

**THE CHINESE UNIVERSITY OF HONG KONG**

**Micro-Module Courseware Development Grant**

**Scheme 1: Basic Scheme**

**Final Report (2017-18)**

Report due 31 October 2018

Please return by email to The Ad hoc Committee on Planning of eLearning Infrastructure  
[mmcd@cuhk.edu.hk](mailto:mmcd@cuhk.edu.hk)

**PART I**

Project title: General Surgery Micromodule: Operations Made Easy

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Department / Unit: Surgery

Project duration: From December 2017 to October 2018

Date report submitted: 26<sup>th</sup> October 2018

**1. Project objectives**

The original project objective was to produce 12-16 micro-modules on common general surgical operations in our department, each module being 5-8 minutes long. However, after discussion with project team members during project planning, we have decided to focus on seven common emergency general surgical operations which are often carried out at night and students rarely get a chance to see them during their surgical block. Each module has comprehensive information on the topic as well as narrated surgical video carefully explaining the procedure. We have produced 6 good quality emergency modules, each module of 10-20 minutes lengths to date.

**2. Process, outcomes or deliverables**

We had 7 surgical trainees and medical students simultaneously working on all individual topics. We had help from all surgical doctors working in General Surgery to identify potential operations for recording, speaking to patients and consenting for recording, as well as recording their emergency surgery 24/7, in order to get the best clips to demonstrate the essentials steps of the emergency surgery. It has been challenging to obtain good quality videos for demonstration in emergency surgery but every surgeon in our surgical department has been very helpful in recording all possible cases, night and day.

We have completed six micro-modules on the following emergency general surgical procedures:

- Laparoscopic appendicectomy (Duration 12mins 44secs, S1 style)
- Laparoscopic cholecystectomy (Duration 13mins 2secs, S1 style)
- Intestinal obstruction (Duration 18mins 2secs, S1 style)
- Perforated Peptic Ulcer (Durations 10mins 26secs, S1 style)
- Skin lesions (Duration 9mins 27secs, S1 style)
- Endoscopy (Duration 14mins 12secs, S1 style)

We are still in the process of producing the last module on ischaemic limb. As we have no control over when and what emergency surgery take place, we have not managed to film an emergency surgical procedure for ischaemic limb. However, we hope we will be able to film the surgery when we have a case in the near future.

These modules have been made for use in MEDU4710 senior surgical dressership, for the final year students to access during their general surgery attachment to augment their experience and knowledge. Three of the modules were shown to our current Medical Year 6 students during one of their surgical tutorials for their feedback and assessment before launching it online. We have released the laparoscopic Appendicectomy module online on the blackboard for trial and demonstration purpose to our surgery department at our departmental research meeting. The idea and the content of the micromodule produced was very well received by all members.

It has taken us a little longer than we had anticipated to complete all the modules, but each module has been produced to a good standard with excellent feedback from students. We are now completing the final checks and corrections. Therefore, we are aiming to release the 6 micro-modules produced on line by the end of 2018 to allow the current final year medical students to access them before their final exams later in 2019. Overall, we are pleased to report that the project has progressed satisfactorily and is almost complete.

### **3. Evaluation Plan**

To assess the effectiveness of the micro-module, final year students were given a short MCQ prior to accessing the micromodule to assess their knowledge and after using the micromodule, on relevant topics. We were pleased to see that their score improved from average of 54.2% to 83.3%.

All students were given anonymous questionnaires to feedback on the module. All students said the topics covered by the micro-modules were relevant, 96% felt the content was sufficient and just right for their level. 4% felt it was not enough and wanted more information or more surgery videos. 82.3% said they would definitely use the micromodules on the blackboards in the future when available. 17.6% said maybe. A couple of students felt that the video was too fast, however, on panopto, you can adjust the speed of replay when watching these micro modules in their own time. They can repeat or pause as necessary.

We have not yet released all the module on line, to evaluate the web logs to see how often and by how many students these modules will be accessed. We will carry out regular web log reviews in the future to ensure smooth running of the micromodules and deal with any technical faults as they arise.

#### **4. Dissemination, diffusion and impact**

We have presented the micro-modules at our departmental research meeting. It has encouraged our department to expand the online learning resources to allow the expanding number of medical students to learn in their own time and allow them to all have exposure to all common procedures. This project can be expanded to all departments in Medicine – to allow all students to have exposure to common procedure or conditions, which avoids the lottery of cases available during their attachment.

The micro-modules have also been reviewed by 17 final year medical students to check for content and has been well received. Once all minor corrections are made, it will be distributed to all final medical year students through the CUHK Blackboard.

We will be submitting an abstract to the CUHK Teaching and Learning Innovation Expo 2018 and an international medical education meeting in 2019. We are hoping to get a publication in a peer reviewed journal in 2019.

## PART II

### Financial data

Funds available:

Funds awarded from MMCDG	\$ 99,630
Funds secured from other sources (please specify _____)	\$ 0
Total:	\$ 99,630

Expenditure:

Item	Budget as per application	Expenditure	Balance
Video Recording – hard disk		HKD 2,056	HKD 97,574
Video editing, addition of text and voice over by ITSC		HKD 96,749	HKD 825
<b>Total:</b>		<b>HKD 98,805</b>	<b>HKD 825</b>

### PART III

#### Lessons learnt from the project

*Please describe your way forward.*

*Please describe any of the following item(s) accordingly:*

- *Key success factors, if any*
- *Difficulties encountered and remedial actions taken, if any*
- *The role of other units in providing support, if any*
- *Suggestions to CUHK, if any*
  - *Example: what should be done differently?*

### PART IV

#### Information for public access

*Summary information and brief write-ups of individual projects will be uploaded to a publicly accessible CUHK MMCDG 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 most relevant to your project to least relevant) to describe your micro-modules/pedagogies adopted.*

(Most relevant)      Keyword 1: Emergency General Surgery

Keyword 2: Narrated operations

Keyword 3: Medical Students

Keyword 4:

(Least relevant)      Keyword 5:

#### **2. Summary**

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

<b>Table 1: Publicly accessible online resources (if any)</b>
(a) <b>Project website: NA</b> <i>If a publicly accessible project website has been constructed, please provide the URL.</i>
(b) <b>Webpage(s): NA</b> <i>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) here.</i>

**(c) Tools / Services:**

ITSC.

**(d) Pedagogical Uses:**

These micro-modules were used to allow the students to have some basic knowledge about common emergency surgical procedures, so that when they come across these cases during their clinical attachment, they can appreciate the case more and have deeper learning experience. The micro-modules produced in this project can be used to support flipped classroom activity and allow more detailed discussion about the topics.

**(c) Others (please specify):**

**Table 2: Resources 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. Blackboard, facebook), please specify.*

<u>Course Code/ Target Students</u>	<u>Term &amp; Year of offering</u>	<u>Approximate No. of students</u>	<u>Platform</u>
MEDU4710 Senior Surgical Dressership	All final year medical students	217	Blackboard

**Table 3: Presentation (if any)**

*Please classify each of the (oral/poster) presentations into one and only one of the following categories*

	<b>Number</b>
(a) In workshop/retreat within your unit (e.g. department, faculty)	1
(b) In workshop/retreat organized for CUHK teachers (e.g. CLEAR workshop, workshop organized by other CUHK units)	0
(c) In CUHK ExPo jointly organized by CLEAR and ITSC	0 (submitted)
(d) In any other event held in HK (e.g. UGC symposium, talks delivered to units of other institutions)	0
(e) In international conference	0 (will be submitted)
(f) Others (please specify)	0

**Table 4: Publication (if any)**

*Please classify each piece of publication into one and only one of*

	<b>Number</b>
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<i>the following categories</i>	
(a) Project CD/DVD	0
(b) Project leaflet	0
(c) Project booklet	0
(d) A section/chapter in a booklet/ book distributed to a limited group of audience	0
(e) Conference proceeding	0
(f) A chapter in a book accessible internationally	0
(g) A paper in a referred journal	0
(h) Others (please specify)	0

### **3. A one-page brief write up**

*Please provide a one-page brief write-up of no more than 500 words and a short video.*

Final year medical students are only allocated to 5 weeks attachment in General Surgery. Exposure to surgery during their attachment is therefore limited and variable depending on the case mix availability. When the students attend the surgery in the operating theatre, the views of the surgical field is often limited and it is difficult for the operating surgeon to explain every step of the surgery and teach them whilst carrying out a difficult procedure in a timely manner. Emergency general surgical operations are even more unpredictable, with very sick patients requiring challenging surgery and are often carried out at night. Therefore, students rarely get a chance to see them during their surgical block. Therefore, we have produced six good quality general surgical micromodules on emergency general surgery operations: Laparoscopic appendicectomy, Laparoscopic Cholecystectomy, Perforated Peptic Ulcer, Intestinal obstruction, Skin lesions and Endoscopy. Each module contains comprehensive information on pathophysiology, patient presentation, relevant investigations with examples and management – including narrated short operative videos on the emergency general surgical procedure. Each module is 10-20 minutes long which can be accessed by the students online 24/7 on any platform. This will allow students to have access to good quality learning material at their fingertips to gain basic knowledge on the topic, allowing them to have higher order thinking and deeper learning experience on the ward.