A grayscale photograph of a snowy winter landscape. In the foreground, a wide, snow-covered path leads towards a large, multi-story building with several lit windows. The building is partially obscured by snow-covered trees and bushes. The sky is overcast and grey, with some snow falling or blowing in the air. The overall scene is quiet and serene.

# Introducing guided reading to curriculum – experience from Sri Lanka

**Veranja Liyanapathirana**  
**Visiting Academic**  
**School of Life Sciences**  
**(Dr. Daniel Tonge)**  
**Keele University**



Vasanthi Thevanesam, Faseeha Noordeen, Champa Ratnatunga, Nilanthi Dissanayake, Chandika Gamage,  
Asanka Thennegedara, Veranja Liyanapathirana  
Department of Microbiology,  
Faculty of Medicine,  
University of Peradeniya,  
Sri Lanka

# Setting

- Highly competitive university selection exam
- Students geared to cramming type studying
- Additional coaching in tuition classes – exam oriented
- Majority study in their native language
- English proficiency is relatively low
- Medical courses are taught in English at university

# Setting

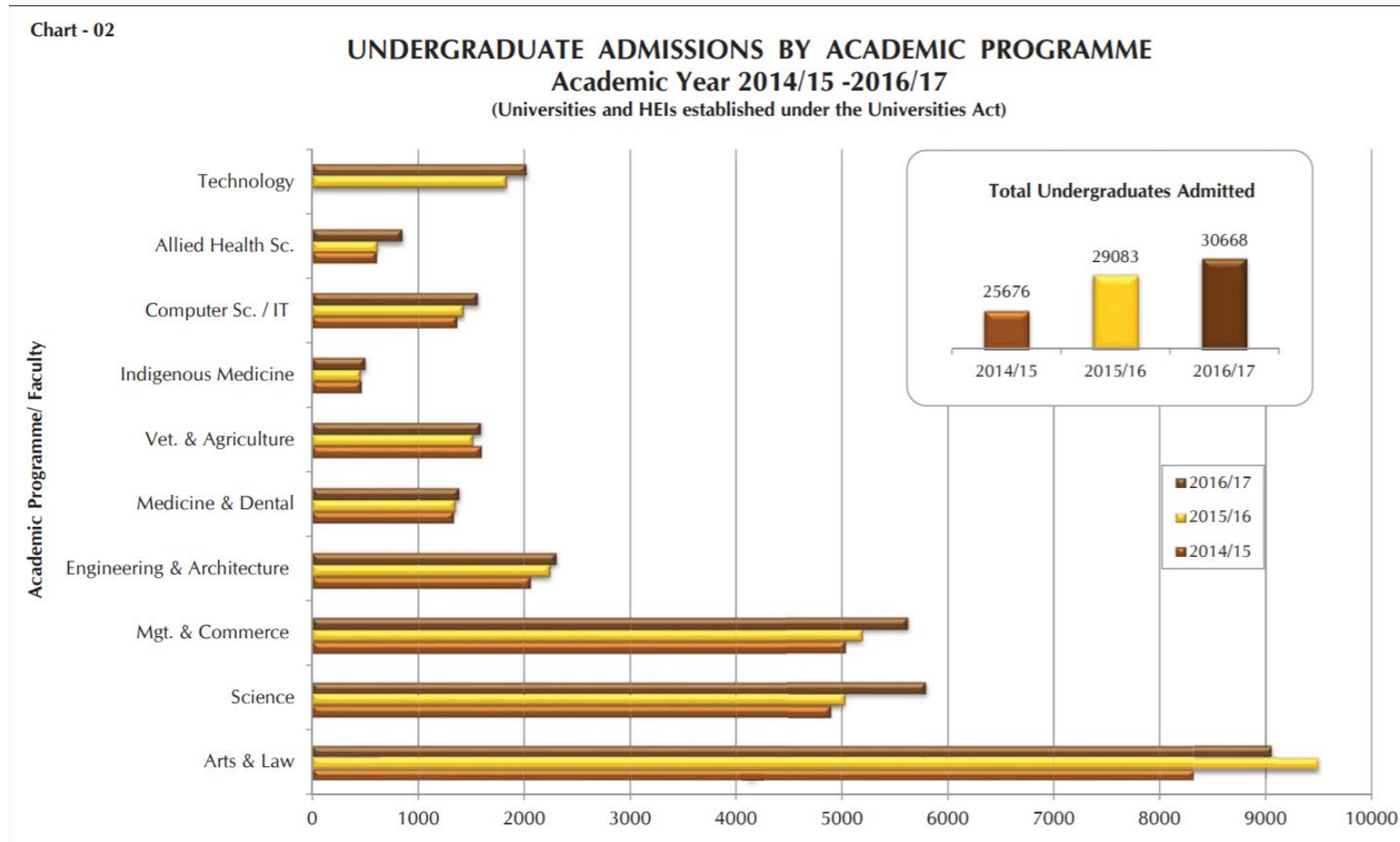
2016 A/L –

160517 qualified for entry

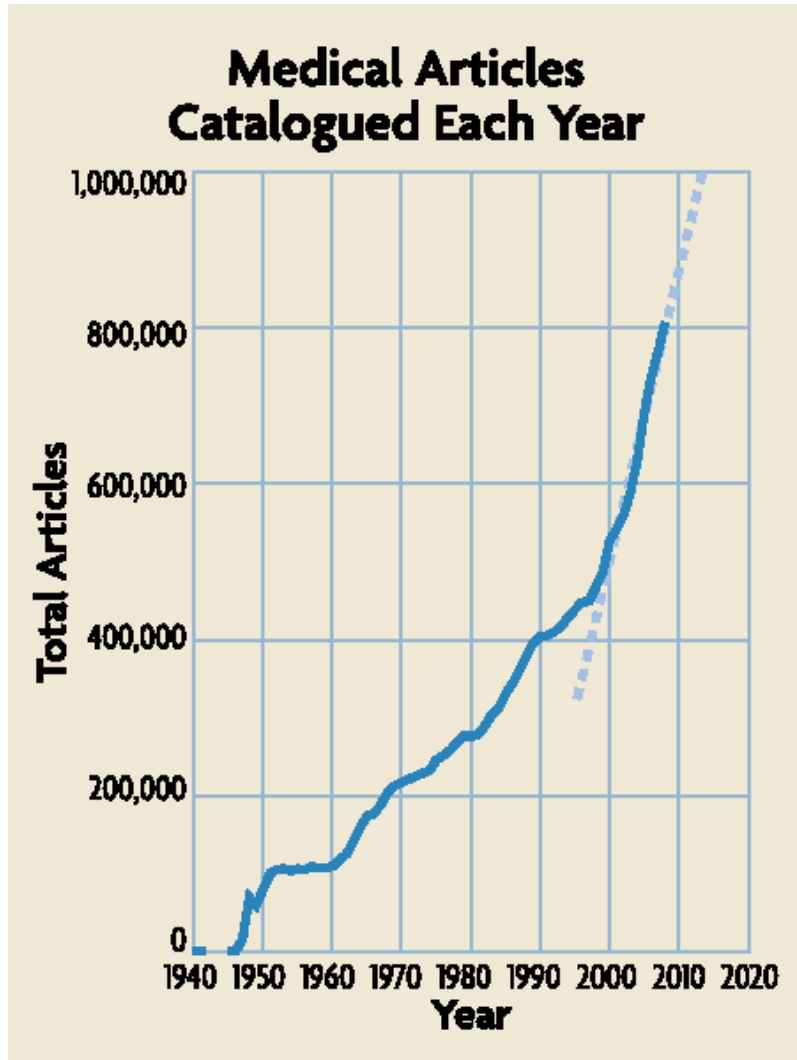
19.10% has gained entry

25876 qualified for entry in biological sciences

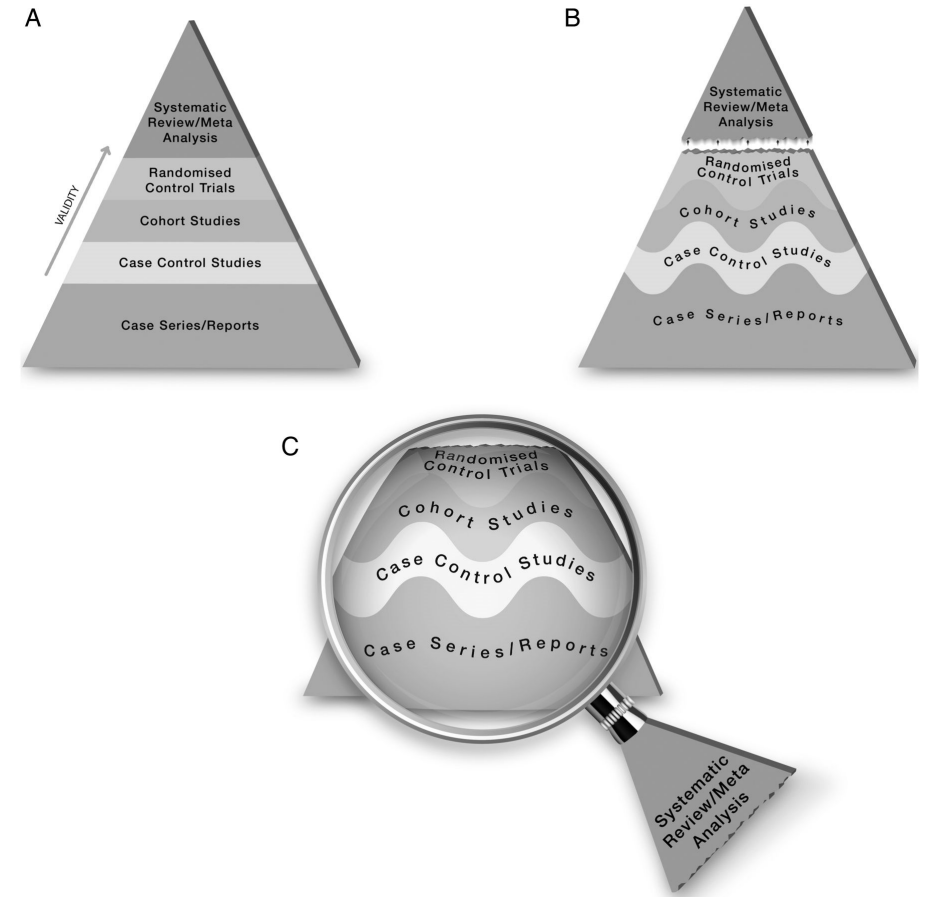
27.18 % have entered (Approx 7000)



# Use of literature and evidence based medicine



Gillam, M., et al (2009)



<http://dx.doi.org/10.1136/ebmed-2016-110401>

# Background + Need = Problems?

- These maybe true for international students and students for whom English is a second language – globally

# Problems

- Difficulty in adjusting to self – directed learning
- Responsibility of learning
- Expect content from lectures
- Low use of scientific literature
- Lack of critical evaluation of scientific text
- Difficulty in creating “life long learners”
- Reliance on sources such as Wikipedia for information
- Other psycho-social issues

# Guided reading of scientific articles





# Medical course at Peradeniya, Sri Lanka

- 5 years of study
- 4 streams of study
- Microbiology – together with parasitology = 2 modules called “infection” (6 credits in total)
- Year 2 Semester 2 = Infection 01
- Year 3 Semester 2 = Infection 02
- Teaching learning activities – lectures, **small group discussions,** practicals, **student seminars**

Highlight the importance of referring to academic literature

# Highlight the importance of referring to academic literature

- Information change over time
- Need to update information
- Awareness about developments in academic publishing
- Need to critique even scientific literature

# Small group discussions

- Article given to students
- Questions posted
- Facilitators discuss the questions
- During class – random subgroups
- Common answers

# Y2S2

- Aetiological agents and diagnosis of childhood diarrhoea

**SGD on Diarrhoeal diseases**  
**10<sup>th</sup> of October 2018**  
**3:30 – 4:30 pm**

**Students are requested to go through the review article on the global problem of childhood diarrhoeal diseases which has been uploaded to MOODLE and relevant chapter/s of microbiology text books to answer the below mentioned questions.**

1. A eight year old child presented to an OPD with a history of watery diarrhoea for 2 days duration.
  - 1.1).What are the likely causative organism/s?
  - 1.2).Would you order any microbiological investigation in this child? Discuss.
  - 1.3). Outline the steps you would take in managing this condition.
  - 1.4). State the preventive methods that you would advice the mother in view of prevention of transmission

Screens 1-2 of 2

- ▶ My profile
- ▼ Current course
  - ▼ 2014\_15
    - ▶ Participants
    - ▶ Badges
    - ▶ General
    - ▶ Lecture notes and/or handouts - Microbiology
    - ▶ Lecture notes and/or handouts - Parasitology
    - ▶ SGD related
    - ▶ Practical related
    - ▶ Topic 5

- ▶ Dr. Rumala Morel
- ▶ Dr. Susiji Wickramasinghe
- ▶ Dr. Kalana Maduwage
- ▶ Dr. Dhilma Atapattu

## SGD related

- ▶ Article to be read for the SGD on GI viruses
- ▶ SGD on Gram negative bacilli

## The global problem of childhood diarrhoeal diseases: emerging strategies in prevention and management

Margaret Mokomane, Ishmael Kasvosve, Emilia de Melo, Jeffrey M. Pernica and David M. Goldfarb

**Abstract:** Acute diarrhoeal diseases remain a leading cause of global morbidity and mortality particularly among young children in resource-limited countries. Recent large studies utilizing case-control design, prospective sampling and more sensitive and broad diagnostic techniques have shed light on particular pathogens of importance and highlighted the previously under recognized impact of these infections on post-acute illness mortality and growth. Vaccination, particularly against rotavirus, has emerged as a key effective means of preventing significant morbidity and mortality from childhood diarrhoeal disease. Other candidate vaccines against leading diarrhoeal pathogens, such as enterotoxigenic *Escherichia coli* and *Shigella* spp., also hold significant promise in further ameliorating the burden of enteric infections in children. Large studies are also currently underway evaluating novel and potential easy-to-implement water, sanitation and hygiene (WASH) preventive strategies. Given the ongoing global burden of this illness, the paucity of new advances in case management over the last several decades remains a challenge. The increasing recognition of post-acute illness mortality and growth impairment has highlighted the need for interventions that go beyond management of dehydration and electrolyte disturbances. The few trials of novel promising interventions such as probiotics have mainly been conducted in high-income settings. Trials of antimicrobials have also been primarily conducted in high-income settings or in travellers from high-income settings. Bloody diarrhoea has been shown to be a poor marker of potentially treatable bacterial enteritis, and rising antimicrobial resistance has also made empiric antimicrobial therapy more challenging in many settings. Novel effective and

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Department of  
Laboratory Sci

## Eight different viral agents in childhood acute gastroenteritis

Derya Bozkurt<sup>1</sup>, Mukadder Ayşe Selimoğlu<sup>1</sup>, Barış Otlu<sup>2</sup>, Ayşe Sandıkkaya<sup>1</sup>

Departments of <sup>1</sup>Pediatrics and <sup>2</sup>Microbiology, İnönü University Faculty of Medicine, Malatya, Turkey.

E-mail: ayseselimoglu@hotmail.com

Received: 27 May 2014, Revised: 11 September 2014, Accepted: 18 November 2014

**SUMMARY:** Bozkurt D, Selimoğlu MA, Otlu B, Sandıkkaya A. Eight different viral agents in childhood acute gastroenteritis. Turk J Pediatr 2015; 57: 68-73.

Viral gastroenteritis is the most frequent cause of acute gastroenteritis (AGE) of childhood. The aim of this study was to determine the prevalence of viral agents including astrovirus, rotavirus, adenovirus, enterovirus, norovirus, parechovirus, Aichivirus and sapovirus in children with AGE in a pediatric Turkish population.

Fecal specimens of 240 children with AGE were investigated by polymerase chain reaction, and viral agents were identified in 131 (54.6%) samples. The distribution of viral agents was as follows: 56 (42.8%) norovirus, 44 (33.6%) rotavirus, 29 (22.1%) enterovirus, 21 (16.0%) adenovirus, 21 (16.0%) parechovirus, 5 (3.8%) sapovirus and 1 (0.8%) Aichivirus. Single and multiple viral agents were detected in 38.8% and 15.8% of patients, respectively. The duration of hospitalization was longer in children with multiple viral

# Y3S2

- Emerging and reemerging infectious diseases

**Y3S2 Infection**  
**SGD on emerging and re-emerging infectious diseases**  
**26/10/2016**  
**3.30 to 4.30 pm**

Students are expected to read the following article and come prepared for a discussion. The article is an open access one and a copy is made available at the book shop for those who need.

Morens DM, Fauci AS. Emerging infectious diseases: threats to human health and global stability. *PLoS Pathog.* 2013;9(7):e1003467. doi:10.1371/journal.ppat.1003467. Epub 2013 Jul 4. PubMed PMID: 23853589; PubMed Central PMCID: PMC3701702

**Y3S2 Infection**  
**SGD on emerging and re-emerging infectious diseases**  
**26/10/2016**  
**3.30 to 4.30 pm**

Read the following article and answer the following questions.

Morens DM, Fauci AS. Emerging infectious diseases: threats to human health and global stability. *PLoS Pathog.* 2013;9(7):e1003467. doi:10.1371/journal.ppat.1003467. Epub 2013 Jul 4. PubMed PMID: 23853589; PubMed Central PMCID: PMC3701702

Initially get students into small groups and give 20 minutes to go through the paper and come up with five things that they learn from the paper. Within the discussion you can take them through the given questions

**Answers to be formulated in the class .**

- 1.1 What is meant by emerging and re emerging infectious diseases?  
Concepts of emergence (new), re-emergence (gone down but appearing again) depending on environmental and geographical conditions
- 1.2 Give 5 examples for emerging and re emerging infectious diseases  
Some diseases that may be emerging may be re-emerging in another region. Include antibiotic resistance as an emerging infection
- 1.3 Discuss the factors influencing the emergence and re-emergence of infections  
Please refer paper

# Student seminar

- Students allocated to a facilitator
- Facilitator selects a case report
- Students meet with the facilitator at two time tabled sessions
- Evaluate the case report in the CARE guidelines (earlier – critique)
- Predatory journal awareness, publication ethics



## Infection 2 Students' Seminar

### Y3S2 2012/2013 Batch

This is to inform you that the student seminar for the above module is scheduled for 05/10/2016 from 2.30 pm onwards.

The seminar would be around a published case report, each of the facilitators will provide you with a case report during your first meeting.

Students are expected to read the given case scenario and additional references to come up with answers to the following questions.

1. What is the infectious disease discussed?
2. Why was this case report published? What is its main thrust?
3. What is the type of presentation of the infectious disease in the patient discussed in the report? Is it a typical clinical presentation for the infectious disease or a rare presentation?
4. How was the given case diagnosed? Critique the method/s used.
5. Discuss how you would apply the knowledge gained from this case report.

Attendance would be marked for the two meetings with facilitators and at the seminar.

Two students need to present from one group. One person could be pre-selected while the other one would be selected at the time of the seminar. The presentation would be strictly restricted to 10 minutes and two power point slides. NO animations are allowed!

### 2012/13 Batch Y3S2 Infection 2

**Discussions:** 21/09/2016 – 4.30 pm to 5.30 pm  
28/09/2016 – 4.30 pm to 5.30 pm

**Seminar:** 05/10/2016 – 2.30 pm to 5.30 pm

| Group                           | Facilitator | Topic   | Venue                            |
|---------------------------------|-------------|---|----------------------------------|
| M/12/001-018 & M/FQ/12/001      | Dr. FN      | Human metapneumovirus associated pneumonia and severe bronchiolitis in a 9-month-old infant admitted to a Sri Lankan hospital | Com. Medicine tutorial room      |
| M/12/019-036 & M/FQ/12/002, 003 | Dr. ND      | Endocarditis due to Vancomycin-Resistant Enterococci: case report and review of the literature                                | Paraclinical Extension tute room |
| M/12/037-054 & M/FQ/12/004, 005 | Dr. CG      | Sick as a dog   | ELTU room 2                      |
| M/12/055-072 & M/FQ/12/006, 007 | Dr. VL      | Fatal leptospirosis and chikungunya co-infection: Do not forget leptospirosis during chikungunya outbreaks                    | ELTU room 3                      |
| M/12/073-090 & M/FQ/12/008, 009 | Dr. YA      | Pancreatitis in scrub typhus: a rare complication   | Biochemistry East lab            |
| M/12/091-108 & M/FQ/12/010, 011 | Dr. SN      | A case of unusual manifestation of dengue fever   | ELTU room 4                      |
| M/12/109-126 & M/FQ/12/012      | Dr. DI      | <i>Toxoplasma gondii</i> pneumonia in immunocompetent subjects: case report and review  | ELTU room 5                      |
| M/12/127-144 & M/11/084         | Dr. SW      | A case report on oral subcutaneous Dirofilaria  | Parasitology Students' Lab       |
| M/12/145-162 & M/FQ/11/009      | Dr. RM      | Swedish traveller with <i>Plasmodium knowlesi</i> malaria after visiting Malaysian Borneo                                     | ELTU room 6                      |
| M/12/163-180 & M/10/064         | Dr. DA      | Human infection with <i>Cryptosporidium felis</i> : Case report and literature review   | ELTU room 7                      |
| M/12/181-199 & M/10/111         | Dr. NB      | Primary laryngeal leishmaniasis: A rare case report   | Biochemistry seminar room        |

# A rare case of hypervirulent *Klebsiella pneumoniae* causing osteomyelitis and liver abscess

Sturm E, Tai A, Lin B, Kwong J, Athan E, Howden BP, Angliss RD, Asaid R, Pollard J. Bilateral osteomyelitis and liver abscess caused by hypervirulent *Klebsiella pneumoniae*- a rare clinical manifestation (case report). *BMC Infect Dis.* 2018 Aug 7;18(1):380. doi: 10.1186/s12879-018-3277-4.



## Patient Details

| Check list                              | Strength   | Weakness   |
|---|--|--|
| Abstract                                | Well summarized, categorized and in a good flow  | Examination findings were not mentioned<br>Outcome as a result of treatment was unclear. |
| Introduction                            | Distinguished clearly infectious manifestations of hypervirulence <i>Klebsiella pneumoniae</i> vs <i>Klebsiella pneumoniae</i> |  |
| Patient information                     | Main concerns and symptoms of patient  | Family, genetic and psychosocial hx were not included                                    |
| Clinical findings and time line         | Clinical findings were well organized  | Time line were not figured or tabled or mentioned clearly; hence difficult to follow up. |
| Diagnosis and therapeutic interventions | All mandatory examinations and investigations were done  | Not mentioned about dose and frequency of treatment                                      |
| Discussion                              | Limitations, relevant medical literature and rationale for the conclusion were described well                                  |  |

Take home message



- Remember that bacterial species may have different virulence properties even within the same species
- Remember the disease spectrum of organisms – (refer to rare diseases when needed)
- Assess for risk factors in history

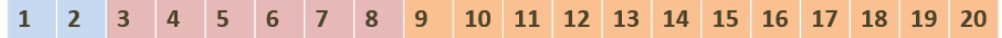
## Presented with,

- gradually worsening B/L leg pain
- night sweats, chills, fever, headache, malaise, productive cough

- No past hx of TB
- No recent travel hx within 2 y
- Non smoker and drinker
- No recent animal contact
- Vaccination up to date



2 weeks



6 week  
Ceftriaxone(IV)

3 months  
Ciprofloxacin(O)

## Investigations:

- CT- B/L tibial lesions (lattice like linear lucencies)
- CT Abdomen- liver Abscess
- High WBC, CRP and ESR
- Left tibial bone biopsy (+) for *K. pneumoniae*
- Whole genome sequencing K1 serotype (ST-23), well recognized hypervirulent strain capable of causing invasive disease

## Treatment

- Responded to
- 6wk IV Ceftriaxone → 3m of Ciprofloxacin (oral)

Not secure | medmoodle.pdn.ac.lk/mod/folder/view.php?id=4095

eMed Home

### ADMINISTRATION

- Folder administration
  - Edit settings
  - Locally assigned roles
  - Permissions
  - Check permissions
  - Filters
  - Logs
  - Backup
  - Restore
- Course administration
- Switch role to...
- My profile settings

### Student seminar presentations

Student seminar presentations

- Group 1 FN.pptx
- Group 2 ND.pptx
- Group 3 CG.pptx
- Group 4 VL.pptx
- Group 5 YA.pptx
- Group 6 SN.pptx
- Group 7 DI.pptx
- Group 8 SW.pptx
- Group 9 RM.pptx

NAVIGATION

# Student Feedback



**Summary of Student Feedback - Infection 1 (Y2S2)**  
**Batch 2014/15**  
**Department of Microbiology**

1. SGDs overall

|   | Lectures        |               |               |
|---|-----------------|---------------|---------------|
|   | No of responses | Mode response | Mean response |
| 1. Provided a useful introduction to the activity | 175             | 5             | 4.52          |
| 2. Guided the discussion or activity effectively  | 175             | 5             | 4.46          |
| 3. Stimulated interest in the subject             | 176             | 5             | 4.32          |
| 4. promoted expression of ideas                   | 175             | 4             | 4.34          |
| 5. Encouraged full participation of the group     | 176             | 5             | 4.26          |
| 6. Clarified doubts                               | 176             | 5             | 4.45          |
| 7. Provided a useful summary                      | 176             | 5             | 4.28          |
| 8. overall the SGD activity was useful            | 174             | 5             | 4.53          |

**Summary of free comments** – SGDs were extremely useful and well liked for better understanding of subject matter, improving writing skills and motivation to learn actively. ‘on time writing’ commended.

**Points to improve** – increase the time allocation for SGDs. 1.5hours suggested. Don’t have >2 sgds on the same day. If multiple SGDs, let the groups stay in the same venue so time is not spent running around between classes. Reduce the size of the groups.

No photos please 😊

## Summary of Student Feedback – Infection -2 (Y3S2)

Batch 2013/14

Department of Microbiology

### 1. SGDs overall

| SGDs overall                                      | Mode | Average | Count |
|---|------|---------|-------|
| 1. Provided a useful introduction to the activity | 5    | 4.2     | 79    |
| 2. Guided the discussion or activity effectively  | 5    | 4.2     | 79    |
| 3. Stimulated interest in the subject             | 5    | 4.0     | 79    |
| 4. promoted expression of ideas                   | 4    | 4.1     | 79    |
| 5. Encouraged full participation of the group     | 4    | 4.0     | 79    |
| 6. Clarified doubts                               | 5    | 4.2     | 79    |
| 7. Provided a useful summary                      | 5    | 4.1     | 79    |
| 8. overall the SGD activity was useful            | 5    | 4.2     | 79    |

**Summary of free comments** – Article based SGDs were not seen as useful.

Objectives and level of content expected were not clear. Understanding articles was difficult. Difficulty in answering clinical questions asked at SGDs and exam. The students seem to find it difficult to bridge the objectives/ lecture fact-based learning to the application based questions. Uncertain what level is expected of them and what level of clinical correlation is necessary.

Points for improvement – Clearer objectives stated in all lectures and SGDs. Students may need more practice at answering questions. Rethink the article-based SGD format –some students may need more help than others to use this as a learning tool. Help groups? |

No photos please 😊

**Summary of Student Feedback – Infection -2 (Y3S2)**  
**Batch 2013/14**  
**Department of Microbiology**

1. Student seminar

| <b>Students seminar</b>                                   | <b>Mode</b> | <b>Average</b> | <b>Count</b> |
|---|-------------|----------------|--------------|
| 1. Objectives were clearly stated                         | 4           | 3.7            | 76           |
| 2.Task was described clearly                              | 4           | 3.7            | 76           |
| 3.Subject material covered was relevant                   | 4           | 3.6            | 76           |
| 4.Provided opportunity to practice skills                 | 4           | 3.8            | 76           |
| 5.Directions were given for further work                  | 5           | 3.6            | 76           |
| 6.Adequate guidance was available throughout the activity | 4           | 3.7            | 76           |
| 7.Students seminar achieved the stated objectives         | 4           | 3.6            | 73           |

**Summary of free comments** - seminars are stressful and it is difficult to gather knowledge about the other topics covered in the seminar.

**Points for improvement** - Consider smaller group parallel presentations where it is less stressful and more students can present

No photos please 😊

Future

# Future?

- Re-phrase objectives of activities
- More Departments need to introduce
- Move to an online environment – more one to one feedback
- Emphasize more – on the need to refer to scientific literature in a background of rapid information turnover

“Critical pedagogy affords students the opportunity to read, write, and learn for themselves--to engage in a culture of questioning that demands far more competence than rote learning and the application of acquired skills”

Giroux, 2010



THANK YOU!

