Implementation of the MedBiquitous Virtual Patient Standard
Generalizable Best Practices from the eViP Project

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On behalf of the eViP partners
eViP Partners

1. St George’s, University of London, UK
2. Karolinska Institutet, Sweden
3. Ludwig-Maximilians-University, Munich, Germany
4. University of Warwick, UK
5. Universiteit Maastricht, Netherlands
6. Heidelberg University, Germany
7. University of Medicine Cluj-Napoca, Romania
8. Uniwersytet Jagiellonski, Poland
9. University of Witten Herdecke, Germany
What? Standardized VP packages

Why? “… to enable interoperability, accessibility and reusability of Web-based virtual patient learning content.” *

*http://medbiq.org/working_groups/virtual_patient/index.html
ANSI/MEDBIQ VP.10.1-2010, MedBiquitous Virtual Patient

Data model + Description of the VP + Packaging
Implementation - two perspectives

- System / repository developer
- VP author / Faculty
http://virtualpatients.eu
System / Repository developer
Conformance testing

- Level 1 - Package validation
- Level 2 - XML/XSD validation
- Level 3 - Import validation
- Level 4 - Runtime validation
Specific metadata fields

![Diagram of metadata fields]

- **evipMetadata**
  - **vpSystem**
    - **name**
    - **version**
    - **path**
  - **originalIdentifier**
    - **catalog**
      - **entry**
    - **entry**
  - **provenance**
    - **entity**
      - **date**
  - **consent**
    - **catalog**
      - **entry**
    - **entry**
  - **scenario**
  - **vpEducation**
    - **interactiveElement**
      - **usedByStudents**
VP author / Faculty
Main activity: Using, Adapting, Customizing, Creating

“Repurposing means to convert a Virtual Patient (VP) created for one purpose into a VP fit for a new purpose.”

- Educational levels
- Educational scenarios
- VP structures
- VP systems
- Cultures (ethnic, language, socio-economical, geographical, professions, disciplines) *

Typical Repurposing Workflow

1. **Identify 'paediatric VPs' delivered in HD**
   - Select VPs from HD not yet available in UM
   - Review selected HD VPs by experts at UM
   - Discuss suitability of German VPs for Dutch curriculum and identify missing content to enrich

2. **Select VP and translate (German to Dutch culture)**
   - Adapt Virtual Learning Environment to fit the VP
   - Test and GO-LIVE

3. **Customise VP player user-interface (e.g. from HD to UM)**
   - Repurpose and enrich VP for local culture and educational scenario
   - Check language with native speaker

**UM Workflow**

**Lars**

**START**
Licensing workflow

- Only applicable under the following circumstances:
  1. Data consent obtained (i.e., consent and context in which it was obtained).
  2. Suitable records obtained to consent process being in place (e.g., 40 years old and a non-medical study).
  3. Patient is now deceased but has given consent for all identifiable resources.
  4. Consent form stored safely by host institution.
  5. Written consent was given that consent was assessed.

Start

Does permission exist or consent apply?

Does permission could use within eVIP context?

Risk assessment conducted. Clinician sign-off and document resource.

Risk assessment of resource. Low risk?

eVIP consent form used, unique identifier generated. Consent form stored safely by host institution.

Discard resource and replace with one with suitable permission / consent.

Remove any unique identifying information in resource e.g. tattoos.

Complete eVIP permissions document.

Add to referatory and update eVIP database.

End

Provide a delay (cooling off period).

Remove any unique identifying information in resource e.g. tattoos.

Complete eVIP permissions document.

Add to referatory and update eVIP database.

End
Consent form template

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Project: eVIP (Electronic Virtual Patients)

Performer Consent and Release Form for Virtual Patient Digital Content

Background:
A. The aim of the eVIP programme is to create a collection of multilingual and multicultural virtual patients to improve the quality and efficiency of medical and healthcare education across the world.

B. The e-Learning Unit at St George’s Hospital Medical School (trading as St George’s, University of London), is working as part of this collaboration with other international medical and healthcare education establishments to repurpose and share existing virtual patients with the wider online community as part of the eVIP programme.

C. St George’s University of London intends to allow other medical, healthcare and educational collaborative establishments to use, re-use, store and distribute the digital content, including X-rays, images, photographs, films, and recordings, for the purpose of developing digital teaching and educational tools in concordance with the Creative Commons licensing model.

D. All personal information supplied will remain confidential and will not be made publicly available.

E. The undersigned have agreed to appear/perform on the digital content

Agreement:
1. The parent or guardian of any one or more of the undersigned who are 18 years of age or under, do assign to [St Georges, University of London] and the eVIP programme all rights, whether or not known in and to all motion picture or still photographs of me or my child’s likeness, poses, acts and appearances or the sound record made by [St George’s, University of London] or me or my child’s
Systematic peer-review process
Evaluation Toolkit

Virtual patients
- Questionnaire for students to evaluate their experiences with VPs applied for clinical reasoning;
- Checklist for teachers and developers to indentify the constituents and structures of VPs considered important to elicit clinical reasoning

Educational scenario
- Questionnaire for students to evaluate their experiences with the integration of VPs in the curriculum;
- Checklist for teachers and developers to indentify forms of active learning and their sequencing or linking with other teaching activities, considered important to elicit clinical reasoning
Evaluation of Virtual Patients Database

Enter review for: 71-letnia kobieta z bąblami gąsowy

VP id: urn:vp:casus:krakow:kononowicz:1000339

Organisation: Faculty of Medicine, Jagiellonian University

Specification of the case

1. VP system:
   - Casus

2. Main learning outcome (e.g., clinical reasoning, communication):
   - Campus ( Yad)

3. Predominant interaction type:
   - Open labyrinth
   - VMeds

4. Type of feedback:
   - Right / Wrong
   - Comparison with expert
   - Additional comments why something is right
   - Additional comments why something is wrong
   - Other:

5. The case contains prompts concerning:
   - Navigation instruction
   - Basic sciences questions
   - Clinical reasoning questions
   - Other:

6. Media used in the case:
   - Text
   - Image - how many:
   - Audio - how many:
   - Video - how many:

7. Pathway of the virtual patient:
   - Select...

Remarks on this question

"Pierwszy raz maÅ‚em do czynienia z większością... przypadek był, za trudny : ("
Best Practice Guidelines

The eViP Best Practice Guidelines (BPG) are based on the experience of the eViP Technical Reference Group and they address the following:

- **BPG 1**: Exchanging Virtual Patients (VPs) between different VP systems;
- **BPG 2**: How to test for conformance;
- **BPG 3**: How to handle external specifications outside of MedBiquitous Virtual Patient (MVP) specification; and
- **BPG 4**: Internalisation of multimedia content for VPs.

1. Guidelines for VP repurposing to a different educational level and discipline
2. Guidelines for VP repurposing to a different structure
3. Guidelines for VP repurposing to different educational scenario
4. Guidelines for VP repurposing to different educational levels and scenario
5. Guidelines for VP repurposing to different culture, language and structure
6. Guidelines for VP repurposing to different disciplines
7. Guidelines for VP repurposing to a different educational level
8. Guidelines for VP repurposing to different culture and language
9. Guidelines for VP repurposing to different language and discipline
10. Guidelines for VP repurposing to different culture, language and scenario


