



# **Guidelines for VP repurposing to different educational levels and scenarios**

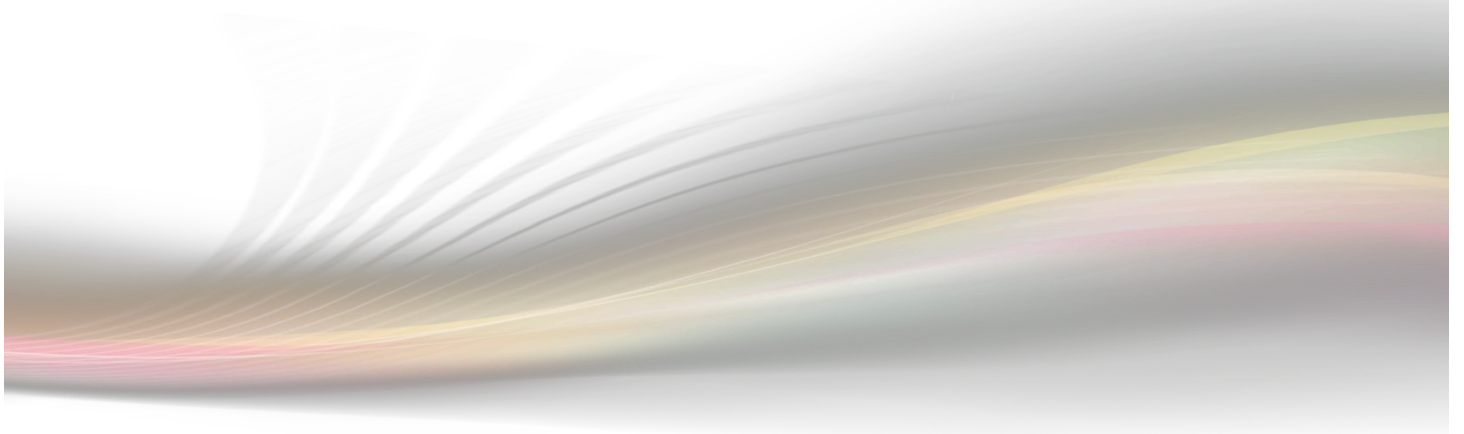
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## Table of Contents

Introduction.....	3
Description of original VP and original educational setting .....	3
Brief description of VP format.....	3
Methods and Materials .....	3
Selection criteria .....	3
What type of repurposing was done.....	3
Steps involved in repurposing .....	4
How the work was planned.....	4
Brief outline of skill set required .....	4
Results.....	5
How the content was enriched .....	5
How long it took per step and in total.....	5
The repurposing workflow .....	6
How the repurposed VPs were evaluated .....	7
Discussion and conclusions.....	8

## Introduction

This guideline is based on a Virtual Patient (VP) module, originating from the University of Muenchen.

The original module was introduced for continuing medical education (CME) in a blended learning scenario and contains three short cases. These cases were repurposed to be used for undergraduate medical students in a self-directed learning setting.

### ***Description of original VP and original educational setting***

The original VP module represents three endocrinology cases (see table below). This short case and two other cases were part of a CME module about adipositas at the University of Muenchen.

After completion of the three cases, 10 specially designed multiple choice had to be answered in order to receive accreditation from the German medical association.

The main target group were general practitioners (GP), who had attended the seminar "Hausärztliches Curriculum" (i.e. GP curriculum).

Patient	Complaints	Diagnosis
36 year old secretary	Eating binges	Hashimoto Thyroiditis
61 year old retired person	Palpitations, weight gain	Metabolic syndrome
32 year old mother	Weight gain	PCO-syndrome

### ***Brief description of VP format***

The original VP was created with the CASUS authoring tool and represents a linear case in the key-feature format.

The case is part of a module containing three cases about the same topic followed by a block of 10 multiple-choice questions.

## Methods and Materials

Below is description of the methods employed in this type of repurposing along with the electronic material used to facilitate this process.

### ***Selection criteria***

This VP was chosen to be part of an undergraduate internal medicine curriculum containing more than 150 short cases for recapitulating and training important topics in internal medicine. Due to the key-feature format these CME modules seemed to be particularly suitable to be integrated in this undergraduate course as well.

### ***What type of repurposing was done***

The repurposing of the CME case was two-fold (according to the eViP definitions<sup>1</sup>):

- Repurposing to a different educational level and target group
- Repurposing for a different educational scenario (blended learning to self-directed learning)

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<sup>1</sup> eViP Electronic Virtual Patients official website, glossary page, accessed on 15<sup>th</sup> February 2009 <http://www.virtualpatients.eu/about/glossary/>

### ***Steps involved in repurposing***

The original CME module was duplicated within the CASUS database and then split into the three short cases.

After that the three short cases were repurposed by one physician. Main steps included:

- Clearing copyright issues
- Adding explanatory text elements (e.g. hyperlinks to explain terms, standard values for laboratory results, enhancing storyboard)
- Adapting the existing CME level questions and answers to be more suitable for the lower level undergraduate students
- Conducting a review of the VPs by medical students and a review of the implementation of necessary changes by staff
- Integrating the VPs into the undergraduate medical curriculum and ongoing evaluation

### ***How the work was planned***

A coordinator at the LMU Muenchen supervised the repurposing process. The repurposing effort and steps were monitored using the eViP repurposing effort sheets.

### ***Brief outline of skill set required***

- Technician to duplicate and split the original CME module
- Physician to adapt the cases to the educational level appropriate for undergraduate students
- Medical students to evaluate the case once repurposed

## Results

### ***How the content was enriched***

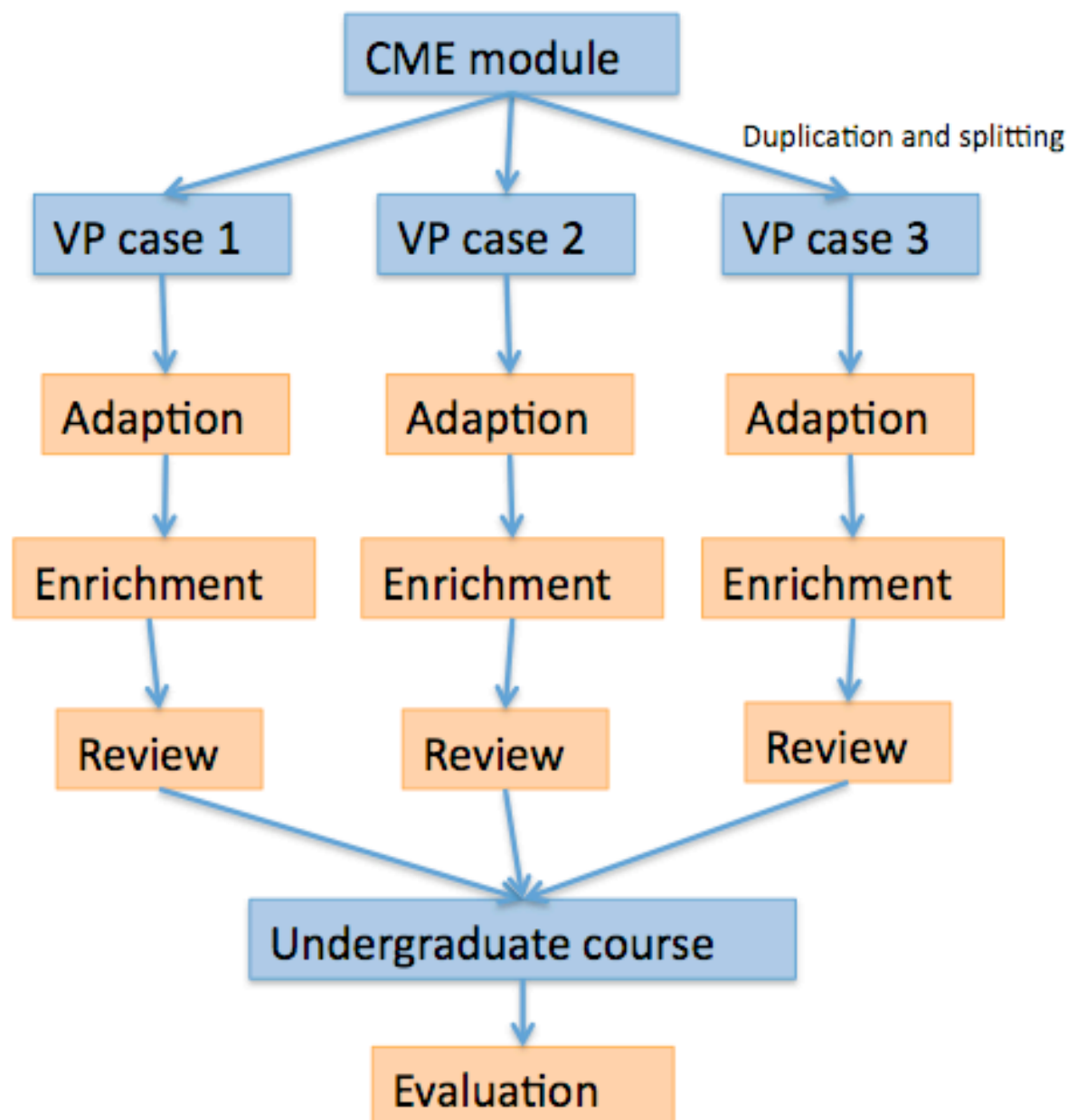
The content was enriched adding the following:

- Explanatory text elements (hyperlinks, expert comments, additional text for answer comments)
- Text elements enhancing the storyboard

### ***How long it took per step and in total***

Step	Time
Duplication and splitting CME module	30 mins
VPs text adaption	4,5 hour
Review of the three VPs	1,5 mins
Content copyright clearance	30 mins
Total (for all three VPs resulting from the CME module)	7 hours
Total (for one VP)	2.3 hours

*The repurposing workflow*



### ***How the repurposed VPs were evaluated***

The evaluation was primarily to establish the worth of what had been achieved.

For the repurposed three cases the following evaluation was conducted:

- Student individual VP questionnaire
- Staff interview

The overall feedback from the students was in favour of Virtual Patients learning resources.

29 students completed the individual VP questionnaire.

The following table shows some of the main results of the evaluation:

<b>Question</b>	<b>Mean value (1=totally agree, 5= totally disagree)</b>
The content of the case is well comprehensible	3.2
I have learnt a lot working through the case	3.7
Answers and questions are well comprehensible	3.0
Answer comments are helpful	3.0
Expert comments are helpful	3.1

The comments of students included suggestions to add additional expert comments for more additional information.

These results indicate that there might be a need to further investigate the cases and add information at certain points. A careful analysis of the results has to be done after the course has been completed.

However the analysis of the correct responses of students shows that the level of difficulty of the questions is appropriate (mean value of correct responses was 75%).

Finally, as a result of the staff interviews, the subject matter experts (n=3) commented that this was a worthwhile experience. They felt that the more repurposing they did the easier and more efficient they would become.

## Discussion and conclusions

In practice, the repurposing of a VP case in continuing medical education to an undergraduate setting is an efficient use of time and resources. In fact, it was the key-feature format that turned out to be especially suitable for this kind of repurposing.



