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## Development and implementation of clinical presentation curriculum at PAHS School of Medicine

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### Abstract

Patan Academy of Health Sciences School of Medicine (PAHS SOM) has implemented innovative curriculum in line with its mission of producing technically competent and socially responsible doctors. One of the important strategies is its Clinical Presentation (CP) curriculum.

During clinical years undergraduate medical students are taught through CP curriculum comprising of 112 common clinical presentations. Each clinical presentation has a schema which is a diagnostic reasoning map. Using the schema, graduates are able to scientifically approach clinical problems, categorize them into diagnostic categories proceeding from general to more specific diagnostic categories until a final diagnosis is reached. The curriculum outlines diseases or conditions covered by each CP while some overlapping and repetitions are expected. The teachings are done as small group sessions with 8-12 students and therefore demands more faculty time.

With committed faculties and supportive leadership, successful implementation of the curriculum has been possible at PAHS SOM and the first four batches of students trained in this curriculum have already graduated and are working.

**Keywords:** clinical presentation curriculum, teaching-learning methodology, undergraduate medical curriculum

## Introduction

Patan Academy of Health Sciences established with a mission to produce technically competent and socially responsible healthcare professional, started enrolling undergraduate medical students from 2010. The school has adopted several new and innovative approaches in teaching learning and Clinical Presentation (CP) Curriculum is one of the several approaches.

Medical education is evolving in response to the scientific advances and societal needs.<sup>1</sup> Well organized comprehensive knowledge domain has a practical implication in clinical problem solving and appropriate teaching learning methods play important role in achieving the educational goals.<sup>2</sup>

PAHS leadership and faculties in the search for the best approach for teaching Clinical Medicine that applies principles of adult learning to help student develop scientific approach in problem solving, had an opportunity to meet and discuss about the CP curriculum with Prof Henry Mandin who first envisioned this curriculum. PAHS had subsequent interactions with faculties from different Universities/schools who have used CP at their medical schools.

University of Calgary was the first to implement CP in a revised curriculum with 120 CPs to enhance students' clinical problem-solving skills.<sup>3</sup> Some schools use CP during Basic Science to build concepts and contents relevant to an understanding of pathophysiological processes linked to a given clinical presentation.<sup>4</sup>

## Process details

### What is Clinical Presentation curriculum?

Clinical Presentation curriculum is based on the approach towards the common clinical presentations which is defined as 'common and important ways a person, group of people, community, or population present (symptoms, signs or laboratory abnormalities)

to a physician.<sup>3</sup> The rationale behind this curriculum is that, the response/ reaction of human body to infinite number of insults is finite and stable over time.<sup>3</sup> For example, if anything happens to the respiratory system, like infection, inflammation, trauma or malignant processes; the person can have only a finite number of presentations like cough, respiratory distress, chest pain, shortness of breath, noisy breathing or hemoptysis. So the idea is if we can teach students around these clinical presentations, then we will be able to teach them the approach to all the common problems related to respiratory system and same with any other body systems. There are a large number of diseases that can affect human body and this number is ever increasing. With the limited and short duration of medical education, medical schools cannot teach each disease nor can the student learn them all. So if we can teach them an approach towards common clinical problems/presentations, they will be able to manage common conditions they encounter in their clinical practice.

**How CP curriculum works?** In CP curriculum, for all clinical problems/presentations there will be problem specific schema and using this schema through forward reasoning, one has to differentiate between diagnostic categories and proceed from general to more specific diagnostic categories until a diagnosis is reached. At each step of differentiation between the diagnostic categories, one has to use the basic science knowledge, clinical cues (history and physical examination findings) and relevant investigation results. The CP curriculum is a scheme driven search strategy and an inductive reasoning process. It differs from problem abased learning (PBL) which is a search and scan form of inquiry and a hypothetico-deductive reasoning where students after identifying a problem need to generate hypothesis and test each hypothesis.<sup>2</sup>

Practice of scheme-driven strategy is an integral part of the clinical presentation

curriculum. The problem specific schemes in the CP curriculum also help students learn the expert approach to clinical problem solving skills<sup>2</sup> and eventually, after repeated exposures, they would recognize patient problems immediately (pattern recognition).<sup>5</sup> The schema in CP serves as a road map and provides a framework that helps learners to organize and arrange knowledge in ways that are meaningful to them.<sup>2,6</sup>

**Why PAHS SOM- chose Clinical Presentation curriculum?** At PAHS SOM, PBL is the main teaching learning tool in the Basic Science years which is known for its generic problem-solving skills. However, in Clinical Medicine each problem requires a specific problem solving strategy which depends upon both the mastery of knowledge on the domain and problem solving skills.<sup>2</sup> Based on the fact that the Experts use scheme driven search strategy, this strategy can help students become more efficient learners, better problem solvers and make them think as experienced clinicians earlier in their development.<sup>2,6</sup> Furthermore, this scheme-driven strategy may also enhance memory organization and diagnostic success.<sup>7</sup> As reported from one school using CP curriculum, graduates of this curriculum have been very successful in matching at high-level residency programs and have scored above the national average on USMLE step 1 and step 2 exams.<sup>8</sup> In a study, the students in the CP curriculum reported less stress due to volume and complexity of material while the overall workload in the curriculum was found manageable and stable.<sup>9</sup> There has been evidence showing substantial effect of the CP curriculum on students' retention of basic science knowledge.<sup>10</sup>

Based on these evidences, in view of our institutional mission of producing competent physicians capable of working in a resource poor setting and sometimes working in isolation with no supervision, especially in rural settings, we opted for CP curriculum which has shown to be effective in developing logical thinking and problem solving skills. All

the faculties were brought onboard and the choice was a collective decision.

#### **Development of CP curriculum at PAHS SOM-**

The PAHS school of Medicine chose CP curriculum as the main teaching learning tool during the clinical clerkship years of its undergraduate medical program. The two and half year's clinical clerkship is further divided into 18 months of Junior Clerkship, 6 months of Senior Clerkship and 6 months of peripheral/rural placement at PAHS distributed teaching sites.

In the process of developing the CP curriculum at PAHS SOM, following steps were taken:

- Discussions among faculties interested in medical education was initiated
- Workshop and training sessions on curricular models and CP curriculum were held
- A clinical curriculum coordinator was appointed and a committee consisting of faculty representatives from all the clinical departments was made
- The committee finalized the list of common Clinical Presentations (CPs)
- The CPs were distributed among different clinical disciplines/departments based on the commonly encountered presentation in each clinical discipline
- One faculty in each clinical discipline/department was appointed as the clinical coordinator for the discipline
- Faculties in individual disciplines started developing the Schema for each CP and prepared the process sheet with important information on history, physical examination and investigations to help students walk through the schema
- The clinical coordinators from all departments then sat together to review, edit and finalize the written schemas and the process sheets
- For each CP, four paper cases were written/developed
- Common four to six management topics under each CP were outlined. A few topics on disease epidemiology or

pathophysiology were also included where relevant

- The CPs were then divided into Junior and Senior Clerkships as per the timing of teaching them
- The delivery and hours allocated for each CP was discussed and was arranged into the clinical clerkship schedule

We came up with total of 112 CPs and divided it as 92 to be covered during Junior Clerkship and 20 during the Senior Clerkship. Though there were department wise distribution of CPs, a lot of repetition and revisions were expected during the students' placements at different departments and also during the placement at peripheral/rural teaching sites. We have tried to ensure as far as possible that the developed schema for all clinical presentations provide pathways that students can use for learning as well as problem solving in clinical settings.<sup>6</sup> The interdisciplinary meetings of the clinical coordinators helped in curricular mapping through content integration, identifying gaps and redundancies and linking learning outcomes across the Junior and Senior Clerkships.<sup>11</sup>

Each CP is taught/ facilitated by one faculty over a total of six-hour period with the sessions spread across 3 days. The first hour on Day-1 consists of introductory lecture introducing the schema and giving the overall picture. On Day-2 a two-hour session is for discussing the paper cases. The paper cases are built around common diseases or conditions covered under each CP. On Day-3 a two-hour session is given for student presentations on the management topics. Students in a team of two to three are assigned the topics a day before and they have to work together for the presentation. On Day-3 a final one hour wrap-up session is for summarization, clarifying any confusions, emphasizing and reviewing the must know areas and suggestions for further readings. Depending upon the number of CPs and total duration of placement in each department we have scheduled one to two CPs per week. We also make sure that the diseases covered by each CP be discussed during the ward rounds,

ward-based teachings and out-patient clinics so that students can link the knowledge with the clinical practice.

The CP teaching sessions are conducted in small groups of 8-12 students and this provides ample opportunity for discussion, knowledge sharing and also learning presentation skills and team dynamics while faculty can monitor each student directly and give timely feedback. Implementation of a new curriculum is a challenge and more so if the curriculum is faculty intensive, heavily geared to small group teaching with considerable demand on faculty time.<sup>1</sup> However the PAHS School of Medicine has faculties committed to the institutional mission and the collective leadership is the strength of the school which has facilitated the process of implementation of new and innovative approaches. The school has been successfully running this curriculum and first four batches have already graduated. Both the students and the faculty are happy with this teaching learning methodology. The students are performing well in their exams and in the National medical licensing exam. Whether this curriculum has any impact on the clinical reasoning and patient care of our graduates are yet to be formally evaluated.

## Conclusion

To incorporate problem solving skills, scientific approach and team work into its graduates, PAHS school of medicine has chosen clinical presentation curriculum which can help students to approach patients systematically and develop logical thinking. It has advantages of small group teaching and practices the principle of adult learning. The curriculum has been successfully implemented with a high level of commitment from the faculties and is well accepted by the students.

**Conflict of Interest**

The author has been involved in the development of this curriculum and currently working as the Dean of the school

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None

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