E1 - Effective and efficient lifelong learning for quality improvement

1. Introductions
2. Presentations: - The future of healthcare professional education (Kieran)
   - Clinical Decision Support tools in medical education (Klara)
   - BMJ Journal (Jess)

1. Small group session
2. Feedback to the group
3. What can I do?
The future of healthcare professional education
The future of healthcare - change

- More primary care
- More accessible care
- Chronic disease management
- New and emerging infectious diseases
- Ageing population
- Interprofessional teamwork and care
- Patient safety
- Quality
- Cost control
- Knowledge explosion
- Technology explosion
- Era of continuous change
Healthcare professional education

- Needs to change also
- Is it changing fast enough?
  - Is it
    - Tertiary care or primary care?
    - Ivory tower or on the ground?
    - Uniprofessional or interdisciplinary?
- Is it aligned with medical workforce and population needs?
Changes

- Online learning
- Simulation
- Assessment
- Value for money
- Quality improvement
Online learning

- Will be transformative

- Many advantages
  - Learn at a time and place that suits you
  - Interact with material in a variety of ways
  - Pace of development: fast and innovative
  - Just in time learning
  - Engage with a community of learners online
Online learning

- Online learning is as effective as traditional face-to-face learning
- Real advantages - convenience and cost effectiveness
- You don’t need
  - Trainer accommodation, travel, subsistence
  - Learner accommodation, travel, subsistence
  - Classrooms
  - Equipment
  - Off-the-job time and
  - Print costs
Online learning

• Just in time (clinical review with a quiz)
• Interactive case histories – pre-test, cases, and post-test)
• Read, reflect, respond
• Multiple choice
• Multimedia – podcasts, videos
• Insightful user reviews and star ratings
Future of online learning?

- Multimedia
- Short
- Chunked up
- Game based
- Mobile
- Achieve more in less time
Content types - practical application of knowledge

- Ask an expert
- How to…
- The patient with…
- Hospital presentations
- Procedures
- Crowd-sourced Q&A
- Clinics in
- Survival guide and
- Common bleeps
Learner at the centre

- Search
- Discoverability
- Star ratings
- User reviews
In the future learning will happen in teams

- Past? Uniprofessional silos
- Future?
- Learning in interdisciplinary teams
  – simulations
- Simulation will transform the way medical education is delivered
  - Interact with realistic scenarios
  - Learn clinical and communication skills
  - Practice, practice, practice
  - Get things wrong without harming patients
  - Get things wrong without affecting their self-confidence
Medical education - too content-based?

“Education is not the filling of a pail, but the lighting of a fire” – Yeats

- Problem-based learning
  - Solving clinical dilemmas
  - Small teams
  - Facilitated by expert

- Learn the answers to common clinical dilemmas . . . and learn problem solving skills and clinical decision making skills at the same time
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How curricula are delivered face to face - change

- Lectures of the future
  - Shorter
  - Interactive
  - Continual communication between teacher and learner
- More time for questions
- Audience polls
- Co-create notes
- Mobile phones encouraged
- Lectures online
Blended learning

- Past - single format - lectures
- Future - different formats - different outcomes
  - Learning resources - applied knowledge
  - Interactive case histories - problem solving skills
  - Simulation based resources - attitudes and behaviours
  - Face to face education will continue
Assessment in medical education

- Past – tests of recall of academic knowledge
- Today tests must be
  - Fair
  - Valid
  - Reliable
  - Applied knowledge
  - Problem-solving and procedural skills
  - Actual practice
Medical education - value for money?

$100 billion spent annually on healthcare professional education worldwide

Value for money will come from:
- E-learning (saving money on everything that goes with face to face education)
- Inter-professional education
- Sharing resources between institutions and countries
Purpose of medical education

Clinical quality improvement

Patient safety

Improved outcomes
Future of healthcare professional education

“The pursuit, production, dissemination, and preservation of knowledge are the central activities of a civilization. Knowledge is social memory, a connection to the past; and it is social hope, an investment in the future. The ability to create knowledge and put it to use is the adaptive characteristic of humans. It is how we reproduce ourselves as social beings and how we change - how we keep our feet on the ground and our heads in the clouds”

Louis Menand
References


References


Clinical decision support tools in medical education

Klara Brunnhuber
14th April 2016
Objective: To establish the usage and rating of key evidence-based medicine resources by geographical area

b. Journals
c. EBM resources: BMJ Clinical Evidence, Cochrane Library, JAMAevidence
d. Clinical decision support tools: BMJ Best Practice, Dynamed, Clinical Key, UpToDate
## Response by Region vs Profession

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4. How do you use each of these resources - Overview

*Bases limited to respondents who use each resource*

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<tr>
<th>Resource</th>
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<th>For research/academic purposes</th>
<th>For continuing professional development/education purposes</th>
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<td>Cochrane</td>
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<td>JAMA Evidence</td>
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<td>Medline</td>
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<td>BMJ Best Practice</td>
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<td>Dynamed</td>
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<td>National and/or local guidelines</td>
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<td>Google Scholar</td>
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</table>
Why are CDS tools used for education?

- Preparing medical students for clinical practice
- Increasing confidence of junior healthcare professionals in their clinical decisions
- Supporting traditional and case-based learning models
- Cost effective way of bridging learning and clinical practice
- Launched in 2009 after 2 years of development with primary and secondary care clinicians

- Fast access to evidence-based answers to trainees’, generalists’ and nurses’ daily clinical questions at the point of care

- Consistent content layout, easy-to-use navigation
1. Teaching and practising clinical thinking, in line with patient journeys and clinical workflows - embedded into local training curricula:
   ○ Prevention
   ○ Initial consultation
   ○ Working diagnosis
   ○ Confirmed diagnosis
   ○ Challenges: No response, allergies, complications, comorbidities etc
   ○ Follow up
Assessment of Inflamed Joint

**Summary**

Inflamed joints are a common term for several conditions that manifest as joint pain, swelling, and stiffness, with varying degrees of functional impairment. These diseases can be broadly categorized as:

- **Infectious arthritis**
- **Immune-mediated arthritis**
- **Non-infectious and non-immune-mediated inflammatory arthritis**
- **Rheumatic arthritis**
- **Neoplastic arthritis**
- **Degenerative arthritis**

In cases of pain and swelling in a single joint, acute infection is a relatively common cause - one that can result in rapid and serious soft-tissue damage. In contrast, the setting of patients with inflammation of multiple joints tend to have disorders of chronic duration. The prognosis is good for those who can contract with nearly half of such patients undergoing remissions requiring no pharmacological therapy on follow-up at 1 year. A multinational collaborative study on unexplained persistent inflammatory arthritis summarises the diagnostic approach to the problem quite succinctly. [1](#)

**Differential diagnosis**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Category</th>
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<tr>
<td><strong>Common</strong></td>
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<td>Severe non-gonococcal arthritis</td>
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<td>Gonococcal arthritis</td>
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<td>Rheumatoid arthritis</td>
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<td>Osteitis</td>
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<td><strong>Uncommon</strong></td>
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<td>Infectious infections</td>
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<td>Psoriatic arthritis</td>
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<td>Lyme disease</td>
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<td>Sjögren’s syndrome</td>
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<td>Alcoholic hepatitis</td>
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<tr>
<td>Neurosyphilis</td>
<td></td>
</tr>
<tr>
<td>Systemic lupus erythematosus (SLE)</td>
<td></td>
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<tr>
<td>Acute interstitial lung edema</td>
<td></td>
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<tr>
<td>Osteochondritis</td>
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<tr>
<td>Seronegative</td>
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<tr>
<td>Seropositive</td>
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</tr>
</tbody>
</table>

**History & exam**

- **Key factors**
  - Active symmetric arthritis lasting >6 weeks
  - Age 50 to 55 years
  - Female sex
  - Joint pain
  - Joint swelling
  - Rheumatoid nodules

- **Other diagnostic factors**
  - Diagnostic tests
    - 1st tests to order
      - Rheumatoid factor (RF)
      - Anti-cyclic citrullinated peptide (anti-CCP) antibody
      - Radiographs
  - Tests to consider
    - Disease activity score
  - Diagnostic score details
  - Treatment details
    - Acute
      - Mild or moderate disease activity at initial presentation: not pregnant/planning pregnancy
      - DMARD
      - Corticosteroids
      - NSAID
      - High disease activity at initial

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**Rheumatoid arthritis**

Last updated: Jun 25, 2013

**Highlights**

- **Basics**
- **Prevention**
- **Diagnosis**
- **Treatment**
- **Follow Up**
- **Resources**

**Summary**

Rheumatoid arthritis (RA) is an autoimmune inflammatory disease that primarily affects joints and can cause significant disability. The disease is characterized by inflammation of the synovial lining of joints, leading to pain, swelling, and stiffness. RA is a chronic, progressive disease that can cause permanent joint damage if left untreated. The disease affects both men and women, with the majority of cases occurring in women of middle age. RA can sometimes be triggered by certain factors, such as genetic predisposition, environmental factors, and viral infections. However, the exact cause of RA is not fully understood. The diagnosis of RA is typically made through a combination of symptoms, physical examination, and laboratory tests. Early diagnosis and treatment are crucial in managing RA and preventing joint damage. While there is no cure for RA, effective treatments are available to help manage symptoms and slow disease progression.
Monitoring

Follow-up for TIA hinges on continued attention to modification of risk factors including BP control to a long-term goal of <140/90 mmHg and smoking cessation. [24] [54]

Patient instructions

It is critical to emphasise to a patient who has had a TIA the importance of immediate return to the emergency department if any new neurological symptoms develop and the time-critical nature of modern stroke therapy. A danger of the TIA is that it might cause the patient to believe that stroke symptoms may spontaneously resolve if ignored. Patients and caregivers should be given an understanding of the most common symptoms of stroke such as unilateral weakness or loss of sensation, but also less commonly known presentations such as sudden vision loss, difficulty with speech, or sudden persistent vertigo.

Patients should be encouraged to engage in 30 minutes of moderate-intensity physical activity on 3 to 4 days per week, to make an effort at weight loss, and to ensure only a moderate alcohol intake. Smokers should be strongly advised to stop smoking. [24]

Patients should be given individualised recommendations regarding high-risk activities such as driving, based on their early risk of second stroke.

Complications

- **Complication:** stroke
  - **Timeframe:** variable
  - **Likelihood:** high
  - *see our comprehensive coverage of ischaemic stroke*

  The risk of stroke following TIA is considerable. The post-TIA period reflects a period of high risk, potentially due to unstable plaque, thrombus, or exposed thrombogenic surfaces.

  Probability of second stroke is heavily weighted toward increased risk in the early post-TIA period, with half of the 10% of events, which occur in the 3 months following the initial TIA, occurring in the initial 2 days. [35]

  If a patient is already on first-line therapy, there is a paucity of data to guide the clinician in deciding between continuing or changing to an alternative therapy.

- **Complication:** myocardial infarction
  - **Timeframe:** variable
  - **Likelihood:** medium
  - *see our comprehensive coverage of ST-elevation myocardial infarction*

  The risk of coronary ischaemia after stroke is less than that of a second cerebrovascular event but still significant. This reflects common risk factors and also increased cardiovascular stress after intracranial events.

  The cardiovascular complication rates following TIA are approximately half the rate of those of completed stroke, [89] with the rate of complications in the first 3 months after TIA being in the range of approximately 2% to 3% [55] [89]

Differential diagnosis

<table>
<thead>
<tr>
<th>Condition</th>
<th>Differentiating signs/symptoms</th>
<th>Differentiating tests</th>
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</thead>
</table>
| Hypoglycaemia | - Most commonly seen in a patient who takes hypoglycaemic medications.  
- Can cause syncope, generalised weakness, or confusion, but also is reported to cause mental confusion if old cerebral insults are present. | - Blood glucose <3.33 mmol/L (<60 mg/dL).  
- The distinction is frequently made based on the clinical history. |

Complications

- **Complication:** stroke
  - **Timeframe:** variable
  - **Likelihood:** high
  - *see our comprehensive coverage of ischaemic stroke*

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2. Access: Online and offline; at institution and remotely
3. Print topics
4. Automated usage tracking; time-based certificates; accreditation
## Usage log for: BMJ Admin Demo for 2016-03

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### Process CME hours for: BMJ Admin Demo

1. Select the months you would like to process
2. View any month by clicking on the month title
PDFs of Certificates of Activity for downloading and printing
5. Direct access to related resources

- Utilising the BMJ similarity engine
- Created on the fly, so reflecting the latest articles/modules
- Includes direct links to BMJ Learning, The BMJ and specialists journals
DECIPHERING ACADEMENESE

"To the best of the author's knowledge..." = "We were too lazy to do a real literature search."

"Results were found through direct experimentation." = "We played around with it until it worked."

"The data agreed quite well with the predicted model." = "If you turn the page upside down and squint, it doesn't look too different."

"It should be noted that..." = "Ok, so my experiments weren't perfect. Are you happy now??"

"These results suggest that..." = "If we take a huge leap in reasoning, we can get more mileage out of our data..."

"Future work will focus on..." = "Yes, we know there is a big flaw, but we promise we'll get to it someday."

"...remains an open question." = "We have no clue either."
Countries experiencing Zika virus outbreaks

Transmission
The key transmission route is through bites from infected Aedes mosquitoes.
In the Americas, the main carrier is Aedes aegypti. Aedes albopictus may also be a competent vector.
There is evidence to suggest rare placental or perinatal transmission during delivery.
Probable sexual transmission has been reported
Infection through transfusion of infected blood is a possibility.

Prevention
Pregnant women should avoid travel to outbreak areas.
Bite prevention measures should be used day and night by travellers in outbreak areas:
- Long clothing
- Insect repellent
- Mosquito nets over beds

Symptoms
Symptoms are usually mild and may go unnoticed. Diagnosis should be guided by likely exposures and diagnostic tests.
Incubation 3–12 days
Mild symptoms 2–7 days

Complications
An increase in congenital microcephaly has been reported in areas experiencing Zika virus outbreaks. The association is, as yet, unconfirmed.

Treatment and management
Interim advice from Public Health England

Alternative diagnoses
Consider other infections which may present with similar symptoms:
Dengue
Chikungunya
HIV seroconversion
Measles
Group A streptococci
Rubella
Secondary syphilis
Malaria
Rickettsia
Leptospirosis
Parvovirus
Enterovirus
Let me know if you want to know why I am here.
"There's nothing really wrong with you but I think a little surgery would make us both feel better."
Questions

How is your ongoing education supported?

If you could change one thing about your training and the way we learn what would it be?

How can we meaningfully support the integration of learning and quality improvement in training and for appraisals.