UpSkill Services

VR-enabled Radiography training

Practical medical imaging education and assessment on demand

The clinical X-ray market is growing. Firstly, due to demographic change: One third of the population will be 65 years old by 2025[1] – and being more susceptible to chronic diseases, the elderly tend to have a greater number of imaging procedures. Secondly, there is a rising prevalence of cancer and cardiovascular diseases.

For healthcare providers, this means they need to cut patient dose – for example, by reducing repetition rates due to improper exposure or positioning. Continuous training can help improve staff competency. Virtual Reality allows for higher training efficiency.

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VR-enabled medical imaging training is a mobile training application that helps to practice and assess medical imaging training in a virtual environment.

- **Increase efficiency in education** with a virtual and interactive X-ray simulation that allows replacement up to 50%[2] of practical training on a physical device

- **Allow learners to progress at their own pace** with Virtual Reality Practice in an immersive VR exam room that features an anatomically accurate patient with full skeleton (including a desktop version)

- **Improve staff competency** with a wide range of practice modules, including more than 84 million different scenarios based 20 body segments and covering all 206 human bones

Virtual Reality Training Effectiveness

New technologies like Virtual Reality have a major impact on the changing education market. Simulation solutions can provide direct and purposeful learning experiences, with improved retention and improved well-being from learning experience.

275%
more confident to act on what they learned after training[1]

4x
more focused than e-learning[1]

4x
faster than classroom training on average[1]

3.75x
more emotionally connected to the content than classroom learners[1]

1) https://www.pwc.com/us/en/services/consulting/technology/emerging-technology/vr-study-2020.html

Practical medical imaging education and assessment on demand with VR-enabled X-ray training

The immersive, adaptive training solution features an VR exam room, including an anatomically accurate patient with full skeleton. The virtual X-ray system reflects real-world operation in a vendor-agnostic environment. Users and educators can track progress with both learning and X-ray image data. Let's deep dive into some functionalities:

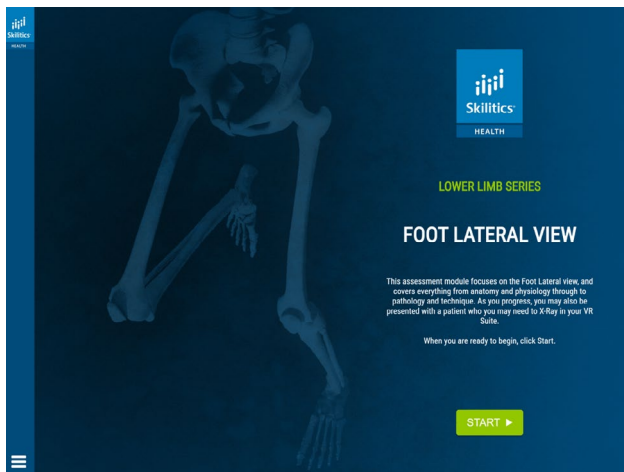### Adaptive assessment modules plus simulation
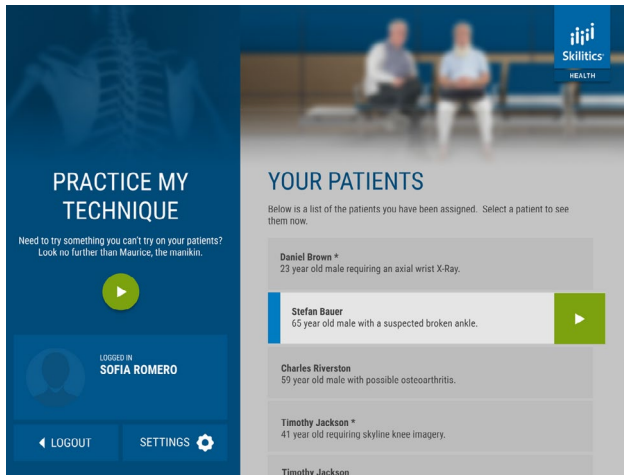
Individual user login
to have an individual learning experience

Assessing knowledge
With over 850 peer reviewed questions included

Simulation modules

Over 100 VR radiographic views
for individual self-assessment & end-to-end patient case studies*

Radiography simulation
using VR headset and/or desktop

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* *Radiographic views are licence dependant.*

Comprehensive training modules

Head & Neck

Cervical Spine: Anteroposterior – Erect, Lateral – Erect, Odontoid Peg – Erect, Flexion – Erect, Extension – Erect, Swimmers Lateral – Supine, Oblique – Erect

Facial Bones: Occipitomental – Erect, Occipitomental 30° – Erect, Lateral – Erect

Mandible: Posteroanterior – Erect, Oblique – Erect, Lateral – Erect, Anteroposterior – Erect

Sinuses: Occipitomental – Erect, Lateral – Erect, Posteroanterior – Erect

Skull: Occipital Frontal – Erect, Occipital Frontal 15° – Erect, Occipital Frontal 20° – Erect, Anteroposterior – Erect, Lateral – Erect

Trunk

Pelvis: Anteroposterior – Supine, Judet – Iliac Oblique, Judet – Obturator Oblique, Inlet – Supine, Outlet – Supine, Anteroposterior – Erect

Chest: Lateral – Erect, Posteroanterior – Erect

Abdomen: Anteroposterior – Supine

Lumbar Spine: Posteroanterior – Erect, Anteroposterior – Erect, Oblique – Erect, Lateral – Erect, Anteroposterior – Supine, Lateral

Thoracic Spine: Anteroposterior – Supine, Lateral, Anteroposterior – Erect, Lateral – Erect, Oblique – Erect

VR Body Parts

Upper Limb

Shoulder: Scapula Lateral – Erect, Anteroposterior – Erect, Axial – Seated, Infero-superior Anteroposterior – Erect, Infero-superior Axial – Supine, ACJ Anteroposterior – Erect, ACJ Anteroposterior – Weight-bearing, Clavicle – Erect

Humerus: Anteroposterior – Erect, Lateral – Erect, Elbow, Anteroposterior, Lateral, Oblique, Radial Head, Forearm, Lateral, Anteroposterior

Wrist: Lateral, Oblique, Posteroanterior, Scaphoid – Angled

Hand: Ball-catcher (Nørgaard), Lateral, Oblique, Posteroanterior

Digits: Finger PA, Finger Oblique, Finger lateral, Thumb AP, Thumb Oblique, Thumb lateral

Lower Limb

Femur/Hip: Anteroposterior Upper – Supine, Anteroposterior Lower – Supine, Lateral – Lower (Rolled), Lateral – Upper (Horizontal Ray), Lateral – Lower (Horizontal Ray)

Knee: Intercondylar Notch – Supine, Lateral Rosenberg – Erect, Skyline (Laurin) – Seated, Anteroposterior – Supine

Foot/Toes: Dorsoplantar, Lateral, Oblique, Weight-bearing Dorsoplantar, Weight-bearing Lateral, Toes Dorsoplantar

Ankle: Anteroposterior – Supine, Lateral, Ankle Mortise – Supine

Tivia/Fibula: Anteroposterior – Supine, Lateral