THE CHINESE UNIVERSITY OF HONG KONG

Courseware Development Grant (2018-19)

<u>**Final Report**</u>

Report due 31 May 2019
Please return by email to CUHK cdgs@cuhk.edu.hk

<u>PART I</u>

Project title:　E -management of General Surgical Patients

Principal supervisor:　Kaori Futaba

Co-supervisor(s): Tony WC Mak, Professor Simon SM Ng, Professor Enders KW Ng, Professor Paul BS Lai, Professor James YW Lau

Department / Unit: Surgery

Project duration: From September 2018 to May 2019

Date report submitted: June 2019

1. Project objectives

Management of critically sick, general surgical patients can be challenging. Doctors must assess the patient in a timely manner to decide on the most likely diagnosis to offer them prompt treatment to save lives. Initial choice of treatment can be crucial in the management of critically ill patients. There are a wide range of investigations available to help doctors reach the correct diagnosis, however there are pros and cons and risks with each test offered and it can be difficult to decide on which investigation is the best one for your patient at that time. There is no one correct way to manage a sick general surgical patient. However, consequence of making a wrong choice may cost patient's life. Exposure to the variety of emergency surgical conditions during their General Surgical attachment is unpredictable and may be limited depending on the case mix availability.

The project objective was to produce an interactive learning platform to allow students to manage a critically sick e-patient to enhance student's deeper learning and promote higher order learning. We chose three important classical emergency surgical scenarios: acutely painful leg, acute abdominal pain and gastrointestinal bleed. Students are given an emergency case history and then are given choices on different investigations and management steps. With each choice, they will find out the consequence of their action on their e-patient's condition with explanation, as well as pros and cons of their choice with reference to guidelines or evidence. We have included clinical images and video to improve their understanding of different special

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investigations available, which they may not get a chance to see during their surgical attachment.

The objectives of this project have not changed, the depth of each project has widened and deepened to allow the student to learn a wider range of management options, with up-to-date evidence on each investigations and management choice. Hence, we have decided to focus on 3 case scenarios.

We are on track to meet the objectives of this project.

2. Process, outcomes or deliverables

We recruited 2 basic surgical trainees and one intern interested in pursuing a career in general surgery, to lead a e-patient storyline each. We have involved GPS students to engage with the process of producing such a courseware to learn about the steps involved in producing such a learning tool, but also to give us feedback on the needs of current generation of CUHK medical students. We have worked with OME team to help us with the storyline development and have worked simultaneously on the three scenarios: acutely painful leg, acute abdominal pain and gastrointestinal bleeding. We have had support from the whole department to obtain relevant clinical images and videos to be used in the storyline, to allow the students to appreciate the real clinical scenario and understand what each of the procedure involves. However, getting the exact images and videos to demonstrate what we want to demonstrate in the storyline has been a lot more challenging than expected, but we are hoping to complete all three scenarios in the next 4-6 weeks.

The e-patients will be accessible by final year medical students on Blackboard once completed in the Senior Surgical Dressership Course.

3. Evaluation Plan

We have not changed our evaluation plan. Once the three scenarios have been completed and released onto the blackboard, we aim to assess the effectiveness of this courseware by asking the students to complete a short MCQ to assess their knowledge before and after using the courseware. Students will also be encouraged to leave feedback to allow us to improve the courseware further.

To evaluate this project, students survey will also be used to obtain feedback on how often they used the module, the ease of use, content of each case scenario, whether they would recommend it to their peers with additional comments.

We will retrieve web logs at the end of the 3-month period to assess how often each case was accessed by how many students. We will also document any technical faults or issues with the module during the trial period of 3 months, so that it can be further refined in the future.

4. Dissemination, diffusion and impact

The e-patients storyline so far has been shown to colleagues within the surgical department at the Prince of Wales Hospital for their feedback and it has been well received. Once completed, all three e-patients will be made fully accessible by CUHK Med 6 students on blackboard. They will be encouraged to use it during the senior general surgical attachment, to enhance their understanding and learning in the management of emergency general surgical patients. This interactive learning will allow them to appreciate the consequence of their decision making, without harming patients.

We are aiming for a submission to a medical education conference and a publication once we have completed our evaluation

PART II
Financial data

Funds available:

Funds awarded from CDG $ 98,130
Funds secured from other sources $
(please specify_____)

                                          Total: $ 98,130

Expenditure:

Item	Budget as per application	Expenditure	Balance
Full support from OME for development of storyline courseware, video recording, editing, animations	$91,830	$91,830	$6,300
Student Helper	$3,300	$3,300	$3,000

Vouchers for surrogate patients	$3,000	$3,000	$0
Total:	$98,130	$98,130	$0

PART III

Lessons learnt from the project

It has been rewarding to support junior colleagues and GPS students in putting together the storyline for this courseware development and encouraging them to think and produce a learning tool that would be of interest and of value to CUHK students. We hope that by involving the junior trainees and students, we have understood the needs of the current generation of students better. We have developed three different styles of storyline to suite the case scenario and storyline, but also different learning styles. It would be interesting to see the feedback from the students to see if they prefer particular style. At times, it has been challenging to meet and discuss on the development of the project with incredibly busy trainees working in different departments or hospitals. However, the OME team has been very supportive and flexible in meeting with trainees out of normal working hours to help with the development of this courseware. OME team has offered their expertise on storyline and made suggestions that we had not known was possible. Obtaining the clinical images and video clips of the procedures to fit each scenario was more challenging than expected and delayed the process a little but the whole department of Surgery at the Prince of Wales Hospital has been very supportive and helpful. It would not have been possible without their help.

PART IV
Information for public access

Summary information and brief write-ups of individual projects will be uploaded to a publicly accessible CUHK CDG website. Please extract from Part I the relevant information to facilitate the compilation of the publicly accessible website and reports.

1. Keywords

Please provide five keywords (in the order of relevance to your project) to describe your project.

(Most relevant)   Keyword 1: Interactive learning

                     Keyword 2: Consequential Thinking

Keyword 3: General Surgical Emergency

Keyword 4: Storyline

(Least relevant)   Keyword 5: Blackboard

2. Summary statistics

Please provide information, if any, in the following tables, and provide the details in Part I.

Table 1: Publicly accessible online resources (if any) – Not publicly available
(a) **Project website:**   *If a publicly accessible project website has been constructed, please provide the URL*
(b) **Webpage(s):**   *If information of your project is summarized in a webpage (say a page in the department's or faculty's website), please provide the URL(s) in here*
(c) **Others (please specify):**

Table 2: Resource accessible to a target group of students (if any)			
If resources (e.g. software) have been developed for a target group of students (e.g. in a course, in a department) to gain access through specific platforms (e.g. CU Learning Management System (Blackboard), facebook), please specify.			
Course Code/ Target Students	**Term & Year of offering**	**Approximate No. of students**	**Platform**
Senior Surgical Dressership, Department of Surgery, CUHK	All final year medical students	230	Blackboard

Table 3: Presentation (if any)	None yet
Please classify each of the (oral/poster) presentations into one and only one of the following categories	**Number**
(a) In workshop/retreat within your unit (e.g. department, faculty)	*Please insert no*
(b) In workshop/retreat organized for CUHK teachers (e.g. CLEAR workshop, workshop organized by other CUHK	*Please insert no*

units)	
(c) In CUHK ExPo jointly organized by CLEAR and ITSC	*Please insert no*
(d) In any other event held in HK (e.g. UGC symposium, talks delivered to units of other institutions)	*Please insert no*
(e) In international conference	*Please insert no*
(f) Others (please specify)	*Please insert no*

Table 4: Publication (if any)	None yet
Please classify each piece of publications into one and only one of the following categories	**Number**
(a) Project CD/DVD	*Please insert no*
(b) Project leaflet	*Please insert no*
(c) Project booklet	*Please insert no*
(d) A section/chapter in a booklet/book distributed to a limited group of audience	*Please insert no*
(e) Conference proceeding	*Please insert no*
(f) A chapter in a book accessible internationally	*Please insert no*
(g) A paper in refereed journal	*Please insert no*
(h) Others (please specify)	*Please insert no*

3. A one-page brief write up

Please provide a one-page brief write-up of no more than 500 words for posting on the CDG website.

Management of critically sick, general surgical patients can be challenging. Doctors must assess the patient in a timely manner to decide on the most likely diagnosis to offer them prompt treatment to save lives. Initial choice of treatment can be crucial in the management of critically ill patients. There are a wide range of investigations available to help doctors reach the correct diagnosis, however there are pros and cons and risks with each test offered and it can be difficult to decide on which investigation is the best one for your patient at that time. There is no one correct way to manage a sick general surgical patient. However, consequence of making a wrong choice may cost patient's life.

The project objective was to produce an interactive learning platform to allow students to manage a critically sick e-patient to enhance student's deeper learning. We chose three important classical emergency surgical scenarios: acutely painful leg, acute abdominal pain and gastrointestinal bleeding. Students are given an emergency case history and then are given choices on different investigations and management steps. With each choice, they will find out the consequence of their action on their e-patient's condition with explanation, as well as pros and cons of their choice with reference to guidelines or evidence. We have included clinical images and video to improve their understanding of different special investigations available, which they may not get a chance to see during their surgical attachment.

Exposure to the variety of emergency surgical conditions during their General Surgical attachment is unpredictable and may be limited depending on the case mix availability. This interactive learning platform on three classical emergency scenarios will be accessible by final year medical student to use on-line via blackboard on any platform, 24/7. We hope this will augment their learning experience in Surgery and enhance their understanding and promote higher order learning.