Universidad Zaragoza

Year : 2019/20

26788 - Learning and improvement of clinical reasoning

Syllabus Information

Academic Year: 2019/20
Subject: 26788 - Learning and improvement of clinical reasoning
Faculty / School: 104 -

Degree: 304 - Degree in Medicine

ECTS: 5.0
Year: 5
Semester: First semester
Subject Type: Optional
Module: ---

1.General information

1.1.Aims of the course

The course will provide a step-by-step description and explanation of the clinical reasoning process, illustrated by clinical examples. This course will be of interest to medical students where clinical reasoning is central. During the course, we will teach tools to maintain medical students' competence in clinical reasoning along with their professional development as healthcare professionals.

1.2.Context and importance of this course in the degree

Clinical reasoning in clinical practice

Health care professionals need to be flexible in their approach to decision-making and ensure continuity of care. The health care professional's ability to provide safe, high quality health care can be dependent on their ability to reason, think and judge, which can be limited by lack of experience (Benner, Hughes, & Sutphen, 2008). Simmons (2010, p. 1155) states that ?clinical reasoning is a complex cognitive process that uses formal and informal thinking strategies to gather and analyse patient information'. This process is reliant on the health care professional using both their intuition and knowledge to influence decision-making for individual client circumstances. The experience and knowledge of the health care professional is an important consideration in the consolidation of clinical reasoning. Simmons (2010) considers this by suggesting that newly qualified nurses, for example, may identify fewer cues, have difficulty identifying complex diagnosis and may not re-evaluate data as often as experienced nurses. This has the potential to have a negative impact on patient care. Hamm (1991, cited in Round, 2001) agrees that the clinical situation and the practitioner's knowledge and clinical experience could impact on the clinical reasoning employed and its efficiency. However, an individual's extensive experience could be irrelevant if faced with a situation that they have not previously been exposed to. Thompson and McCaughan (2002) conclude that a good clinical decision is one that takes into account the current best practices, considers patient preferences and is undertaken by experienced medical students. Teaching clinical reasoning can be difficult to facilitate in an educational setting due to the lack of clinical context. Many of the traditional styles of teaching introduce decision-making processes as a method of ?pattern recognition'. This relies on the health care professional to draw upon past experiences to re-examine them in light of the ?new' clinical scenario (Boyd, 2011, p. 574). The concern with utilising some traditional decision-making processes is the use of ?checklists' to formulate clinical reasoning and decision-making and by doing so fail to apply critical analyses to evaluate outcomes (Boyd, 2011). The use of Clinical Reasoning Learning Situations (CRLS) has been increasingly adopted to address this criticism and to support the clinical teaching of necessary skills required for safe and competent practice. CRLS enables health care professionals to be exposed to clinical reasoning strategies and encourages them to explore the predisposing factors and draw upon interprofessional experience to enhance the decision-making process. This is all carried out with some prepared CRLS so that all issues can be openly explored without the time pressures that medical students face in the clinical setting. At the end medical students will develop their own CRLS.

1.3.Recommendations to take this course

This subject is taught through the University of Zaragoza teaching platform: https://moodle2.unizar.es/add/

It is an online course. It is available for students 24hs per day, the whole first semester of the school year.

It is recommended to select this subject for those students who are in their fifth or sixth year of the medical degree so as they could have previous clinical training experience.

2.Learning goals

2.1.Competences

Completing this course:

CB1 - Students can demonstrate their knowledge and understanding of the clinical reasoning process as part of the basic skills to be used in their internship.

CB2 Students can demonstrate their knowledge and understanding of clinical reasoning biases, heuristics, and some activities to reduce diagnosis error as part of the basic skills to be used in their internship.

CB3- Students can apply their knowledge and skills to their daily work in a professional manner and have competences typically demonstrated through performing different clinical cases and sharing diagnostic and therapeutics scripts for their internship.

CB4 - Students have the ability to gather and interpret relevant data (within the different clinical cases) to inform judgments that include a reflection on relevant differential diagnostic and therapeutic issues on the simulated cases.

CB4 - Students can communicate information, ideas, problems, reflexions and solutions into the different online forums of the course.

CB5 - Students have developed those learning skills necessary to undertake their intership with a high degree of autonomy and competence.

2.2.Learning goals

The course and its expected results respond to the following approaches and objectives:

1. To acquire skills to improve clinical reasoning process in the doctor-patient clinical interview.

2. To train students in the fallibility of their diagnostic process: Reasoning biases and heuristics.

3. To promote attitudes and habits that allow them to detect and reduce cognitive errors in the diagnostic-therapeutic process.

3. To facilitate learning tools and continuous improvement of clinical reasoning along with their diagnostic and therapeutic processes.

4. To build a grounded clinical reasoning method which could help them on their clinical performance.

5. To train the student in the use of the clinical reasoning learning methodology so that they can integrate acquired medical knowledge and clinical experiences in the clinical stage as early and as effectively as possible.

6. To be conscious of "Choosing Wisely" strategies, quaternary prevention strategies to build their personal medical style

2.3.Importance of learning goals

In clinical practice, many medical decisions are complex and are dependent on countless internal and external factors. Therefore it is useful for medical students to follow a formal decision-making tool.

Commonly used tools include the ?Decision Tree' (Round, 2001, p. 110) and the ?Clinical Reasoning Cycle' (Levett-Jones, et al., 2010) These tools allow the health care professional to make choices through a systematic process which considers many clinical predisposing and contributing factors.

Simmons (2010) relates clinical reasoning tools as following a forward chaining process that moves sequentially through a series of logical considerations to end at a final decision. According to Jones (1988), when working through the processes of clinical reasoning the health care professional will identify a specific health problem/care need and the adoption of a clinical reasoning cycle facilitates the 'thinking' behind the clinical management plan. This has been referred by Jones (1988) as ?goal driven' patient care. We reproduce CRLS with the implementation of the cycle.

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

The student must demonstrate that has achieved the expected learning outcomes through the following assessment TASKS in a continuous assessment during the whole course.

There are two different types of chapters in the course :

7 Concept Chapters.

6 Practical Chapters or Clinical Reasoning Learning Scenarios (CRLS).

Systems for assessing the acquisition of competences for Concept Chapters :

1. Multi-choice questions.
2. Essay-type questions.
3. Problem-solving questions on clinical cases
4. Global task: developing their own Clinical Reasoning Learning Clinical case.

Detailed distribution per chapter:

Each chapter lasts for one week.

At the end of each chapter, the student must have participated in the chapter's online forum for discussion forum by answering the discussion questions posted by the teacher. Forum participation will count on the final score.

The student should send a short report on the recommended reading article in each chapter. Students reports will count on the final score.

The student should complete a multiple-choice type test. The cut point to go into the next chapter will be 6/10. The exam has a learning purpose and it can be repeated up to 5 times, keeping the highest score achieved. The test will count on the final score.

Systems for assessing the acquisition of competences Practical Chapters :

The 6 practical chapters are 6 Clinical Reasoning Learning Situation (CRLS).

The cases are designed so that the student shows up her/his clinical reasoning process. The cases are presented in powerpoint format. They are built with Clinical Reasoning Learning Steps.

Students should send their clinical reasoning process of each clinical case in a text document or a power point presentation.

Finally, an final case study must be carried out by the student. Students should build a Clinical Reasoning Learning Case based on their internship.

Each student will prepare the clinical case and send it to the online platform.

They will have a library of final cases of students from previous years for consultation.

At the end of the course, a satisfaction survey will be provided to students to identify areas for improvement for future editions.

The grading system for concept chapters:

Each content is assessed in a range of 1 to 3. Each activity has a weight:

- Self-assessment test of each concept chapter (6%). Total of 42%

- Participation in the forum. It is scored from 1 to 3. (1%). The 7 forums, 7%.

- Article reports. It is scored from 1 to 3. (1%). The 7 items 7%.

- Each practical chapter or clinical case (5%). It is scored from 1 to 3. Total percentage of practical cases 30 %.

- Clinical Reasoning Learning Scenarios based on their internship (14%). It is scored from 1 to 3.

Dates overall evaluation:

Time zone: from 8 to 15 hs, Spain Time zone in Madrid (GMT+2)

First call: January 17, 2020

Second call: September 4, 2020

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as:

- Seven theoretical topics: a clinical reasoning and CRL (Clinical Reasoning Learning) sessions, learning clinical reasoning errors in the process of reasoning, clinical interview, use of diagnostic tests, rational prescribing
- Five clinical cases with CRL session structure.
- End of course work: developing a CRL session with a case from their internship

Teaching-learning methodology:

- Study of materials for each concept chapter.
- The Participation in the discussion forum, reading scientific articles and preparing reports and comments it into the online forum in each chapter.
- Complete a test of 10 questions per chapter (6/10 min).

To perform 5 CRL clinical cases and prepare and present a final case in CRL format. Therefore, to work on clinical cases and promote personal reflection to apply CRL methodology in any clinical case.

Number of Credits ECTS = 5 (150 hours)

- 16 hours per concept chapters: 7 hours to study concepts, 5 hours reading articles, web pages and preparation of reports, 3 hours for online forums, 1 hour for self-assessment test (16 * 7 = 112)
- 2 hours for each of the clinical cases (2 * 5 = 10 hours).
- 28 hours of personal work for the final review of cases from previous years and to design and develop their final Clinical Reasoning Learning Case.

Clinical Reasoning (CR) is a cross competence for any medical-surgical, especially into the medical degree. The most efficient way to acquire this competence is when the specific knowledge of clinical subjects is acquired and this knowledge has to be used in the clinical patient contact through rotations in hospitals and health centers. As soon as the methodology is

used, the greater the benefit for the students to improve their competence in clinical reasoning.

The combination of CR methodology with the acquisition of knowledge allows students to begin to develop their own action scripts for the diagnosis and treatment process. Hence the temporary location should be between 4 and 6-grade year.

The course takes place in the Digital Teaching Ring. The course has 6 theoretical and 5 practical modules. The 5 clinical cases and personal final work of developing a clinical case with ARC methodology (Learning Clinical Reasoning). There is a forum for discussion per module, a required reading per module with a comment and a self-assessment test for each module. It is essential to pass the test and send a summary of the articles in each module to move to the next one. Students must make 5 pre-written clinical cases and submit their own clinical case as a final work.

4.2.Learning tasks

The course includes the following learning tasks:

- Autonomous work and personal study of materials
- Personal Reports on particular scientific papers
- Forum discussions
- CRL sessions: clinical reasoning, learning sessions
- Personal diagnostic and therapeutics script development
- Final CRL case created and performed by the students.

4.3.Syllabus

The course will address the following topics:

- Topic 1. Professor Maria Pilar Astier - pastier@unizar.es
  - Objective: 1. Clinical reasoning: concepts and models of knowledge organization.
  - Start date of this module: September 16, 2019
- Topic 2. Professor Maria Pilar Astier - pastier@unizar.es
  - Objective: 1. Frequent Errors in the clinical reasoning process: Biases and heuristics.
  - Start date of this module: September 23, 2019
- Topic 3. Professor Maria Pilar Astier - pastier@unizar.es
  - Objective 1. To Know and enhance clinical tools to improve clinical reasoning process.
  - Start date of this module: September 30, 2019
- Topic 4. Professor Maria Pilar Astier - pastier@unizar.es
  - Objectives: 1. To know the methodology of the clinical interview. 2. How to properly manage the clinical interview to improve clinical reasoning process.
  - Start date of this module: October 14, 2019
- Topic 5. María Pilar Astier Peña - Email: pastier@unizar.es
  - Objectives: 1. Understand the basic interpretation of diagnostic tests to improve our clinical reasoning process.
  - Start date of this module: October 21, 2019
- Topic 6. Professor María Pilar Astier Peña - Email: pastier@unizar.es
  - Objectives: 1. Develop skills for the reasoning of the treatment decision.
  - Start date of this module: October 28, 2019
- Topic 7. Professor María Pilar Astier Peña - Email: pastier@unizar.es
  - Objectives: 1. Overdiagnosis, overtreatment, overuse in healthcare systems.
  - Start date of this module: November 4, 2019
- SCENARIO No. 1. Professor Maria Teresa Delgado Email: maitedelgadom@gmail.com
  - Objectives: Apply the clinical reasoning process in a sequence considering urinary symptoms
  - Start date of this module: November 11, 2019
- SCENARIO No. 2. Professor Maria Teresa Delgado Email: maitedelgadom@gmail.com
  - Objectives: Apply the clinical reasoning process in a sequence considering Dyspnoea
  - Start date of this module: November 18, 2019
- SCENARIO No. 3. Professor Javier Sangros E-mail: jsangros@unizar.es
  - Objectives: Apply the clinical reasoning process in a sequence considering dizziness
  - Start date of this module: November 25, 2019
- SCENARIO No. 4. Professor Maria Pilar Peña Astier. Email: pastier@unizar.es
  - Objectives: Case to deepen the clinical reasoning of abdominal pain
  - Topics: Clinical Reasoning acute abdominal pain
  - Activities: Answering the questions of the case make learning personal reflection

        - Start date of this module: December 2, 2019
    - SCENARIO No. 5. Professor Maria Pilar Peña Astier. Email: pastier@unizar.es
        - Objectives: Case to deepen on joint pain clinical reasoning versus somatic pain
        - Topics: Clinical Reasoning joints pain versus somatic pain
        - Activities: To answer the questions of a case. To make learning personal reflection
        - Start date of this module: December 9, 2019
    - SCENARIO No. 6. Professor Maria Pilar Peña Astier. Email: pastier@unizar.es
        - Objectives: Case to deepen on headache.
        - Topics: Clinical Reasoning headache presentations
        - Activities: To answer the questions of a case. To make learning personal reflection
        - Start date of this module: December 16, 2019

1. Development of the concepts and practical chapters from 16 September to 20 December 2019

2. Development of a clinical case with practical learning methodology of clinical reasoning from December 21 until January 17, 2020.

4.4.Course planning and calendar

CALENDAR 2019-2020

WEEKS	TASKS
16/09 al 23/09/2019	Module 1: concepts and models in clinical reasoning
23/09 al 30/09/2019	Module 2: clinical reasoning and patient safety
30/9 al 3/10/2019	Module 3: activities to improve clinical reasoning
9/10 al 14/10/2019	LOCAL FESTIVITIES
14/10 al 22/10/2019	Module 4: clinical reasoning in a clinical setting: doctor-patient encounter
21/10 al 29/10/2019	Module 5: clinical reasoning and complementary tests
28/10 al 5/11/2019	Module 6: prudent prescription
4/11 al 12/11/2019	Module 7: Overdiagnosis and overtreatment
11/11 al 19/11/2019	Clinical Reasoning Learning Situation (CRLS) 1
18/11 al 26/11/2019	Clinical Reasoning Learning Situation (CRLS) 2
25/11 al 3/12/2019	Clinical Reasoning Learning Situation (CRLS) 3
2/12 al 10/12/2019	Clinical Reasoning Learning Situation (CRLS) 4
9/12 al 17/12/2019	Clinical Reasoning Learning Situation (CRLS) 5
16/12 to 20/12/2019	Clinical Reasoning Learning Situation (CRLS) 6
20/12/2018 to 17/01/2020	Developing Students' Clinical Reasoning Learning Situation (CRLS).
17/01/2020	Deadline to complete tasks and CRLS.

The subject is organized in 7 theory courses and 6 clinical cases, Clinical Reasoning Learning Situations (CRLS)

Every student has to prepare a final clinical case with clinical reasoning learning methodology.

The subject will start on the 16th of September 2019.

The deadline to send tasks and Final CRLS will be 17th January 2020.

Those who were not able to finish the subject at the deadline will have a second call deadline to send tasks and final CRLS on the 4th September 2020.

FINAL TASK:

Objectives: To create a clinical case explaining the clinical reasoning process that has been followed in the diagnostic tests and an approach to diagnosis and treatment based on a real case from their internship.

Start date of this task: December 20, 2019

DATE OF ENDING JANUARY 17 2020

DATE OF the SECOND CALL FOR SEPTEMBER 4 2020

The whole course will be performed in the Teaching Digital Ring (ADD) of ZARAGOZA UNIVERSITY. Platform MOODLE: https://moodle2.unizar.es/add/

4.5.Bibliography and recommended resources

http://psfunizar7.unizar.es/br13/eBuscar.php?tipo=a