

education

FROM THE JOURNALS Edited highlights of Richard Lehman's blog on <http://bmj.co/Lehman>

Single nephrons are all alike

This is the time of year when our thoughts should turn to the kidney. However, I must report with sadness that just the smell of them on the barbecue usually elicits wrinklings of the nose and sharp remarks from the one I love. And this is a problem, since one man alone cannot consume the entire contents of a supermarket packet of lamb's kidneys on a single occasion. Human kidneys are also harvested, though not for the barbecue. A study of 1388 kidneys from living donors at the Mayo Clinic gives us new insights into the function of their basic constituent, the nephron. By combining computed tomography scanning and biopsies with functional measurements, we now know that the mean number of nephrons is $860\,000 \pm 370\,000$ per kidney and that each one filters 80 ± 40 nl per minute. The surprise is that nephrons look and perform similarly in donors of all ages, heights, and weights. The main exception is in people more than 190 cm tall, who have better performing nephrons. The Texan nephron.

• *N Engl J Med* doi:10.1056/NEJMoa1614329

Education and cardiovascular risk

Alexander Pope wrote that a little learning is a dangerous thing, but this observational study of 14 000 American adults over a period of 26 years suggests that any learning reduces cardiovascular risk in a linear fashion. A little learning is good, and more learning is better. "Educational attainment was inversely related to the lifetime risk of cardiovascular disease (CVD), regardless of other important socioeconomic characteristics. Our findings emphasise the need for further efforts to reduce CVD inequalities related to educational disparities." I have absolutely no idea what the second



Aspirin: bleeding dangerous in the old

This follow-up study of 3166 patients in the OXVASC study is a wake up call to all doctors who prescribe aspirin. This is a dangerous drug for people over 75. But perhaps even more, this study is a wake up call to all researchers, politicians, and public health savants not to rely on routinely collected data. In OXVASC, the data on bleeding were collected by face to face encounters at 30 days, 6 months, and years 1, 5, and 10 by a study nurse or physician. There were 405 bleeding episodes in this cohort, and 78% of these led to hospital admission. But a full 37% of these had escaped administrative coding. More than a third! So much for a data-rich NHS: it is more like a data colander with very big holes. This is an immensely important paper for that finding alone. As for those poor over-75s with major gastrointestinal bleeds, most of them ended up dead or disabled. The authors point to a meta-analysis which shows that 75% of these bleeds could have been prevented by co-prescription of a proton pump inhibitor. I'd suggest that every general practice in the country should now do an audit of 75+ year old patients, to decide which of them really need an anti-platelet agent, and whether those who do are on a proton pump inhibitor.

• *Lancet* doi:10.1016/S0140-6736(17)30770-5

sentence means. Schools not statins? Perhaps a public health physician can help me out.

• *JAMA* doi:10.1001/jamainternmed.2017.1877

Let's bomb some hospitals

Wars get more sickening the longer they go on. By the time the Germans came to suppress the Warsaw Uprising in 1944, their first targets were buildings used as hospitals, where they indiscriminately killed all the occupants, including their own wounded. Now the same is happening in the long running war in Syria. A careful analysis shows that "between early November 2015, and 31 December 2016, 938 people were directly harmed in 402 incidents of violence against healthcare: 677 (72%) were wounded and 261 (28%) were killed. Most of the dead were adult males (68%), but the highest case fatality (39%) was seen in children aged younger than 5 years. 24% of attack victims were health workers... A third of healthcare services were hit more than once. Services providing trauma care were attacked more than other services."

• *Lancet* doi:10.1016/S0140-6736(17)31328-4

A higher score with FeSO

"In this double-blind, randomised clinical trial that included 80 patients, those who received ferrous sulphate for 12 weeks had a 1.0 g/dL greater increase in haemoglobin concentration than those receiving iron polysaccharide complex." That's quite a difference. So who were these 80 patients? They were actually American babies and young kids up to 4 years old attending a tertiary hospital clinic for nutritional anaemia. The evil reputation of ferrous sulphate as a gastric irritant was mitigated here by keeping the dose low.

• *JAMA* doi:10.1001/jama.2017.6846

Managing adults with diabetes in hospital during an acute illness



See <http://learning.bmj.com> for linked learning module

Tahseen A Chowdhury, Hannah Cheston, Anne Claydon

Department of Diabetes and Metabolism, Barts Health NHS Trust, The Royal London Hospital Whitechapel, London E1 1BB, UK
Correspondence: TA Chowdhury Tahseen.Chowdhury@bartshealth.nhs.uk



Diabetes is common and becoming commoner. Data from the UK National In-patient Diabetes Audit (NADia) suggests that around one in five inpatient beds are occupied by a person with diabetes and that diabetes can often be poorly managed in hospital, with around one in 10 in patients developing a severe hypoglycaemic episode and around one in four inpatient charts showing medication management errors in the preceding seven days.¹ This article highlights the principles of managing adult patients in hospital with diabetes who are acutely unwell and is aimed at non-specialists.

Is tight glucose control in inpatients necessary?

Poorly managed hyperglycaemia in patients who are acutely unwell can lead to adverse outcomes in terms of morbidity, mortality, and longer hospital stay.² There is, however, no randomised trial evidence to demonstrate that tight management of glucose control in inpatients can improve outcomes, and such evidence is urgently required. Hyperglycaemia may be encountered in patients with known diabetes, patients newly presenting with diabetes, or patients with transient hyperglycaemia related to illness, medication (such as corticosteroids), or enteral feeding. Careful assessment and pragmatic management of hyperglycaemia is currently recommended.⁸

WHAT YOU NEED TO KNOW

- In general, do not stop insulin treatment in a person with type 1 diabetes; if the person is used to carbohydrate counting and correction dosing, encourage them to self correct
- Assess a person with acute hyperglycaemia as a whole, taking into account their clinical condition, previous glucose control, and factors that may be contributing to hyperglycaemia
- Involve the diabetes specialist team if available at an early stage, especially for patients struggling with management.

SOURCES AND SELECTION CRITERIA

We searched Pubmed, Google Scholar, CINAHL, and the Cochrane Database using the terms “management of diabetes/hyperglycaemia in hospital” and “management of diabetes during acute illness.” We reviewed guidelines from the Joint British Diabetes Societies, National Institute for Health and Care Excellence, European Association for the Study of Diabetes, and American Diabetes Association.

Glucose control may be particularly difficult because of illness, erratic oral intake, changes in renal or liver function, and changes in medication (such as stopping metformin or starting steroids).³ Tight glucose control in hospital inpatients may not be desirable due to the risk of hypoglycaemia, and in some settings (such as intensive care) it may be harmful.⁴ Trials of tight glycaemic control in specific situations such as acute stroke or myocardial infarction have not shown benefit.^{5,6} There is no evidence that tight glycaemic control in hospital patients improves outcomes other than during cardiac surgery or liver transplantation.⁷

What is the optimum blood glucose range for inpatients with diabetes?

Avoiding hypoglycaemia when managing glycaemia is important while in hospital.⁸ It is uncertain what the optimum blood glucose range is and at present it seems unlikely that there is a one size fits all rule. The Joint British Diabetes Societies Guidelines suggest that there is limited evidence for a threshold for starting intravenous insulin therapy in medically unwell patients, however in certain scenarios such as in the context of intensive care, acute myocardial infarction, or acute stroke, it is recommended that initiation of intravenous insulin therapy should be considered if the capillary blood glucose concentration is greater than 10 mmol/L.⁸ A consensus target glucose range of 6-10 mmol/L for inpatients with diabetes is also recommended, with a range of 4-12 mmol/L deemed acceptable.

Symptoms and causes of hyperglycaemia

Symptoms

- Increased thirst
- Increased urine output
- Blurred vision
- Lethargy
- Nausea or vomiting
- Tachycardia
- Irritability

Causes

- Sepsis
- Acute illness
- Corticosteroids
- Omission of insulin or oral hypoglycaemic medication
- Recent hypoglycaemia
- Stress or anxiety
- Surgery
- Lack of insulin (endogenous or exogenous)
- Long term poor glucose control



SPL

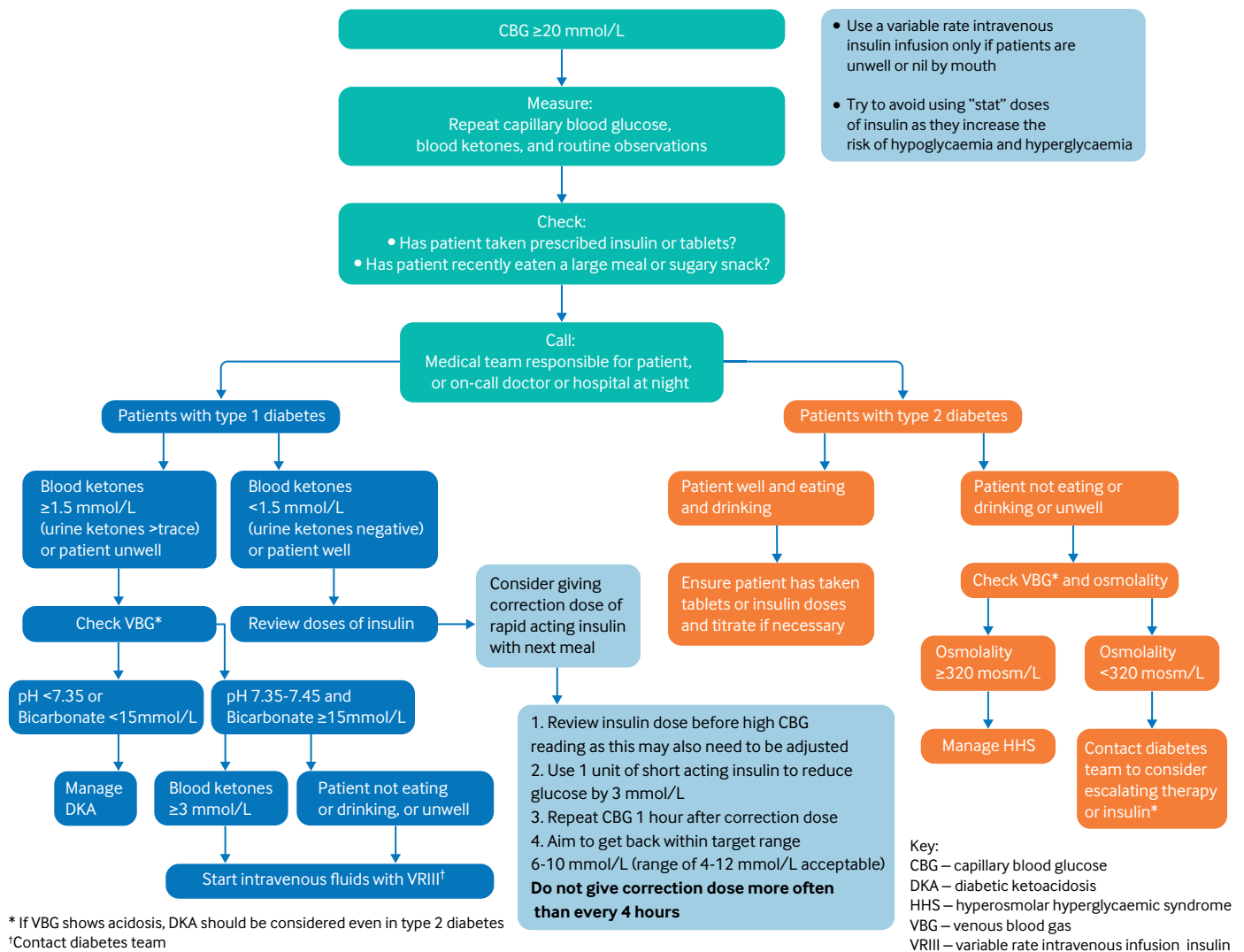


Fig 1 | Suggested approach to treating patients in hospital with hyperglycaemia

Nil by mouth or poor oral intake in a patient with type 1 diabetes

Case scenario—A 23 year old woman with type 1 diabetes has been unwell with diarrhoea and vomiting for the past 12 hours. She is able to sip fluids but is not able to eat solid food. She is able to monitor her own blood glucose and ketone levels.

In patients with type 1 diabetes, as a general rule do not stop their normal insulin therapy, even when oral intake is poor (see fig 1). A useful algorithm for patients based on Dose Adjustment for Normal Eating (DAFNE) guidelines is available.⁹ This suggests that, if glucose is above 11 mmol/L, short acting insulin doses should be increased by 2-6 units per dose. Monitor plasma glucose and ketone levels at least every 2 hours. If plasma glucose levels are above 11 mmol/L but ketone levels are below 1.5 mmol/L, then the patient will need additional insulin (correction doses), according to the patient's total daily insulin dose and level of plasma glucose. Patients with type 1 diabetes may be familiar with this situation outside hospital. Talk to patients about how they would have dealt with their high glucose levels in the

In patients with type 1 diabetes, as a general rule do not stop their normal insulin therapy

past. Patients who are unable to tolerate oral fluids require intravenous fluid and intravenous insulin therapy. Assess venous pH and consider treatment for diabetic ketoacidosis in patients with a blood ketone measurement of 3 mmol/L or above. In the Unites States, diabetic ketoacidosis may be divided into mild, moderate, and severe, and guidelines suggest that subcutaneous insulin may be used in mild or moderate cases.¹⁰

Figure 1 provides further information on managing inpatients with type 1 diabetes.

HELPFUL RESOURCES

Joint British Diabetes Societies (JBDS) for Inpatient Care Group (www.diabetologists-abcd.org.uk/JBDS/JBDS.htm)—Guidelines on management of variable rate intravenous insulin infusion, diabetes during corticosteroid therapy, and nasogastric feeding

BMJ Learning (www.BMJLearning.com)—Has learning modules on inpatient glycaemic management

Diabetes UK. Dealing with illness (www.diabetes.org.uk/Guide-to-diabetes/Life-with-diabetes/Illness/)—Guidance for patients with diabetes on dealing with illness

Type 2 diabetes and a raised capillary blood glucose concentration

Case scenario—A 56 year old man with type 2 diabetes is admitted to hospital with sepsis. He is treated with twice daily mixed insulin and metformin 2000 mg daily, and his glycaemic control remains reasonable (glycated haemoglobin (HbA_{1c}) 63 mmol/mol). On the evening of the second day of his admission, his capillary blood glucose level is 25.7 mmol/L.

High glucose levels are common and may be accepted for a short period in patients with type 2 diabetes while unwell or treatment is titrated.

Repeat the patient's capillary glucose, making sure that his finger is cleaned beforehand to ensure no contamination with glucose from external sources. If he is hyperglycaemic, ascertain whether he is well or unwell by undertaking routine observations (including national early warning score (NEWS), plasma ketones, and venous blood gases). Consider why the patient has hyperglycaemia and whether action is needed.

In a patient with an isolated elevated capillary blood glucose level on a background of reasonable control during this admission, ask whether their diabetes medication was given on time and at the correct dose.

EDUCATION INTO PRACTICE

- Practice—Are your patients with diabetes who are taking insulin aware of “sick day rules”?
- Reflection—How often do you involve patients with diabetes in management of their condition while an inpatient, including making sure that they maintain access to their self management equipment?
- Can you note one or some things that you might do differently in your practice having read this article?
- Audit project—How would you use your learning from this article to create a SMART aim for a service improvement project? For example, “My project will aim to increase referrals of patients taking insulin to a structured programme of insulin support as per NICE guideline by X% over the next six months”

HOW PATIENTS WERE INVOLVED IN THE CREATION OF THIS ARTICLE

Patients who are members of the Ilford branch of Diabetes UK were consulted on the accuracy and contents of this manuscript.

Several stated that patients often feel disempowered when attending hospital and that knowledge of diabetes among general staff is variable, particularly regarding newer treatments such as continuous subcutaneous insulin infusions. People with diabetes were rarely asked to be involved in their diabetes management while in hospital. Often their glucose testing kits, insulin, and other equipment were taken away by staff, and they were unable to self manage, which made no sense, especially for people who were previously well controlled. Patients with diabetes also wanted rapid access to expert advice when unwell in hospital, especially when glucose levels were unstable. Patients also expressed concerns about difficulty in accessing appropriate food and timings of meals during hospital stays.

As a result, we have emphasised asking patients about how they have managed similar situations in the past and the need to offer specialist diabetes advice at an early stage for patients struggling with their diabetes management in hospital.

It is uncertain what the optimum blood glucose range is and at present it seems unlikely that there is a one size fits all rule

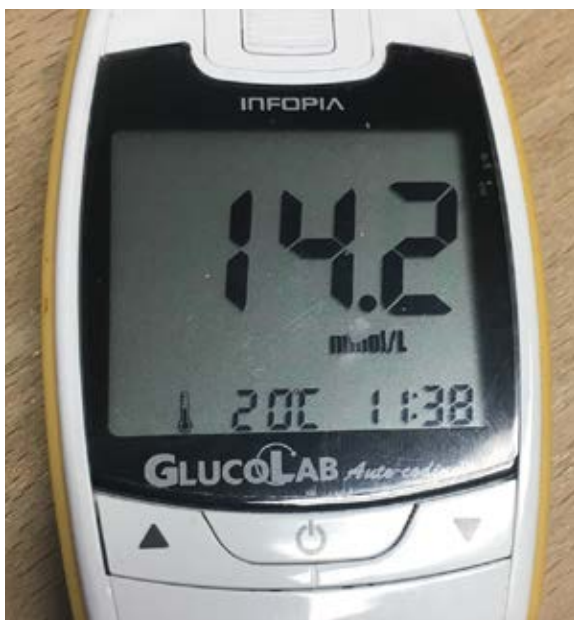
Check whether they have recently ingested any food or drink high in sugar. Ask whether they have had treatment for recent hypoglycaemia. In the case of a patient with increasing capillary blood glucose levels on a background of previous reasonable control, consider an acute illness or drugs (such as corticosteroids) or the possibility of a hyperglycaemic emergency developing.

If a hyperglycaemic emergency is excluded (fig 1), and the patient had taken his normal dose of insulin, it may be assumed that the hyperglycaemia is due to acute illness. If glucose is continuing to rise, a further small dose of his mixed insulin (10% of the total daily dose) may be given, but monitor capillary blood glucose two hourly thereafter. In addition, encourage the patient to adjust his regular doses of insulin to avoid recurrent hyperglycaemia during the rest of his stay in hospital. If there is any deterioration in his condition, consider the use of variable rate intravenous insulin infusion with a glucose infusion promptly, and consider getting him reviewed by the diabetes specialist team. As the patient's condition improves, he will probably need to reduce doses of insulin to avoid hypoglycaemia.

If the patient's plasma ketones are >1.5 mmol/mol and venous gases show a metabolic acidosis, then treat him for diabetic ketoacidosis despite his type 2 diabetes. If he is not acidotic calculate plasma osmolality ($[2 \times \text{sodium}] + \text{urea} + \text{glucose}$), and if this is >320 mosm/L treat the patient for hyperosmolar hyperglycaemic syndrome.¹¹ If the patient does not have a hyperglycaemic emergency but is becoming more unwell, has significant sepsis, or oral intake is uncertain, start variable rate intravenous infusion of insulin.⁸

If a patient's insulin or oral hypoglycaemic agents were omitted, give around 30-50% of the prescribed insulin dose and monitor the patient's capillary blood glucose every two hours until stable readings are obtained. Omitted oral hypoglycaemic agents should probably be given with the next meal, unless glucose levels are rising rapidly.

Arrange assessment of patients with erratic glucose control (such as hypoglycaemia or hyperglycaemia occurring frequently around the same time each day) by the diabetes specialist team if available.



Initiating insulin in a patient with new onset type 2 diabetes

Case scenario—A 67 year old woman with no history of diabetes is admitted to hospital with a stroke. Her glucose reading on admission is 17 mmol/mol, and she is treated with a variable rate intravenous infusion of insulin supplemented by intravenous fluids. Her HbA_{1c} is 89 mmol/mol. On recovery from her acute stroke, her capillary blood glucose levels on intravenous insulin and normal diet are high, and she needs around 120 units of insulin daily to maintain reasonable glucose control.

Guidelines from the National Institute for Health and Care Excellence (NICE) suggest that, for a patient who has never previously taken insulin and now needs insulin therapy, therapy is started after careful structured support and education from a diabetes specialist team.¹² In this patient, consider metformin if her estimated glomerular filtration rate (eGFR) is $>30 \text{ mL/min/1.72 m}^2$. As insulin requirements are high, she is likely to need insulin therapy, and an appropriate insulin regimen is twice daily pre-mixed insulin given before breakfast and evening meal. Calculate the dose by using the total daily dose, starting with 60% in the morning and 40% in the evening. Alternatively, use a weight based dosing regimen, with total daily insulin dose calculated at $0.5 \times \text{body weight (kg)}$ ($0.3 \times \text{body weight}$ if the patient is frail or has hepatic or renal impairment). Start subcutaneous insulin one hour before stopping intravenous insulin. The patient and her carers will require careful education about insulin therapy with close involvement of a diabetes specialist nurse, and ideally a dietitian.

Remember also that as she becomes more active outside of hospital, or her diet changes, her insulin requirement may change as well. Follow-up should be arranged for review after discharge, and her primary care provider should be informed that she has been started on insulin.

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BMJ OPINION

The death of bedside teaching

Bedside teaching is without question the best way to learn examination technique, communication skills, and disease pattern. Textbooks and recreation in moulage will never be able to cement the knowledge of a disease and its management in the same way.

However, current estimates show that today's medical courses comprise 8%-19% bedside teaching, compared with 75% in the 1960s. Today's students are clearly not getting enough bedside teaching. Why?

My hypotheses are as follows:

Finding patients who are suitably conscious, willing, and informative is incredibly time consuming

Free time to teach is unpredictable and fleeting, which is frustrating and creates a mental barrier to teaching

Patients are admitted, discharged, moved to another ward, sent for imaging, and taken to theatre before you have had the time to find students and teach them.

When you do find students it is during protected meal times, or family are visiting, or your workload increases.

If you are attempting to demonstrate clinical skills you could be delaying diagnostic or therapeutic interventions while waiting for students to arrive, which is not clinically justified.

Doctors feel that they are burdening and upsetting the patient by having many people examine them, often multiple times a day.

Unfortunately, opportunities to develop as students, doctors, and teachers are being missed for easily challenged reasons such as those above.

These are not the only reasons. I urge you to think of your own so you can challenge them.

Students are out there somewhere, standing sheepishly in the corner of an operating theatre looking at the back of an ENT surgeon perform a pan-endoscopy and pretending they can see the vocal cord lesion. These students are desperate to learn in non-threatening, real life environments; bedside teaching should not be abandoned.

Mark Mikhail, junior doctor, part of the NHS England Clinical Entrepreneur Programme



GETTY IMAGES

Discussing human papillomavirus vaccination

Yan Ling Quah,¹ Ieera Madan Aggarwal²



0.5 HOURS



See <http://learning.bmj.com> for linked learning module



What you should cover

Initiate a discussion about HPV

Explore whether the patient or their parents have heard of HPV vaccination and what they know about it. You may ask about the source of their information, whether they have considered vaccination, and any concerns they have.

Explain the effects of vaccination

In large randomised controlled trials, both Cervarix and Gardasil vaccines have been shown to be over 99% effective in preventing precancerous lesions associated with HPV types 16 or 18 in young women with no evidence of previous infection.¹⁰⁻¹² Gardasil was additionally 96-100% effective in preventing anogenital warts.¹⁰

Antibody titres after vaccination are relatively high. A long term follow-up study demonstrated that efficacy of the bivalent vaccine Cervarix after 9.4 years was 95.6% against HPV types 16 and 18.¹³ For the quadrivalent Gardasil, no cases of precancerous lesions or genital warts related to HPV 6, 11, 16, or 18 were detected at five year follow-up.¹³ Longer term studies are needed to establish if booster doses are required.

These trials measured antibody titres as the primary endpoint, which is a surrogate marker for protection against cancer and precancerous lesions. Evidence on long term immunogenicity and prevention of cervical cancer is not available. Explain to patients and their parents that, although the vaccine has been shown to prevent infection with oncogenic HPV viruses, it is not a replacement for routine adult cervical screening.¹⁴

Who may be vaccinated

HPV immunisation is usually recommended in adolescent girls before onset of sexual activity, typically in the age group of 9-14 years.

All girls aged 12-13 years in the UK are offered the quadrivalent vaccine Gardasil

¹Singhealth Polyclinics, Singapore

²Department of Gynaecological Oncology, KK Women's and Children's Hospital, Singapore

Correspondence to: I M Aggarwal ieera.aggarwal@singhealth.com.sg

This is part of a series of occasional articles on common problems in primary care. *The BMJ* welcomes contributions from GPs.

A mother and her 15 year old daughter come to your clinic. The mother's other daughter, who is 12 years old, recently received the human papillomavirus (HPV) vaccine at school. The mother wants to know whether her 15 year old daughter who missed her HPV vaccination should receive it now.

HPV is sexually transmitted. Infection is often asymptomatic. In some people, however, HPV infection persists and over time leads to genital warts or cancer, mainly cervical, but also anal, penile, oral, and throat cancers (fig 1). The HPV types 16 and 18 together cause 70% of cervical cancers.¹⁻⁴

Prophylactic vaccines against HPV are offered as part of the national immunisation programme in many countries including in the UK.¹ These vaccines generate HPV specific antibodies that bind to the virus and prevent cervical infection. Table 1 shows the three types of vaccines available.

Vaccination coverage globally has been variable. Surveys among parents find that the most common reasons for not vaccinating their child include lack of knowledge about the vaccine, a belief that it is not needed, their child is not sexually active, and concerns about safety.⁶⁻⁸ A healthcare provider's recommendation is an important factor in parents' decision to vaccinate their daughter.⁹

Table 1 | Types of HPV vaccines²

Vaccine	Type	Protection against HPV types	Licensed for use
Cervarix	Bivalent	Types 16, 18 (associated with cervical cancer)	Females aged 10-25 years
Gardasil	Quadrivalent	Types 6, 11 (associated with anogenital warts) Types 16, 18 (associated with cervical cancer)	Females and males aged 9-26 years
Gardasil 9	Nonavalent	Types 6, 11 (associated with anogenital warts) Types 16, 18 (associated with cervical cancer) Types 31, 33, 45, 52, 58 (responsible for ~14% of HPV associated cancers in women and ~4% of HPV associated cancers in men ⁵)	Females and males aged 9-26 years

WHAT YOU NEED TO KNOW

- HPV vaccination protects against infection with oncogenic human papillomaviruses responsible for up to 70% of all cervical cancers
- Offer vaccination to adolescent girls in line with the recommended schedule
- Explain that vaccination is not a substitute for routine cervical screening, which continues to be an important strategy for prevention of cervical cancer

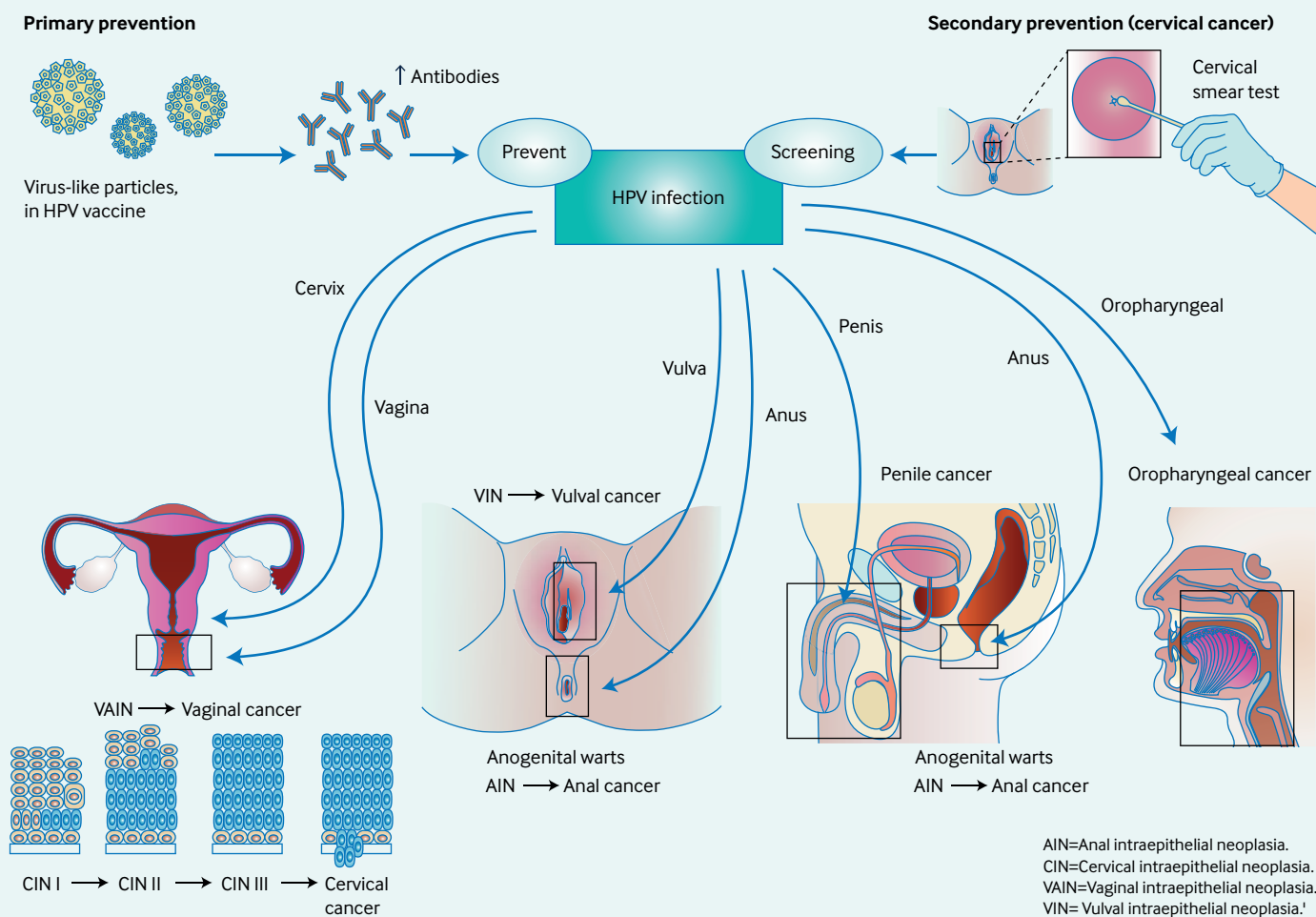


Fig 1 | Sequelae of HPV infection and preventive strategies

in school as part of the NHS childhood immunisation programme.¹⁰ Girls who have missed vaccination can be offered a catch-up vaccination up to 18 years of age.¹⁶ Vaccination for women over 18 years old is not covered by the national programme in the UK, although some countries offer vaccination up to 26 years of age.² The effects of vaccination in women over this age group have not been sufficiently studied.

Some countries, including the United States, Canada, and Australia, also offer vaccination to adolescent boys to prevent HPV related anal and oropharyngeal cancers. Routine vaccination is currently not offered to boys or men in the UK. The effectiveness and feasibility of immunisation of adolescent boys and of men who have sex with men is being studied.¹⁷⁻¹⁹

Inform about the vaccination schedule

Refer to national guidelines in planning the vaccination schedule for your patient.

Initially, the HPV vaccine was given as three doses (at 0, 2, and 6 months), but recent randomised controlled trials show that it is as effective when given in two doses (0 and 6 months) in 9-14 year olds because younger adolescents mount a higher immune response.^{6,20} The vaccine is administered as intramuscular injections at least six months (and no longer than two years) apart.^{7,8} From the age of 15 years, patients should receive the three dose course.²¹ The age of starting the vaccination governs the schedule.

Explain the safety profile of the vaccine

You may highlight to parents that the HPV vaccines contain virus-like particles without any viral DNA and hence are non-infectious. The World Health Organization Global Advisory Committee for Vaccine Safety (GACVS) regularly reviews evidence on safety of HPV vaccines and concluded that both HPV vaccines are safe and that potential benefits outweigh any harms.²²

Commonly reported adverse effects include injection site reactions (pain, swelling, redness), nausea, headache, fever, muscle or joint pain, and syncope.²²⁻²⁴ Syncope is commonly attributed to vagal nerve stimulation, and the risk can be reduced by a 15 minute post-vaccination observation with patients seated or lying down. As with other vaccines, an anaphylactic reaction after HPV vaccination is a contraindication for a subsequent dose.

Suspected cases of complex regional pain syndrome after HPV vaccination were reported in the UK and Japan, which led to suspension of HPV vaccine recommendations in Japan in 2013. In December 2012, the UK Medicines and Healthcare products Regulatory Agency (MHRA) published a safety assessment report that concluded there was insufficient evidence of a causal association with the HPV vaccine.^{9,25} This was backed by reports in 2013 and 2014 by the GACVS and the European Medicines Agency.^{26,27}

What you should do

Offer vaccination as per the recommended immunisation schedule based on the patient's age.

Reinforce that vaccination is not a substitute for routine cervical cancer screening as it does not protect against all HPV subtypes.^{3,4} About 30% of cervical cancer cases are caused by HPV subtypes not covered by the vaccine. Regular cervical smears are still important for early detection and treatment of pre-invasive cervical abnormalities.

Report any side effects on administration of the vaccine, as safety of the vaccine is continuously being monitored. In the UK, the MHRA collects data on vaccine safety via the Yellow Card Scheme, where anyone can report a suspected side effect.²²

You may explain safe sex practices if the patient inquires about ways to minimise risk of infection and cancer.

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Find the full version with references at <http://dx.doi.org/10.1136/bmj.j2730>

HOW PATIENTS WERE INVOLVED WITH THE CREATION OF THIS ARTICLE

In the process of writing this article, we asked around 50 teenage girls, most of whom were yet to receive the vaccine, and their mothers regarding their understanding of HPV vaccination. We noted lack of awareness about the indication for this vaccine, its potential benefits and adverse effects. A patient reviewed this article and emphasised adding information on adverse effects of the vaccine since that is often a major concern among parents.

EDUCATION INTO PRACTICE

- When was the last time you brought up a discussion with a patient regarding vaccination against HPV?
- While discussing HPV vaccination with young girls, would you also discuss “safe sex” practices?
- Are you familiar with the HPV vaccination schedule

FURTHER EDUCATIONAL RESOURCES

Resources for patients

Public Health England. Immunisation: human papillomavirus (hpv). [www.gov.uk/government/collections/immunisation#human-papillomavirus-\(hpv\)](http://www.gov.uk/government/collections/immunisation#human-papillomavirus-(hpv))

NHS Choices. Vaccinations: HPV vaccine. www.nhs.uk/conditions/vaccinations/pages/hpv-human-papillomavirus-vaccine.aspx

Resources for clinicians

Public Health England. Human papillomavirus (HPV): the green book, chapter 18a. www.gov.uk/government/uploads/system/uploads/attachment_data/file/317821/Green_Book_Chapter_18a.pdf

Centers for Disease Control and Prevention. Human Papillomavirus (HPV). www.cdc.gov/hpv/hcp/index.html

BMJ OPINION

Medically fit, awaiting social



“Patient remains medically fit for discharge. Plan: Awaiting social.”

I had written this countless times in elderly patients' notes during my foundation year 1. Going on to work on a consultant geriatrician-led ward for patients with dementia and concurrent physical illness in the centre of a busy district general hospital, my attention was grabbed by the three ways in which this ward was completely different from any ward I had experienced as a student or clinical trainee:

The process:

Typically we would start by obtaining a thorough collateral social history which was matched with clinical observations. Inconsistencies were discussed with the multidisciplinary team, and a long term plan for maximising that person's quality of life was made.

I stopped writing “Awaiting social,” and became part of the process myself. I was no longer just treating patients, I was understanding people.

The pace:

Discharge was never rushed. Nor was it delayed unnecessarily. The key was learning who would benefit from being allowed to settle on the ward to enable full social assessment.

An extra day or two of admission translated to good clinical care when it led to a more accurate assessment of the patient, a better discharge plan, and a longer hospital-free period overall.

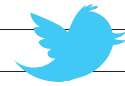
The environment:

Activity rooms—one adjoined by a garden—where patients and relatives could socialise helped replace the reality of being in hospital with a more calming feeling of normality.

Nurses and healthcare assistants who had time to talk to patients led to better understanding of patients' home needs.

Low discharge rates, high staff to patient ratios, a garden in the middle of an acute hospital—this isn't a story you expect to read about in today's NHS. But this ward's approach to dementia care offers the real possibility of reducing readmissions and giving the NHS the return on investment it sorely needs.

Sebastian Walsh, FY2 doctor in the West Midlands



CASE REVIEW Knee pain in a 15 year old boy

A 15 year old boy presented after injuring his left knee while carrying a tray of food at a fast food restaurant. He felt his left knee “wobble” and immediately fell to the floor, unable to bear weight due to pain. On presentation to the emergency department, examination showed a laterally dislocated patella, which was reduced.

After reduction, examination showed a moderate effusion with

some pain on palpation focused around the medial patellofemoral ligament. Range of movement was reduced to an extension-flexion of 0/10/60 degrees. Tests for ligamentous injury were unremarkable and the patient was able to resume weight bearing with the aid of crutches.

He had a Beighton score of 6, where 9 is a maximum score indicating joint laxity, despite having no history

of joint dislocations. His medical history included chronic fatigue syndrome.

On follow-up two weeks later, the patient complained of intermittent locking in the left knee since the injury. On examination there was a joint effusion and a palpable loose body under the patella.

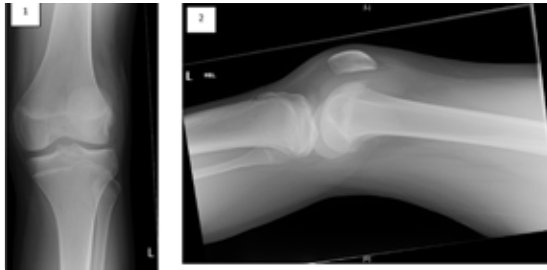


Fig 1 | Anteroposterior (1) and lateral (2) radiographs after patella reduction at initial presentation

- 1 Do the original radiographs (fig 1) show any abnormalities, and what further imaging should be considered for this patient?
- 2 What are the risk factors for this injury?
- 3 What are the management options for this patient?

Submitted by Robert Miller, Oliver Beaumont, and Jakob van Oldenrijck

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SPOT DIAGNOSIS



An unusual appearance on cranial computed tomography

A 65 year old woman had an in-hospital cardiac arrest after hip replacement, and had a prolonged period of hypoxia during resuscitation. Spontaneous circulation was achieved and she was transferred ventilated to intensive care. She remained unconscious and underwent cranial computed tomography (CT). What does the cranial CT show?

Submitted by Rebecca Mortimer, Christopher Bano, and David C Howlett

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SPOT DIAGNOSIS
An unusual appearance on cranial computed tomography
There are changes of cerebral oedema with secondary apparent high density in basal cisterns and fissures—“pseudo-subarachnoid haemorrhage.”
Hypodensity in the basal cisterns (a), interhemispheric fissure (b), and in the right Sylvian fissure (c). There is also prepontine (d) and tentorial apparent high density (e)

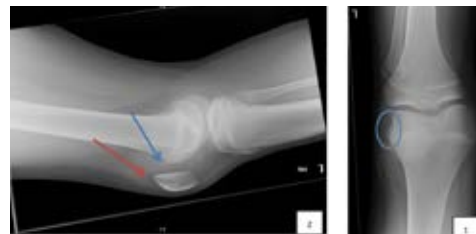


Fig 2: Post reduction radiographs show a large osteochondral fragment that has displaced into the lateral patello-femoral recess. Red: lipoaemathrosis; blue: osteochondral fragment

1 The original radiographs show lipoaemathrosis and an osteochondral fragment (fig 2). Further imaging could include additional plain radiographs, a computed tomography scan to delineate bony injuries, and a magnetic resonance imaging scan for soft tissue injuries.

2 Risk factors for patella dislocation, and therefore osteochondral fractures, include previous patella dislocations, joint laxity or hypermobility, patella alta, trochlea dysplasia, increased tibial tuberosity-trochlear groove size, torsional abnormalities, and a valgus knee.

3 Surgical intervention is required for displaced osteochondral fractures. The main surgical treatments are arthroscopic re-fixation or, if re-fixation is not possible, removal of the osteochondral fragment.

CASE REVIEW Knee pain in a 15 year old boy



You can record CPD points for reading any article. We suggest half an hour to read and reflect on each.

0.5 HOURS



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Caution with tissue adhesives for peri-ocular lacerations

A 3 year old boy sustained a small laceration and bruising to his right brow. He was seen by his general practitioner, who used cyanoacrylate glue for wound closure. Unfortunately, the glue also stuck the upper and lower eyelids together (fig 1). It was only possible to open the lids manually, with eyelash trimming, under general anaesthesia. On review one week later, eye opening was normal and visual acuity was 6/6. Tissue adhesives can be used as an alternative to suturing in primary care. We advise caution in their use in the peri-ocular region,

particularly in young children in their critical period of visual development (birth to around 8 years), as prolonged eyelid closure can lead to amblyopia, requiring orthoptic follow-up and treatment.

Matthew R Edmunds (m.r.edmunds@bham.ac.uk), clinical lecturer in ophthalmology, Soupramanien Sandramouli, consultant ophthalmologist, Wolverhampton Eye Infirmary, New Cross Hospital, Wolverhampton, UK

Parental consent obtained.

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Drug costs in primary care systems

In Switzerland, drugs prescribed in primary care cost each citizen \$171 (£133) per year; in New Zealand the figure is \$23. In the UK it is \$81. Why are there huge differences between similarly developed health systems with universal coverage? A detailed analysis in *CMAJ* (doi:10.1503/cmaj.161481) shows that most were attributable to choices of drugs within therapeutic categories, combined with differences in the prices paid for medicines prescribed.



How long did you say he's got, doctor?

To determine how educated people might interpret information about prognosis in family members, 200 undergraduates were asked to consider a range of non-numerical statements (*BMJ Supp Palliat Care* doi:10.1136/bmjspcare-2017-001331). Even the statement "They will definitely survive," left 7% of respondents in doubt, while at the other end of the scale, "They will definitely not survive" left 19% thinking there might be a chance of survival. Even in this theoretical exercise, people clung more closely to hope than doubt.

Vena cava filters on the wane

Putting a mesh filter in the inferior vena cava to prevent pulmonary embolism after trauma is an idea which never caught on in most of the world, but became common practice in the US. Data from three large American trauma databases covering 2003-14 show an initial slight increase in the use of vena cava filters followed by a steep decline. During this period, incidence of pulmonary embolism in these patients showed no change (*JAMA Surg* doi:10.1001/jamasurg.2017.1018). The rest of the world was right.

Patient centredness in acute trauma

The recent London atrocities have shown again how amazingly effective modern trauma care can be. Patients in situations where they would otherwise have died are even more grateful if the trauma team members come over as competent, efficient, and caring. A qualitative study from the USA happily shows that this is generally the case (*JAMA Surg* doi:10.1001/jamasurg.2017.1088)

Cancer survival improved by patient reporting

In a promising French trial, patients with stable advanced lung cancer were randomised to routine follow-up with scans every 3-6 months or emailing self scoring of symptoms each week to the oncology team that would see them as necessary (*J Natl Cancer Inst* doi:10.1093/jnci/djx029). Median overall survival was 19 months in the patient-reporting group and 12 months in the regular follow-up group. The determining factor seems to have been earlier detection of relapse, patients being more effective than scans.

STIs: history may be bunk

The Los Angeles LGBT Center specialises in caring for lesbian, gay, bisexual, and transgender people. Between 2011 and 2015, over 10 000 men who had sex with men presented to it with sexually transmitted infections, and were asked about previous STIs (*Sex Transm Infect* doi:10.1136/sextrans-2016-052933). When their reported histories were checked against infections on record, only 51%-56% accuracy was found for STIs in the previous year, and 65%-72% accuracy for STIs before that.

Uncool puffers

Asthma UK provides an online forum for adolescents, parents, and adults with asthma, hosted by HealthUnlocked, a system which can be searched for themes without patient identification. By putting in the keywords "teenager AND inhaler," "adolescent AND inhaler," qualitative researchers were able to gain rich insights into the problems of young patients using inhalers (*BMJ Open* doi 10.1136/bmjopen-2016-015245). These included difficulties getting repeat prescriptions, forgetfulness, uncertain technique, and lack of routine. But a pervasive theme was also embarrassment: using an inhaler in front of others was seen by many teenagers with asthma as uncool.

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