openEHR Clinical

Welcome to the openEHR Clinical course!

This course was created in collaboration with Rosaldo Oy and your facilitator, Dr. Kanthan Theivendran, who is also a Consultant Orthopaedic Surgeon, a board member for openEHR UK, and a participant in openEHR International's Clinical Program Board. He developed the course materials and will guide you through the content.

Whether you're taking this course with a team or on your own, we highly encourage you to engage with the material and communicate with your peers and the facilitator. Asking questions, commenting, and discussing topics will help you explore the concepts from different perspectives.

Upon completion, you'll also be eligible to receive a certificate.

This course, designed for clinical professionals, explores how the openEHR standard can improve healthcare. It focuses on how openEHR can support innovation and offer advantages to healthcare professionals.

Key topics include:

- **Clinical Focus:** Because openEHR is clinically led, it helps ensure that systems are built to reflect real-world clinical practice and workflows.

- **Modular and Patient-Centric Design:** Learn how a modular, patient-centered approach can lead to more flexible and effective healthcare systems.

- **Real-World Examples:** See how openEHR has been successfully implemented in various projects.

- **Value-Based Healthcare:** The course also covers how openEHR can support value-based healthcare and integrate with emerging technologies.

TRAINING CONTENT

The training is structured into sections as follows:

Section 1: Introduction of the trainer

Section 2: openEHR Fundamentals and Benefits

Section 3: Value-based Healthcare (VBHC) and openEHR

Section 4: Real-World Applicatons and Case Studies
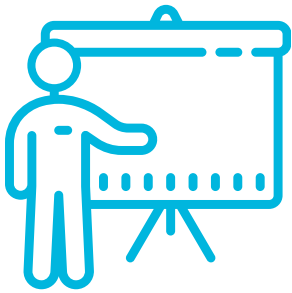
Section 5: Emerging Technologies

Section 6: Takeaways

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## SECTION 1: Introduction of the trainer

The course facilitator is introduced in this section. You will get a brief overview of the instructor's background, expertise in openEHR, clinical informatics experience, and qualifications relevant to teaching this course.

SECTION 2: openEHR Fundamentals and Benefits

This section exlains the basics of openEHR and the benefits it offers from a clinicians perspective.

What is openEHR?

This part introduces openEHR as an **open and interoperable electronic health record (EHR) approach** that promotes data separation from applications. This design prevents data lock-in and ensures long-term accessibility of clinical information. You will learn its core principles, including its **two-level modelling design**, which comprises a stable Reference Model for technical infrastructure and an Archetype Model for defining clinical concepts.
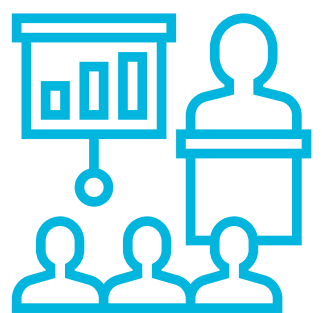
openEHR boosting clinical innovations and re-use of data

This part demonstrates how openEHR actively **boosts clinical innovation** by providing an open, vendor-neutral, and semantic architecture that supports the development and implementation of technologies like telemedicine, precision medicine, remote patient monitoring, and patient portals. Examples include initiatives like openOutcomes, Catalonia Health Service, and the Universal Care Plan in London.

Benefits of openEHR from the clinical perspective

In this part the candidates will explore the significant **benefits from a clinical perspective**. These include **improved data quality** through structured data entries that reduce ambiguity and ensure completeness, a **reduced documentation burden** by allowing templates to be reused across different scenarios, **enhanced clinical decision support** via real-time alerts and evidence-based prompts, and ultimately, **better patient care** achieved through a unified patient record accessible across various care settings.
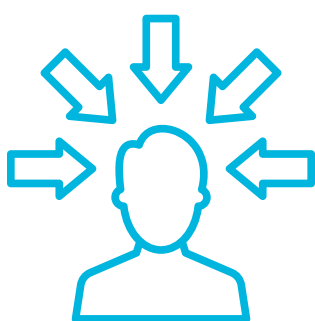
Patient-centric, modular EHR using openEHR

This part explains openEHR's crucial role in creating **patient-centric modular EHR systems**. Here, clinical data is separated from applications and stored in an openEHR Clinical Data Repository (CDR), enabling a 'plug and play' approach for integrating multiple specialised applications. This architecture allows systems to evolve as technology changes without losing or corrupting health data and facilitates seamless information flow between different healthcare facilities and systems.

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openEHR is clinically led, what does it mean?

This part highlights how openEHR is fundamentally **clinician-led**. Its applications are designed based on clinician needs, with active involvement from healthcare professionals in developing, reviewing, and validating clinical models, known as archetypes and templates.

SECTION 3: Value-Based Healthcare (VBHC) and openEHR

This section exlains the concept of Value-Based Healthcare and the role of openEHR in supporting VBHC initiatives.

This part delves into the concept of **Value-Based Healthcare (VBHC)**, defined by Michael Porter as "Value = Patient outcomes / Cost of delivering outcomes". It emphasises a fundamental shift in healthcare from a focus on the quantity of services provided to the quality and value of those services, ensuring patient-centric care and measuring outcomes and costs for every patient. The core purpose of VBHC is to enhance the overall value delivered to patients through better health outcomes, focusing on key outcomes such as capability, comfort, and calm.

You will learn about the crucial role of **Patient-Reported Outcome Measures (PROMs)**. PROMs are direct feedback from patients about their treatment outcomes, reflecting their experiences, quality of life, and functional status. PROMs serve as a key performance indicator in Value-Based Healthcare, but traditional collection methods often involve paper, leading to siloed, unstructured, and non-standardised data.

The course also details **how openEHR specifically supports VBHC and PROMs initiatives**. It enables the use of **standardised archetypes for common PROMs**, allowing for their structured data capture and seamless integration with other clinical data within the same record. This includes computable expression of scoring algorithms and longitudinal tracking of outcomes, transforming raw PROM data into actionable insights for benchmarking and research. openEHR's flexible data structures and versioning model capture every change in PROM records for tracking patient progress.

## SECTION 4: Real-World Applications and Case Studies

This section provides **practical examples of openEHR's successful implementation and its real-world impact** in diverse healthcare contexts.

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The first significant case study presented is the **Universal Care Plan (UCP) London**. This collaborative initiative aims to digitally share care and support wishes for every Londoner with healthcare professionals across the Capital. Launched in 2022 and hosted by NHS South West London, the UCP has evolved from an End of Life Advanced Care Plan into a broader personalised care and support plan, supporting over 74,000 living Londoners. The UCP is **built on openEHR standards** and integrates with systems like the London Care Record, providing frontline staff with a secure, summary view of a person's health and care information wherever they are in London. This integration significantly improves care coordination, helps prevent delays, and avoids the duplication of investigations.

You will also gain insight into the **transformation of Finnish healthcare** through the Lifecare EHR system. Lifecare EHR, which holds a leading market share in Finland's healthcare IT market, has evolved from legacy systems into an openEHR-based platform since 2022. This innovative solution has enhanced patient data management, improved workflow efficiency, and facilitated regional integration across eight collaborating counties. Supporting 3 million inhabitants and 100,000 active users, Lifecare EHR demonstrates the power of clinician involvement and continuous development in creating user-focused and practical digital solutions.

And finally we will introduce **openOutcomes VBHC Learning Health Systems**: This module highlights openOutcomes as an innovative platform explicitly designed for Powering Value-Based Healthcare and Learning Health Systems by harnessing data and insights to improve healthcare delivery.
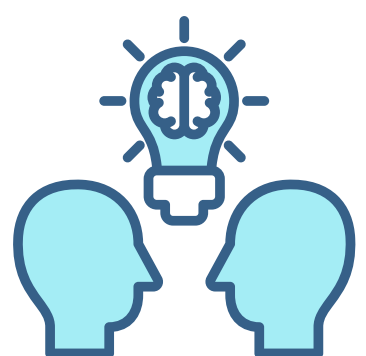
SECTION 5: Emerging Technologies

This section introduces use of emerging technologies in connection with openEHR.

Leveraging AI Ambient Voice Dictation for openEHR

This part explores the cutting-edge application of **AI Ambient Voice Dictation in conjunction with openEHR**. You will gain an understanding of how this innovative technology continuously records clinical conversations without disrupting workflows, automatically transcribes spoken words into accurate text, and significantly reduces clinician administrative burden by automating documentation efforts.

The focus is on the workflow that transforms voice data into structured openEHR data. This process involves AI utilising advanced speech recognition and natural language processing to accurately capture clinical narratives and seamlessly map them to defined openEHR archetypes and templates. This ensures the creation of **structured and standardised clinical data representation**, which in turn enhances data consistency and usability for downstream applications.

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We also highlight the profound **benefits of structured openEHR data for querying and analysis**. This structured approach enables fast and efficient data retrieval, supports comprehensive clinical decision support systems with timely alerts and treatment recommendations, and provides high-quality datasets essential for training AI models. Such high-quality data can lead to improved AI model accuracy, better predictive analytics, and the advancement of personalised medicine. This integration showcases exciting future possibilities for enhancing clinical documentation and overall data utility in healthcare.

SECTION 6: Takeaways from the training

This section concludes the most important takeaways from the training.

You can also get a certificate of completion!