Sharing is the future of medicine
What would happen if we tried to reshape medicine in such a way that every output of our encounters with patients generated new and better knowledge? And that this endeavour was openly shared with each person who came to seek our help? How can clinicians help themselves and the people they meet to understand both the options available and the uncertainties surrounding them, and be attentive to discover what is most important to each individual? These are only some aspects of Sharing Medicine, the title of a series I have had the privilege of putting together for JAMA Internal Medicine. In an opening piece, I set out my stall. There will be six more viewpoints over the coming weeks. Please let me know what you think.

The world gets fatter
The Global Burden of Disease studies are a triumph of hard work and Gates funding, and it’s good to see one appear in the NEJM. Sadly they always end up a bit like sausage meat. This article has the title “Health effects of overweight and obesity in 195 countries over 25 years.” Using the unsatisfactory measurement called the body mass index, recorded with varying degrees of accuracy and completeness in these 195 countries, the study quantifies the upward trend in overweight and obesity across the world. It also shows that this trend is most obvious in children and adolescents, which is alarming because we can only guess at the long term consequences. And this is associated with various increases in classes of condition and kinds of mortality. But context is everything, and I would love to know more about the spread of effects in associations between specific conditions and levels of BMI in different countries. There is also very limited stratification of effect by age and sex for these individual conditions. This is not a criticism of the authors, rather a general criticism of papers that try to summarise a vast array of heterogeneous data. Such attempts lead to modging. The antidote to modging is to go to the data website, inspect each piece of meat entering the sausage factory, and reach one’s own conclusions. But there are so many other ways to spend a sunny weekend.

Non-steroidal anti-inflammatories for hip and knee arthritis
Working with Cochrane UK these past three years, I’ve come to the conclusion that no meta-analysis can be perfect, and that meta-analysis by its very nature is a blunt tool for clinical decision making. “Network” meta-analysis is a method of combining data to provide comparisons when head to head randomised trials are lacking or impossible to carry out. I think this one on the effectiveness of non-steroidal anti-inflammatory drugs for the treatment of pain in knee and hip osteoarthritis (which is not a Cochrane) is nearly as good as it gets. Paracetamol alone is unlikely ever to have a useful effect on knee or hip pain: agreed. Diclofenac, the first choice of general practitioners and patients in days gone by, is the most likely to provide the most relief. Such a pity that it quadruples the risk of a cardiovascular event. Next in line are etoricoxib and rofecoxib. These too carry a risk of increasing cardiovascular events, and like all NSAIDs should never be used in people with heart failure. So we go round the houses: should we use paracetamol combined with a weak opioid? How do we share these decisions in the complexity of real life in old age?

Communication in life shortening illness: the agenda
To my delight, JAMA IM has adopted the Sharing Medicine label for a range of articles where sharing with patients is a major theme. Here is a terrific example. It’s a deeply considered exploration of the research agenda for communication between healthcare professionals and patients living with serious illness. If you have any interest in this subject, I’d suggest you download this piece right away. If you have no interest in this subject, download it anyway: we all die of some kind of serious illness, and so do those we love: and a common cause of distress in most cases is poor communication.
Stimulant medication to treat attention-deficit/hyperactivity disorder

Paramala Santosh

A 10 year old boy is restless at school and often disturbs the rest of the class. His mother is concerned that his restlessness interferes with his activities outside school. He is diagnosed with attention-deficit/hyperactivity disorder (ADHD) by a paediatrician and starts treatment with methylphenidate. The boy’s mother is worried because the drug is a stimulant and she fears her son might become addicted to it.

People with ADHD display developmentally inappropriate levels of inattentiveness and impulse control, and can have difficulty moderating activity. Some 5% of people are thought to be affected by the disorder.

What therapeutics are available?

Treatment for ADHD can include drugs, behavioural therapy, or a combination (figure). Stimulant treatments such as methylphenidate and amphetamines are the key drug treatments. They are thought to work by restoring the imbalance in catecholamine levels at the synapse by inhibiting presynaptic dopamine re-uptake, hence increasing the availability of extracellular dopamine.

Stimulant medication is intended to reduce symptoms, boost academic achievement, and improve quality of life, but should be considered as first line treatment in severe cases. Both immediate release and extended release preparations of methylphenidate and amphetamines are available, and each has its practical merits and drawbacks.

WHAT YOU NEED TO KNOW

- In children and young people, stimulants should be the first choice in those with severe ADHD, or when non-pharmacological approaches have failed
- Stimulants are effective in managing ADHD symptoms in adults and should be continued as long as ADHD symptoms have an adverse effect on quality of life
- Stimulants can be used in ADHD with most co-existing disorders such as anxiety, oppositional defiant disorder, conduct disorder, tic disorder, and autistic spectrum disorder

How well do they work?

Treatment responses to stimulants vary according to comorbidity, resulting impairment, and the patient’s age. The patient and their doctor should reach an understanding of what successful treatment would look like to the patient, for example, the ability to remain in class for a lesson.

According to guidelines from the UK National Institute for Health and Care Excellence (NICE), drug treatment in children and young people should be “part of a comprehensive treatment plan that includes psychological, behavioural, and educational advice and intervention.” In children and young people, stimulants should only be considered as a first choice in those with severe ADHD (hyperkinetic disorder).

Evidence about how well the drugs performed in trials is summarised below.

Preschool children

Early and accurate identification of ADHD in children under 5 is essential given the adverse outcomes of the disorder. The response to medication is reduced in preschool children. Meta-analysis of children in this age group who have clinically disruptive behaviour (and are therefore at high risk of ADHD) indicates that there is greater evidence for the effectiveness of interventions that involve parent behaviour training than for treatment with methylphenidate.

Children and young adolescents

The most relevant study to date is the Multimodal Treatment of ADHD (MTA) study, a 14 month randomised clinical trial of intensive behavioural and medication treatment in children aged 7.0–9.9 years with combined ADHD (inattention and hyperactivity/impulsivity) (n=549). The multimodal treatment arms were contrasted with one another and with community intervention (treatment as usual) regarding outcome domains of ADHD symptoms, comorbidities, and core functional impairments. The initial reports from the MTA indicated that drug treatment (mainly methylphenidate) was better than behavioural therapy in managing the symptoms of ADHD, and that the combination of...
stimulant and behavioural therapy did not produce additional improvement for the core ADHD symptoms. However, the combination treatment offered benefit with regards to associated symptoms such as academic achievement, conduct problems, and parental satisfaction. A re-analysis of the MTA data using the International Classification of Diseases, 10th edition (ICD-10) classification of hyperkinetic disorder (HKD, severe ADHD, combined subtype) showed that the effect size of stimulants was substantially greater in those with a diagnosis of HKD compared with those who had non-HKD ADHD. Longitudinal follow-up data over many years suggests that there was a diminution in the superiority of medication once the randomly assigned treatment phase turned into naturalistic follow-up.

Based on effect sizes, meta-analyses of double blind placebo randomised controlled trials in children and adolescents comparing the efficacy of medication in ADHD have found stimulants to be more effective than placebo, bupropion, and atomoxetine. Recent systematic reviews, however, have questioned the value of these effects in children and adolescents. Their findings have generated an intense debate in the field regarding interpretation of the degree of bias involved in trials sponsored by the pharmaceutical industry.

**Adults**

Systematic reviews of treatment in adult ADHD conclude that stimulants are effective in managing ADHD symptoms in adults. A meta-regression of existing clinical trial data to predict the effect size of lisdexamfetamine for the treatment of ADHD in adults yielded an effect size of 1.070. Adult functioning after childhood ADHD is generally worse when symptoms persist into adulthood.
TIPS FOR PATIENTS

- Different preparations are available (eg, 8 hours vs 12 hours) depending on the desired aim of treatment.
- Side effects occurring with stimulant use are usually minor and include decreased appetite, reduced growth, and decreased sleep.
- When starting stimulants, regular height, weight, pulse, and blood pressure monitoring is necessary.
- Treatment can be continued as long as ADHD symptoms adversely affect the patient’s quality of life.

Long term use
The long term use of stimulants has not been rigorously evaluated and remains uncertain. A recent randomised placebo controlled methylphenidate study in boys aged 10-12 and men aged 23-40 measuring changes in cerebral blood flow has suggested age dependent and possibly long lasting effects of methylphenidate on the human dopaminergic system. Further long term studies using a larger sample size are warranted to confirm this result. While ADHD clearly responds to stimulants in the short term, evidence for long term effectiveness is currently limited. Current advice is to continue treatment as long as ADHD symptoms have an adverse effect on quality of life, with regular reviews to see whether the patient can manage without medication.

Co-existing disorders associated with ADHD and response to stimulants
Anxiety, oppositional defiant disorder, or conduct disorder, tics, and depression are frequent comorbidities in ADHD. In children, the most common co-existing disorders are oppositional defiant disorder (50%), followed by conduct disorder (35%), specific learning disorders, anxiety (33%), and depression (33%). More recently, meta-analysis suggests that in children with ADHD, stimulants reduce the risk of anxiety in comparison with placebo and that there is no correlation between the frequency and severity of tics and stimulant use in ADHD. Stimulants are useful even when ADHD co-exists with autism spectrum disorders.

How safe is stimulant use in ADHD?
Common side effects of stimulants include dry mouth, loss of appetite, which is made worse by unpleasant changes in the taste of food and drink, slower growth in height, and sleep problems. Stimulants can reduce height and weight centiles over time. It is advisable not to start stimulants in children who are short or are biologically predisposed to short stature.

- Stimulants are contraindicated in schizophrenia, hyperthyroidism, cardiac arrhythmias, angina pectoris, and glaucoma.
- Stimulants can induce or worsen psychotic experience and should therefore be avoided in those who have psychotic or quasi-psychotic experiences.
- Statistically significant increases in systolic and diastolic blood pressure and heart rate are associated with stimulant treatment in children and adolescents with ADHD. These increases can be clinically significant for a small number of patients. Paediatric patients using ADHD medication should be monitored closely and regularly for heart rate and blood pressure. Rare side effects include QTc interval prolongation, epilepsy, and increased risk of suicide related events.

How are stimulants taken and monitored?
Before starting treatment, undertake a full medical history and physical examination, including vital signs, height, and weight, looking for growth retardation. Keep growth charts pre and post 6 month treatment for young people.

Treatment-free periods (drug holidays) can be used to minimise adverse side effects. Depending on the symptomatology, drug holidays can last a couple of weeks or months and are monitored carefully by the clinician for the appearance of adverse signs or symptoms. This is particularly important in children to observe growth or to allow growth catch up. Careful attention to new symptoms and to worsening of pre-existing psychiatric disorders such as anxiety, depression, and tic disorder is necessary.

How do stimulants compare with other treatments?
The non-stimulant atomoxetine, α-2 agonists clonidine and guanfacine, and the antidepressant bupropion (in adults) are useful for those who do not respond to stimulant treatment. There is only limited evidence from direct comparative clinical trials of the clinical effectiveness of different pharmacological treatments for ADHD. Meta-analyses have been used to compare the individual double blind placebo controlled trials. However, these are complicated by differences in outcome measures, variability in study design, publication, and cultural bias, and reclassification of diagnostic criteria between classification systems, ie, hyperkinetic disorder (ICD-10) vs ADHD (Diagnostic and Statistical Manual of Mental Disorders, 4th edition).

Recent systematic review and meta-analysis of randomised controlled trials of non-pharmacological interventions show a relative lack of efficacy on blinded outcomes in reducing ADHD symptoms. The outcomes showed improved oppositional behaviour in children, but did not appear to improve core ADHD symptoms substantially.

Case outcome
The doctor advised that current evidence suggests it is safe to take methylphenidate and that it does not produce addiction. The primary goal agreed with mother and child was to improve the boy’s school performance, therefore an eight hour preparation of methylphenidate was prescribed, which substantially improved the boy’s restlessness and concentration on review four weeks later. The boy’s school teachers also noticed a major improvement in his behaviour and concentration at school.

Competing interests: None declared.
Lassa fever
Catherine Houlihan, Ron Behrens

Lassa fever is part of a group of conditions known as viral haemorrhagic fevers. Viral haemorrhagic fevers can be caused by viruses from several different families, all of which have the potential to cause disease with haemorrhagic features.1

Who gets it?
Lassa fever is endemic in parts of west Africa, including Sierra Leone, Liberia, Guinea, and Nigeria. There is also evidence of endemicity in neighbouring countries.2

The Centers for Disease Control and Prevention (CDC) has estimated the number of Lassa fever cases per year in west Africa to be between 100 000 and 300 000, with approximately 5000 deaths.3

People of all ages are susceptible and the clinical disease course is variable, ranging from mild non-specific symptoms (such as fever and malaise) to haemorrhagic fever and death. The overall case fatality rate among people infected with Lassa virus is 1%,3 but the observed case fatality among hospitalised patients is reported to be up to 65%-70%.4

WHAT YOU NEED TO KNOW
• Lassa fever is a viral haemorrhagic fever endemic in west Africa
• It is predominantly asymptomatic or results in mild febrile symptoms (about 80% of cases)
• Symptoms of Lassa fever can be difficult to distinguish from malaria and typhoid
• Diagnosis is entirely dependent on an accurate history and an understanding of the geography of the disease, supported by laboratory investigations
• Management involves early recognition of infection, effective isolation and infection control, early initiation of the antiviral drug ribavirin, and supportive care in hospital

WHAT CAUSES IT?
The Lassa virus is a member of the Arenaviridae family, a group of viruses generally associated with rodent-transmitted diseases in humans.5

Transmission of the virus from rodent to human occurs via multiple routes. These include: human ingestion of excreta from an infected rodent; butchering and eating infected rodents; viral exposure to open cuts or sores; or less likely, the inhalation of air contaminated with infected rodent excretions (for example, aerosolisation of rat excreta during sweeping).6,7

Infected rodents are asymptomatic and shed the virus in urine throughout their life.

Human-to-human transmission is less common than rodent-to-human transmission and occurs via direct contact with blood, tissue, secretions, or excretions of an infected individual.8

Can Lassa fever be prevented?
Vaccination
Currently, there are no vaccines for Lassa virus licensed for use in humans and, although some have shown promise, no vaccine candidate has shown enough efficacy in animal models to have entered phase I human studies. The World Health Organization has issued desirable criteria for candidate Lassa virus vaccines (www.who.int/blueprint/what/research-development/Lassa_Virus_Vaccine_TPP.pdf).

Preventing animal-to-human transmission
In endemic areas, avoiding contact with the multimammate rat and its excreta is the main method for primary prevention.

Contact tracing of individuals and post-exposure prophylaxis
People who have travelled with, lived with, or cared for an individual with Lassa fever within the past 21 days and who are asymptomatic should be traced and assessed, and provided with post-exposure prophylaxis with ribavirin if they meet criteria for high risk exposure.9

These criteria can be found on bmj.com.

The WHO has produced guidance on contact tracing for Ebola virus, and this can be followed for Lassa fever.10

Exposure risk
Lassa virus has been detected in the blood, urine, throat swabs, and cerebrospinal fluid of patients.11,12 and sexual transmission has been suggested.13 Although there is little evidence, it has been suspected that patients can excrete virus in urine for between three and nine weeks after disease onset, and in semen for up to three months; thus, it has been recommended that sexual intercourse should be avoided until three months after recovery.1
If exposure to body fluids from a patient with suspected infection has occurred, the person should immediately wash affected skin surfaces with soap and water, and irrigate mucous membranes with copious amounts of water. The patient’s home and any personal belongings that could have been contaminated (such as clothes, linens, eating utensils, and medical material) should be appropriately disinfected (such as sprayed with 0.5% chlorine solution in epidemic areas) or disposed of by incineration. Safe burial practices are essential but are not always culturally accepted, and this continues to be a challenge.

How is Lassa fever diagnosed?
Diagnosis of Lassa fever is based on clinical suspicion, history, and physical examination, with laboratory testing to confirm diagnosis. Early suspicion of exposure, and rapid testing to identify cases of Lassa fever are critical to the management of the infection and prevention of onward transmission.

History
In non-endemic countries, cases are likely to be those returning from travel or work in endemic areas; therefore, up-to-date maps of areas where there is current Lassa transmission are essential. Promed is a useful resource for up-to-date notifications internationally (www.promedmail.org/).

What are the symptoms and signs?
Lassa fever can present in multiple different ways, but is asymptomatic or offers mild symptoms (including fever, malaise, headache, and chest pain) in about 80% of cases. Hearing loss or impairment is a unique sign that may be useful for diagnosis. It was shown to occur in around 29% of 49 acutely febrile patients with confirmed Lassa fever in Sierra Leone. A reduced Glasgow Coma Scale score or seizures may indicate Lassa fever encephalopathy.

In late presentation or deterioration, bleeding (17%) and effusions (3%) have been reported, the latter being linked to proteinuria.

Initial investigations
Individuals admitted with fever and recent (within 21 days) travel to an endemic or epidemic area for Lassa fever should be assessed according to national protocols. The initial investigation in all suspected patients should be reverse transcription-polymerase chain reaction (RT-PCR) for Lassa virus. The highest viraemia occurs four to nine days after the onset of symptoms. Serological testing using IgM enzyme linked immunosorbent assay (ELISA) should also be carried out. IgM ELISA has 88% sensitivity and 90% specificity for acute infection.

If the initial laboratory investigations are negative and clinical suspicion remains high, repeating the laboratory investigations after 24 hours could be considered.

Lassa fever is usually co-endemic with malaria and typhoid; therefore, a rapid diagnostic test for malaria should be carried out immediately, along with blood cultures for typhoid. If exposure to body fluids from a patient with suspected infection has occurred, the person should immediately wash affected skin surfaces with soap and water, and irrigate mucous membranes with copious amounts of water. The patient’s home and any personal belongings that could have been contaminated (such as clothes, linens, eating utensils, and medical material) should be appropriately disinfected (such as sprayed with 0.5% chlorine solution in epidemic areas) or disposed of by incineration. Safe burial practices are essential but are not always culturally accepted, and this continues to be a challenge.

How is Lassa fever managed?
Management approach
The mainstay of treatment is early recognition of infection coupled with effective isolation, early initiation of the antiviral drug ribavirin, and best available supportive care in a hospital setting (see infographic for details).

Isolation and personal protective equipment
If infection is suspected, the patient should be isolated, and all healthcare workers in contact with the patient should wear personal protective equipment. The WHO, CDC, and UK Department of Health have produced detailed guidance on personal protective equipment for viral haemorrhagic fevers, including Ebola, and these should be followed for Lassa fever. Antiviral treatment
In the treatment of Lassa fever, intravenous ribavirin has been shown to reduce mortality from 55% to 5% if administered within the first six days of illness. However, there has been only one published trial of ribavirin in treating Lassa fever in humans, which had limited testing of dose. Side effects include haemolytic anaemia and infusion-related reactions such as rigors. When used as post-exposure prophylaxis, side effects, particularly at the dose required to achieve theoretical efficacy, may be severe and often leads to poor adherence with treatment. 

Symptom management
Pain and fever should be managed with a simple analgesic/antipyretic such as paracetamol. An opioid analgesic can be used if pain is severe, but non-steroidal anti-inflammatory drugs including aspirin should be avoided because of their associated increased risk of bleeding.

Bleeding is seen in around 17% of hospitalised patients with Lassa fever, although in one large study Lassa fever was identified in 74% of patients who were admitted to a hospital in Sierra Leone with bleeding. Thrombocytopenia should be corrected with platelet transfusion if there is bleeding. Coagulation deficits are uncommon but should be corrected with blood products (such as fresh frozen plasma, cryoprecipitate) as necessary. Blood transfusion is reserved for patients who are anaemic and who have ongoing bleeding.

Intravenous fluid and electrolyte management
Diarrhoea is experienced during the course of the illness in about 50% of cases. Patients with significant diarrhoea should have regular assessment of their electrolytes, with replacement provided as necessary.

What is the prognosis?
The overall death rate from Lassa fever is around 1%. Among hospitalised patients, the case fatality rate has been quoted as between 15% and 70%, with higher numbers reported during large outbreaks (50%) or in patients presenting to a Lassa fever hospital with a positive Lassa virus antigen test (65%-70%).

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Find the full version with references at http://dx.doi.org/10.1136/bmj.j2986
Managing suspected Lassa fever

Effective management of Lassa fever involves early recognition of infection, effective isolation and infection control, early initiation of the antiviral drug ribavirin, and supportive care in hospital.

### Containment

**Isolation**
Patients with suspected or confirmed infection should be isolated to prevent transmission.

**Infection control**
All healthcare workers in contact with the patient should wear personal protective equipment (PPE).

**Blood samples**
Sample collection, packaging, and transport should be carried out according to national protocols.

**Contact tracing**
Identify patient’s contacts within the last 21 days for monitoring and/or prophylaxis.

### Treatment

**Intravenous ribavirin**
Intravenous ribavirin may reduce mortality if administered within the first six days of illness.

**Analgesia and antipyretics**
- **Paracetamol**
  - Pain and fever should be managed with an analgesic/antipyretic
- **Morphine**
  - Opioid analgesia (e.g., morphine) can be used if pain is severe
- **NSAIDs**
  - Avoid non-steroidal anti-inflammatory drugs, due to increased risk of bleeding

**Bleeding**
- **Thrombocytopenia**
  - Correct with platelet transfusion if there is bleeding
- **Coagulation deficits**
  - Correct with blood products (e.g., frozen plasma, cryoprecipitate)

**Anaemia**
- **Blood transfusion** is reserved for anaemic patients with ongoing bleeding

**Encephalopathy and seizure**
- **Encephalopathy**
  - Quite common among those who present after more than six days of symptoms.
  - Specific encephalopathy symptoms (e.g., seizures) should be managed with standard care (e.g., anticonvulsant) in accordance with local protocols and availability.

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Disclaimer: This infographic is not a validated clinical decision aid. This information is provided without any representations, conditions or warranties that it is accurate or up to date. BMJ and its licensors assume no responsibility for any aspect of treatment administered with the aid of this information. Any reliance placed on this information is strictly at the user’s own risk. For the full disclaimer wording see BMJ’s terms and conditions: http://www.bmj.com/company/legal-information/
Recently I was invited to take part in a session called “Toward a shared culture of health: enriching and charting the patient-clinician relationship.”

My team and I found it difficult to overcome the tendency to frame the solutions to problems with clinical encounters in terms that fall either on the side of the clinician (as empathy) or on the side of the patient (as empowerment). On one hand, there’s an almost infinite reliance on the medical curriculum to change the way clinicians communicate with patients. On the other, it’s increasingly common to expect the patient to “break the ice” and ask their clinicians the right questions, and use their time wisely.

Something was missing, the “in-betweeness”: how do we make sense of the interaction itself?

In this context I came up with the idea of “mini-biographies,” brief (100-200 word) self descriptions of each patient and doctor—accessed before clinical encounters. These could contain information that goes beyond formal qualifications or professional achievements and include hobbies, favourite things, or even a quote from a book.

It was observed that some doctors might be reluctant to disclose such information because they value a degree of professional distance. Patients, however, can feel routinely ignored by health professionals—as was revealed by the massive popularity of the #HelloMyNameIs campaign initiated by terminally ill Kate Granger, whose simple aim was to encourage healthcare professionals to introduce themselves. If knowing each other’s names improves interaction, having access to a mini-biog before the clinical encounter could allow for discussions that go beyond the identification of a medical problem and the definition of a course of treatment. More specifically, a biog could provide conversational cues for the doctor to explore aspects of the patient’s life in an un-invasive way, for the sake of a diagnosis and a treatment plan that is truly “patient centred.”

Cristian R Montenegro, PhD student, Department of Methodology, London School of Economics and Political Sciences

Improving interactions between clinicians and patients

As a junior in this world of scholarship, I am amazed at the conflict and contests that take place—from which diagnostic test is superior to which intervention strategy is best. Everyone disagrees, and the disagreements can be hostile. I’ve observed that the same debates are repeated with no real consensus as to the right way forward. Every speaker has been in the game for a while and is regarded as an expert or leader in their particular area. I have to admit that this notion is not ideal. Length of time studying a subject may not necessarily correlate with expertise, particularly at a time when learning is moving so rapidly.

If we take technology as an example, school learners today are more in tune with technology than older people. And their ability to learn and communicate online now surpasses that of many older people too. I feel outdated myself despite being born in the 1980s, which has been deemed the beginning of the digital native era.

There is no single expert or leader in my view. In fact, now that the world is so connected, I recognise the vast number of individuals contributing in their own way. That is what academia should focus more on: recognising the increasing number of contributions and different thought approaches to subjects. Yet too often academia suffers from a degree of rigidity and control, which hinders this recognition from occurring.

I hope that as I continue on we can take steps forward in academia in this regard. Research exchanges are spoken about but rarely acted upon. As the world is now more connected than ever, I wonder whether we need to recognise the value of this more. Rather than contesting each other’s input and ideas, we should value them and appreciate the different perspectives that other people can contribute.

Neel Sharma graduated from University of Manchester, currently at Albert Einstein College of Medicine, Montefiore Medical Center, New York
**CASE REVIEW**  
**Severe chest pain in an asthmatic patient**

A 20 year old woman with a history of asthma presented to the emergency department complaining of shortness of breath and sharp pains in her chest and neck. The pain was worse on deep inspiration. She had a cough which produced small amounts of whitish sputum. The patient had had several previous exacerbations of asthma, and recently had not been using her inhalers regularly. On examination, her airway was patent and she had a generalised moderate wheeze in her chest, but no other obvious clinical signs. She could speak in full sentences and had normal oxygen saturations and temperature. She was mildly tachycardic and appeared slightly anxious. Her blood tests showed a mild neutrophilia and elevated C reactive protein.

She was given salbutamol and ipratropium nebulisers. These improved her wheezing, but she still complained of a severe central chest pain. In light of the unresolved chest pain and raised inflammatory markers, a chest radiograph was performed (fig 1).

1. What does this radiograph show?
2. Which common investigation should be avoided in patients with this diagnosis?
3. What are the next steps in management of patients with this diagnosis?

Submitted by Michael Dromey, Chukwuemeka Nwaneri, and David Wilson

Patient consent obtained.

Cite this as: BMJ 2017;358:j2972

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**SPOT DIAGNOSIS**

**A rash localised around the eyes**

A 26 year old woman presented with a sudden rash on the face (left). The previous day, she had had severe vomiting, diarrhoea, and fever, and had been diagnosed with acute viral gastroenteritis. The rash was localised around the eyes. What is the cause of rash?

Submitted by Mitsuhito Ota

Patient consent obtained.

Cite this as: BMJ 2017;358:j3148

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**MINERVA** A wry look at the world of research

**Pseudohernia caused by thoracic motor paralysis**

A 46 year old man presented with a two week history of protrusion of the right abdominal wall. He had suffered from herpes zoster in the corresponding region for four weeks and had been treated with oral valaciclovir for seven days. Examination revealed a non-tender bulge of the right flank with post-inflammatory pigmentation on the right abdomen and back, corresponding to dermatomes T8-10 (figure). The diagnosis was postherpetic abdominal pseudohernia caused by thoracic motor paralysis. The incidence of segmental motor weakness induced by herpes zoster is 3.5% and it has been reported that 0.7% of herpes zoster infections are associated with abdominal wall hernia. The protrusion disappeared with no treatment three months after onset.

Ken Muramatsu; Hideyuki Ujiie (h-ujie@med.hokudai.ac.jp); Hiroshi Shimizu, Department of dermatology, Hokkaido University Graduate School of Medicine, Sapporo, Japan

Patient consent obtained.

Cite this as: BMJ 2017;358:j2786

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**Falls prediction scores might not predict falls**

In the busy emergency department of a major metropolitan adult tertiary hospital in Perth, Western Australia, patients aged over 65 who were considered fit to discharge home were assessed for their future risk of falls using the Falls Risk for Older Persons Community Setting Screening Tool and the Two-Item Screening Tool (Emerg Med J doi:10.1136/emermed-2016-206233). Just over a third of the patients who had experienced a previous fall, but for them and for those who had not, these tools were little better than the toss of a coin in predicting falls within the next six months.

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**Strokes at unsocial hours**

Acute stroke management needs thrombectomy teams, to be available night and day. Recent randomised controlled trials have shown the benefit of mechanical clot retrieval for anterior circulation large vessel occlusion, and some US hospitals have set up services to provide this. But a survey of 10 of them reveals that most eligible patients arrive outside normal work hours, when they are kept waiting on average 52 minutes longer than during work hours (J NeuroInterv Surg doi:10.1136/neurintsurg-2017-013147). Providing a rapid thrombectomy service every day and at all times in the UK might be a logistical challenge.

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**Sectioning across sections of England**

Patterns of variation in compulsory admission under the Mental Health Act in the English NHS can be tracked using the Mental Health Minimum Data Set. An analysis of data from 2010 to 2011 shows a wide range of geographical variation, in part explained by a higher rate of admission in areas of socioeconomic deprivation or with more non-white residents (Lancet Psychiatry doi:10.1016/S2215-0366(17)30207-9). Black patients were almost three times more likely to be admitted compulsorily than were white patients (odds ratio 2.94, 95% confidence interval 2.90-2.98).

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**Urinary incontinence in sportswomen**

A survey of elite Portuguese female athletes achieved a laudable response rate of 92%, allowing the investigators to compare the athletes’ rates of urinary incontinence with those of matched controls. Although these agile young people had an average age of 19, their rates of urinary incontinence were already three times those of their less sporty peers (Br J Sports Med doi:10.1136/bjsports-2017-097587).

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**Coping with multiple sclerosis**

Multiple sclerosis is a hard condition to cope with, involving uncertainty, deterioration, and a range of hidden as well as overt disabilities. The coping strategies of 135 patients with multiple sclerosis from a large centre in Sardinia were compared with those of healthy controls (BMJ Support Palliat Care doi:10.1136/bmjspcare-2017-001324). Sadly, aspects such as social support and problem solving tend to deteriorate with duration of disease, independently of severity. Patients who use avoidance strategies tended to have the worst functional status.

Cite this as: BMJ 2017;358:j3258

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**Taking blood pressure meds and outcomes**

Patients who take their medication in trials usually do better than those who don’t, even if what they are taking is placebo. Among 155 597 older Medicare beneficiaries newly started on blood pressure lowering agents, about 40% were found to be taking them less than 80% of the time (J Am Heart Assoc doi:10.1161/JAHA.117.006056). During a follow-up of 5.8 years, these “non-adherent” patients had more than twice the risk of a composite outcome that included a first incident of fatal/non-fatal acute myocardial infarction, ischaemic heart disease, stroke/transient ischaemic attack, and heart failure.

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MINERVA is open for submissions of intriguing cases with an educational message that are of interest to a general medical audience. Submit pictures via our online editorial office (ScholarOne). Please provide no more than 100 words to explain the image, and send the patient’s signed consent to publication. We need written consent from every patient, parent or next of kin, whether or not the patient can be identified.