.letthemknow.org.au.
- The Melbourne Sexual Health Centre has published a library of multilingual patient handouts on their website, <http://mshc.org.au/healthpro/FactSheets/tabid/253/Default.aspx>

RESOURCES FOR DOCTORS

- The Australian STI Management Guidelines can be found at www.sti.guidelines.org.au

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ACTIVITY ID: 23837

STAGES OF LIFE: ADOLESCENT/YOUTH HEALTH

This unit of *check* is approved for 6 Category 2 points in the RACGP QI&CPD program. The expected time to complete this activity is 3 hours and consists of:

- reading and completing the questions for each case study
- you can do this on hard copy or by logging on to the *gplearning* website, <http://gplearning.racgp.org.au>
- answering the following multiple choice questions (MCQs) by logging on to the *gplearning* website, <http://gplearning.racgp.org.au>
- you must score $\geq 80\%$ before you can mark the activity as 'Complete'
- completing the online evaluation form.

You can only qualify for QI&CPD points by completing the MCQs online; we cannot process hard copy answers.

If you have any technical issues accessing this activity online, please contact the *gplearning* helpdesk on 1800 284 789.

If you are not an RACGP member and would like to access the *check* program, please contact the *gplearning* helpdesk on 1800 284 789 to purchase access to the program.

QUESTION 1

Juliette and Frank see you for advice about their son Nate, 16 years of age, whom they fear has been using illicit drugs. After speaking to you they convince Nate to see you. Which of the following is likely to give you the most useful information in assessing Nate?

- A urine drug screen
- Asking Nate about his friends' use of drugs
- Asking Nate open-ended questions and giving positive affirmations
- Your impressions of Nate during the consultation

QUESTION 2

General principles in treating adolescent substance use include:

- Psycho-education
- Clear instructions on how to make changes
- Engagement of the parents in enforcing abstinence
- Regular urine drug screens to monitor substance use

QUESTION 3

Deena, 17 years of age, comes to see you for advice about breast reduction surgery. She tells you she hates her breasts and wishes she could get rid of them altogether. As you engage her in conversation, she breaks down in tears and tells you she has she has felt depressed since the age of 12 years, when she started having periods and developing breasts. She says, 'I feel male and would give anything for a male body.' She finds it upsetting when her parents tell her she would look pretty in a dress instead of always dressing like a boy.

Which element of Deena's history best supports a diagnosis of gender dysphoria?

- She hates her breasts and wants them removed.
- She identifies as male although her assigned gender is female.
- The difference between her assigned gender and experienced/expressed gender has caused significant distress since she was 12 years of age.
- She dresses like a boy.

QUESTION 4

How would you monitor an individual who has commenced testosterone therapy to transition from female to male?

- Hormone levels should be monitored every month for the first 6 months and then every 6 months if stable.
- Hormone levels should be monitored every 3 months for the first year and then every 6–12 months if stable.
- Laboratory testing, including serum testosterone, haemoglobin and liver function tests, should be monitored every month for the first year and then every 6 months if stable.
- Laboratory testing, including serum testosterone, haemoglobin and liver function tests, should be monitored every 3 months for the first year and then every 12 months if stable.

QUESTION 5

Lennie is 17 years of age and was diagnosed with Crohn's disease 6 months ago. At the time of diagnosis, Lennie commenced corticosteroid therapy, which was effective for the first few months. However, his symptoms recurred and he now presents with worsening abdominal pain, diarrhoea, weight loss and general lethargy. You calculate his Crohn's disease activity index (CDAI) score, which is 300. This score indicates

- Moderate inflammation activity
- Severe inflammation activity
- Moderate disease activity
- Severe disease activity

QUESTION 6

How would you manage Lennie, given his CDAI?

- A. Order baseline tests to determine if Lennie has an infection and treat on the basis of the test results.
- B. Assess disease activity and treat as appropriate.
- C. Increase the corticosteroid dose.
- D. Admit Lennie to hospital for treatment.

QUESTION 7

Roxanne is 16 years of age and comes to see you to discuss options for contraception. She is particularly interested in an intrauterine device (IUD), as she doesn't like taking pills.

Which of the following statements about the use of IUDs in adolescents is true?

- A. Hormone-containing and copper IUDs do not provide a high enough level of reliability in adolescents.
- B. IUDs are not contraindicated in adolescents.
- C. The risk of pelvic inflammatory disease or infertility is increased in IUD users.
- D. Adolescent women who have IUD inserted report poor satisfaction.

QUESTION 8

What advice would you give Roxanne about the need to have Pap smears?

- A. She should start having Pap smears within 1 year of having sexual intercourse.
- B. She should not delay having a Pap smear if she is already sexually active.
- C. She does not need to have a Pap smear until she is over 21 years.
- D. She does not need to have a Pap smear until she is 18–20 years.

QUESTION 9

How would you manage a patient with symptomatic urethritis?

- A. Investigate the cause by polymerase chain reaction (PCR) testing of a first-pass urine sample and treat on the basis of the causative agent.
- B. Take a meatal swab for PCR testing and gonococcal culture, and treat on the basis of the causative agent.
- C. Take a meatal swab for PCR testing of chlamydia/gonorrhoea and for gonococcal culture, and start treatment on the basis of the symptoms while waiting for the results.
- D. Take a meatal swab for PCR testing and start treatment for gonorrhoea while waiting for the results.

QUESTION 10

What is the recommended timing for follow-up and repeat STI testing of a patient with urethral gonorrhoea?

- A. Follow up 1 week after treatment and repeat STI testing at 3 months
- B. Follow up 1 week after treatment and repeat STI testing at 1 month
- C. Follow up at 1 week after treatment and repeat STI testing at 6 weeks
- D. Follow up at 2 weeks after treatment and repeat STI testing at 6 weeks

check

Independent learning program for GPs