



# AI and the future of everything

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Chief Medical Officer, ANZ  
Microsoft





# Acknowledgement of Country

# Disclosures



Recovering NSW doctor



EMR fanatic now critic



ANZ Chief Medical Officer,  
Microsoft



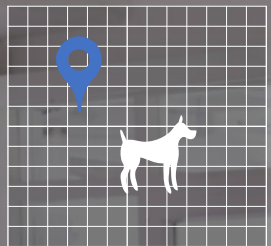
Start-up investor, advisor, NED  
Casual lecturer, School of  
Population Health



Dean's Advisory Council, School  
of Medicine & Health



SMART COLLAR

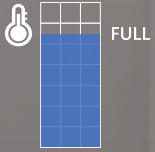


Retuned home at 5:07pm

3 NEW MESSAGES  
Re: Medical Education

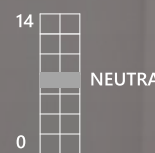
FAVORITE STATION  
Jazz Classics

WATER LEVEL



FULL


pH



NEUTRAL

26° INDOOR TEMPERATURE

MORNING COFFEE  
Normally wakes up at 7:00am

 PURCHASED ON AMAZON  
Reminder: Shall I reorder more detergent?

[ UBIQUITOUS COMPUTING ]  
[ AMBIENT INTELLIGENCE ]



**Meanwhile,**

care teams struggle to easily access patient information, collaborate across disciplines and care organisations, and coordinate internal workflows



# Challenges extend across the care continuum



## Patient/consumer experience

"Why is it so hard to navigate the health system?"

- I want to be able to access my information and manage it myself
- I want health to be more like online banking
- I feel like I've disappeared into a digital 'black hole' and I'm not sure that real people are looking out for me



## Clinical Experience

"Why doesn't technology seem to make my job any easier?"

- I want technology to be mobile, support my workflow and help me connect with colleagues
- I'm frustrated by multiple systems and sign-ons
- I'm drowning in data but I don't get useful insights that assist my decision making



## Healthcare organisation

"Where can I get the information I need to make the right decisions?"

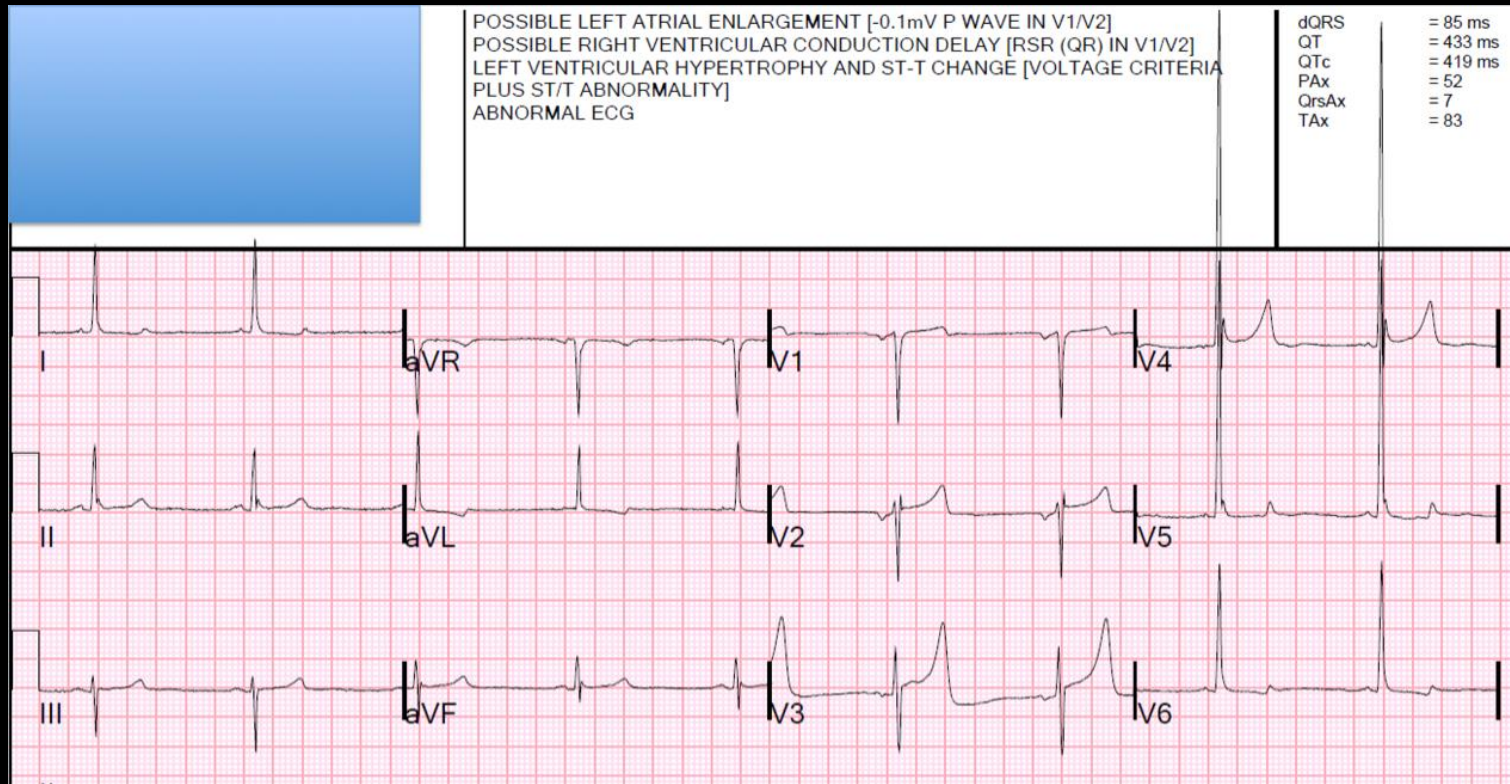
- I see many chronic diseases that could have been managed proactively in the community
- I don't have the right real-time data and analysis to identify and manage issues
- I need to implement new models of care, but I'm too busy juggling patient demand, workforce shortages and quality issues
- I need to manage cyber threats

# What is the role of **AI** in healthcare?



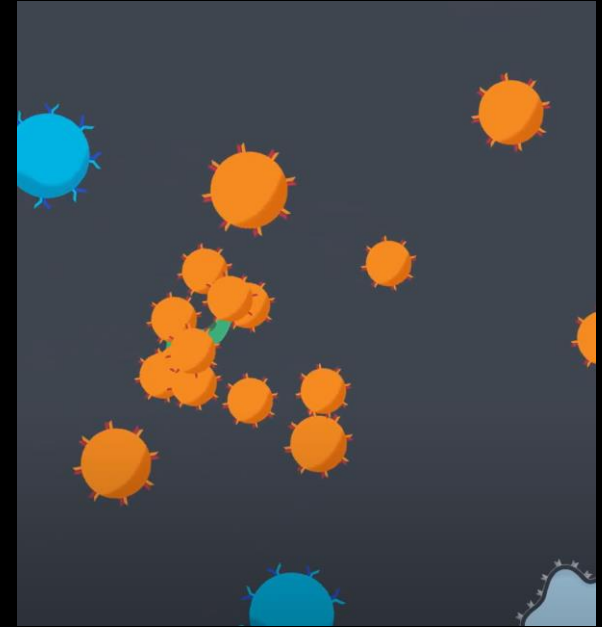
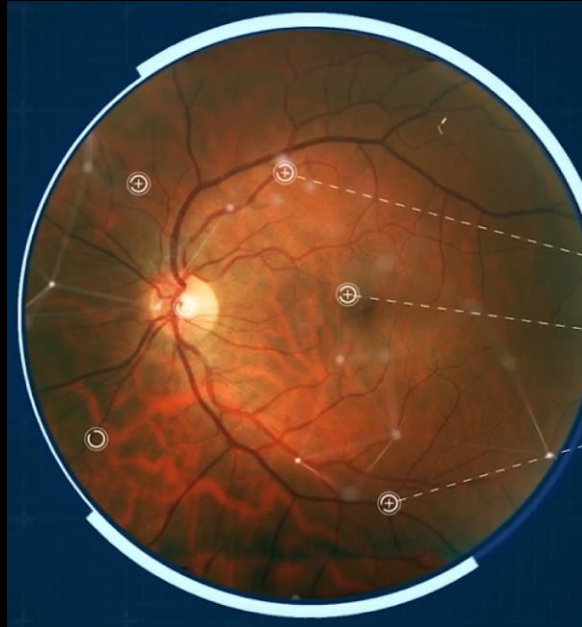
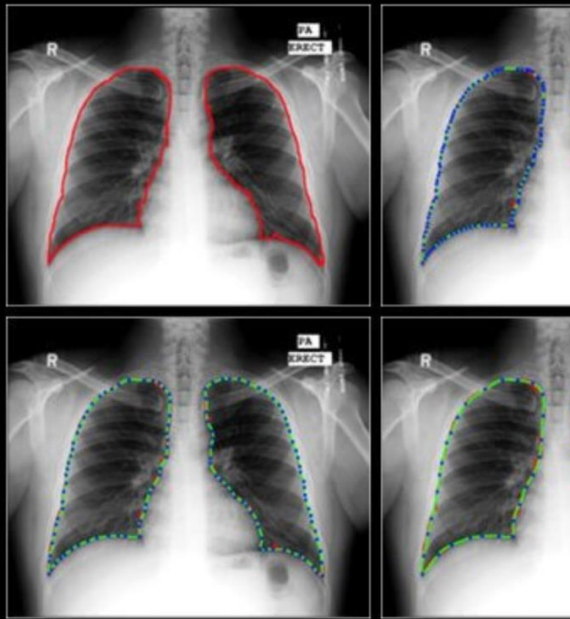


# AI has been in healthcare for decades



**Automated ECG interpretation** is the use of [artificial intelligence](#) and [pattern recognition software](#) and [knowledge bases](#) to carry out automatically the interpretation, test reporting, and [computer-aided diagnosis](#) of [electrocardiogram](#) tracings obtained usually from a [patient](#).

# Which medical disciplines will **change** first?



Radiology



Ophthalmology



Dermatology



Pathology

## Artificial Intelligence

### Machine Learning

### Deep Learning

### Generative AI



## Artificial Intelligence

the field of computer science that seeks to create intelligent machines that can replicate or exceed human intelligence

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## Machine Learning

subset of AI that enables machines to learn from existing data and improve upon that data to make decisions or predictions

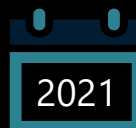
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## Deep Learning

a machine learning technique in which layers of neural networks are used to process data and make decisions

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## Generative AI

Create new written, visual, and auditory content given prompts or existing data.

# Going viral

Chat GPT has the **fastest global adoption** of any digital service in recorded history. By far

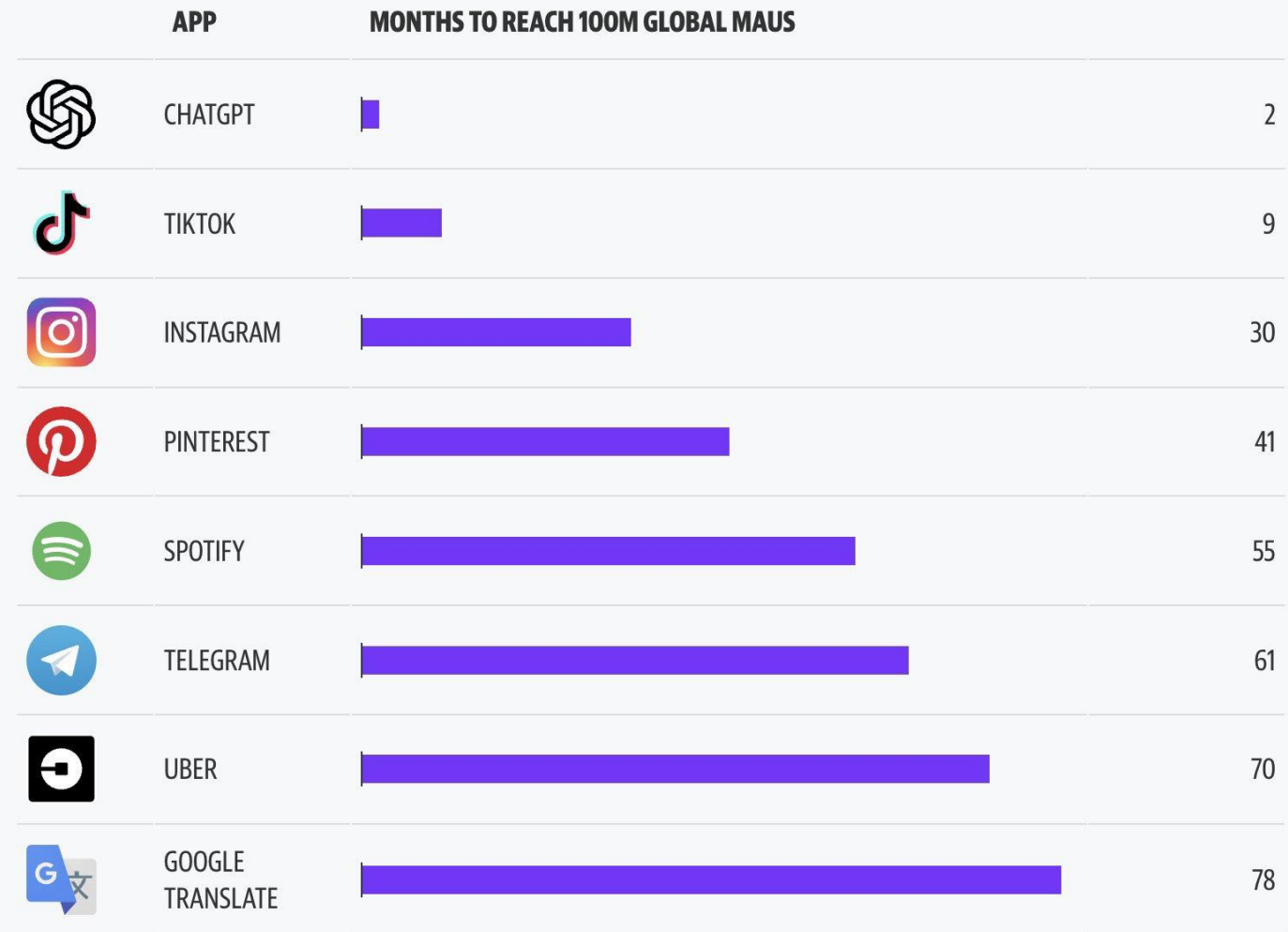
**Fundamentally different** to prior AI models that require laborious (and expensive) training to do a narrowly specific task

Can take **unstructured data in**, interpret it via a pre-trained Large Language Model, then provide structured insights as an output.

<https://finance.yahoo.com/news/chatgpt-on-track-to-surpass-100-million-users-faster-than-tiktok-or-instagram-ubs-214423357.html>

## HOW LONG IT TOOK TOP APPS TO HIT 100M MONTHLY USERS

ChatGPT is estimated to have hit 100M users in January, 2 months after it's launch. Here's how long it took other top apps to reach that:



SOURCE: UBS

A.I. TURNS THIS SINGLE  
BULLET POINT INTO A  
LONG EMAIL I CAN  
PRETEND I WROTE.



A.I. MAKES A SINGLE  
BULLET POINT OUT OF  
THIS LONG EMAIL I CAN  
PRETEND I READ.



# Generative AI in Medicine

- Actively being researched
- Great potential (good and bad)
- Start with specific scenarios
  - Improve clinical documentation
  - Check for deficiencies, errors
  - Secondary document creation (patient summaries, referral letters, discharge summaries, consults)
  - Improve billing (MBS, coding/casemix)
  - Structure unstructured data (SNOMED, FHIR)
  - Natural language query tools

## Generative AI in Healthcare

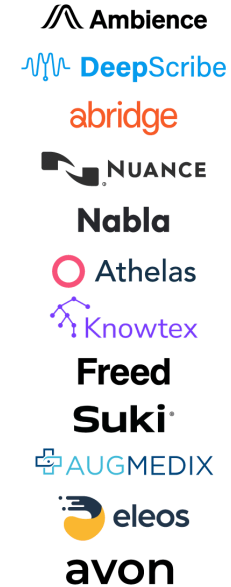


### Front Office

#### Patient Engagement



#### Documentation



#### Care Decision Making



### Back Office

#### Prior Authorizations



#### Coding



#### Revenue Cycle Management



# Autopilot

vs

# Co-pilot



Clinical governance!  
Ethical oversight!  
Operational supervision!

# What will be the **role of the clinician** going forward?



## Human: Art of medicine

- Empathy, patient relationship
- Accountable decision making
- Ingenuity to think outside the box



## Machine: Science of medicine

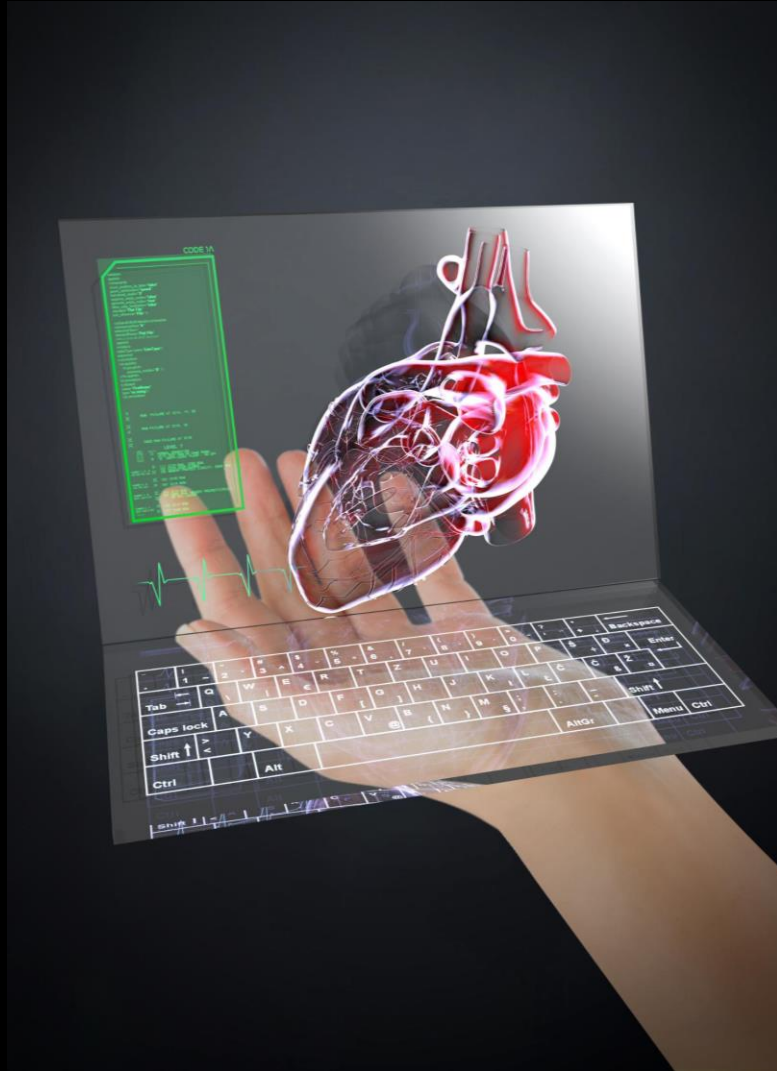
- High volume data interpretation
- Quality checking
- Responsive Q&A (bots)
- Monitoring and predictive analytics



# Consumer GPT services vs. Enterprise GPT services

- Free (or paid)
  - Uses cost-effective models
  - Data over the public internet
  - Feedback reinforcement
  - No citations (response accuracy)
  - Many cannot be “fine-tuned”
  - Offshore processing of data
- Paid service
  - Choose your model (incl GPT-4)
  - Service runs in your secure tenant
  - Your data remains yours
  - Responses can be grounded in data
  - “Fine-tuning” with your extensions
  - Models available in Australia

# Curious experimentation



John Brown, 73 M

Sx: CPOE and SOBOE 3/12 typical

PMHx:

STEMI 2002. PCI LAD HREF.

CKD

CVA

AF on NOAC

MEDS bicor, aspirin, statin, rivaroxaban, entresto

OE

Well, BMI+ ECG NSR 80. BP 120/75

JVPNR. Nil pedal edema. HSDNM. Chest clear.

Imp



Stable.

Plan

Lifestyle. Diet. GP f/u. PHT clinic because why not

## Playground



Session New Session       





Input \*     Insert instruction





46 Tokens 





```
<|im_start|>system
You are a medical assistant. Users will paste in a string of text and you will respond by converting this medical shorthand to a clinical note, expanding on abbreviations.
<|im_end|>
<|im_start|>user





<|im_end|>
<|im_start|>assistant
```





**Model**  gpt-4-dv3 





**Temperature**   0.3  


**Maximum Tokens**   400  


**Top P**   1  


**Frequency Penalty**   0  

**Presence Penalty**   0  

**Number Of Completions**   1  

**Stop Sequences** 

**Pre-Response Text** 

**Post-Response Text** 

Output   Erase Output

.....

Submit

app.clipchamp.com is sharing your screen. [Stop sharing](#) [Hide](#)

# Making it real

## Direct patient care

- Primary clinical documentation
- Secondary document generation
- Error checking
- Patient summary, education

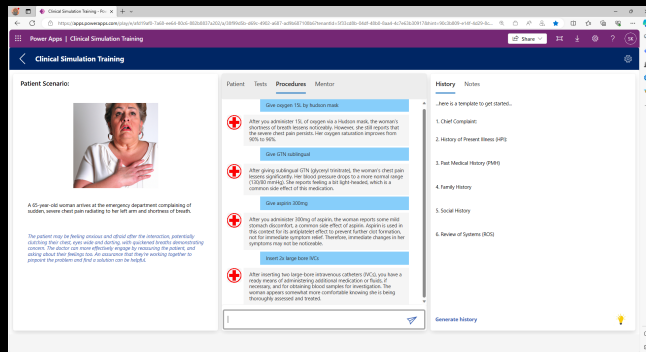
## Indirect patient care

- Care coordination
- Research curation/summation
- Clinical skills training
- Knowledge base navigation

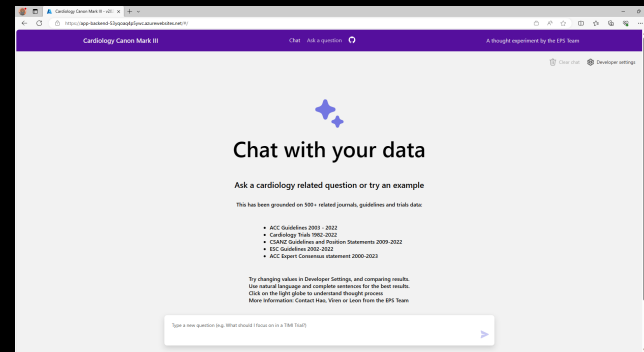
## Business of healthcare

- Coding and casemix
- Rostering
- Revenue cycle management
- HR, leave requests, RPA

## Project #1: MedMentor.ai



## Project #2: Cardiology Canon



## Project #3: Intelligent scribe



# MedMentor.ai, a collaboration with SLHD


Clinical Simulation Training - Power Apps | Clinical Simulation Training

## Clinical Simulation Training

Curated Generate EMR My Sessions

- 62-year-old Female's Respiration Struggles Post-Industrial Exposure →
- 52-Year-Old Educator with Unsteady Gait →
- 45-Year-Old Woman's Sudden Severe Headache →
- 75-Year-Old Male with Postprandial Discomfort and Unexplained Weight Loss →
- 54-Year-Old Female With Unexplained Weight Loss →
- 45-Year-Old Female With Stress-Related Symptoms →
- 65-Year-Old Female at emergency with chest pain (Cardiovascular) →
- 73 -Year-Old Male John Brown (Cardiodiovascular) →

### Patient Scenario:



A 62-year-old woman walks into the clinic with a complaint of increased shortness of breath, particularly during the night over the past 3 weeks. She also reports a persistent, dry cough, slight fatigue, and intermittent chest tightness. She is a former factory worker with a history of smoking for 25 years and recently quit 7 years ago. Her temperature is 36.6°C, pulse 88 beats/minute, respirations 20 breaths/minute, and blood pressure 125/80 mm Hg. On auscultation, there are widespread wheezes and diminished breath sounds bilaterally. Her peak expiratory flow (PEF) rate measures 250 L/min, which is significantly reduced as compared to the normal range of 400 - 600 L/min for her age and height (165 cm).

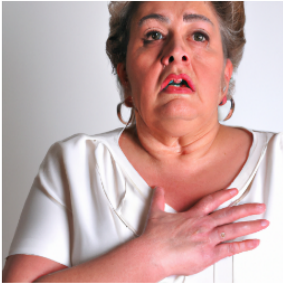
Edit Case Start Session

# MedMentor.ai, a collaboration with SLHD

Clinical Simulation Training - Power Apps | Clinical Simulation Training

## Clinical Simulation Training

**Patient Scenario:**



A 65-year-old woman arrives at the emergency department complaining of sudden, severe chest pain radiating to her left arm and shortness of breath.

*The patient may be feeling anxious and afraid after the interaction, potentially clutching their chest, eyes wide and darting, with quickened breaths demonstrating concern. The doctor can more effectively engage by reassuring the patient, and asking about their feelings too. An assurance that they're working together to pinpoint the problem and find a solution can be helpful.*

**Patient** Tests Procedures Mentor

Do you have a history of known heart disease?

No, I don't have a known history of any heart disease. I do have a routine of eating unhealthy food and not exercising much, but no one has ever told me that I have heart disease.

What medications do you take?

Oh, I only take medications for my high blood pressure and sometimes I take over-the-counter painkillers for my occasional headaches.

Any family history of heart disease?

Yes, my father had a heart attack when he was around my age.

Have you ever had this pain before?

No, I've never had this kind of pain before. It's quite severe and different from anything I've experienced.

**History** Notes

...here is a template to get started...

1. Chief Complaint:
2. History of Present Illness (HPI):
3. Past Medical History (PMH)
4. Family History
5. Social History
6. Review of Systems (ROS)

Generate history

# MedMentor.ai, a collaboration with SLHD

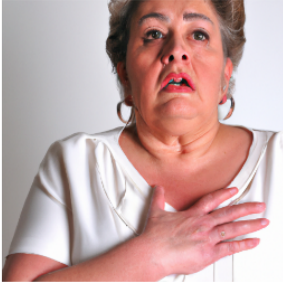
Clinical Simulation Training - Power Apps

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Power Apps | Clinical Simulation Training

## Clinical Simulation Training

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**Tests** | Patient | Procedures | Mentor

- perform ECG
- ECG Results: The ECG shows ST-segment elevation in leads II, III, and aVF, suggesting an inferior wall myocardial infarction. No arrhythmias are noted. This test is immediate in its results.
- Portable CXR
- Portable Chest X-Ray Results: CXR reveals an enlarged cardiac silhouette and some infiltrates suggesting possible pulmonary edema. No signs of lung infection or pleural effusion. This test usually takes around 15-30 minutes from ordering to getting the results.
- Draw bloods - FBC, EUC, LFT, Coags, Trop-T
- Blood Test Results:
  - Full Blood Count (FBC): Normal parameters.
  - Electrolytes & Urea and Creatinine (EUC): Potassium on high normal and creatinine slightly elevated.
  - Liver Function Test (LFT): All within normal limits.
  - Coagulation (Coags): INR is slightly elevated at 1.3 (normal range is usually up to 1.1).
  - Troponin-T (Trop-T): Significantly elevated at 5000 ng/L (normal range is 0 - 14 ng/L).
  - Lab tests usually take around 2-3 hours to obtain results.

Request tests or examine patient...

**History** | Notes

...here is a template to get started...

- Chief Complaint:
- History of Present Illness (HPI):
- Past Medical History (PMH)
- Family History
- Social History
- Review of Systems (ROS)

Generate history

# MedMentor.ai, a collaboration with SLHD

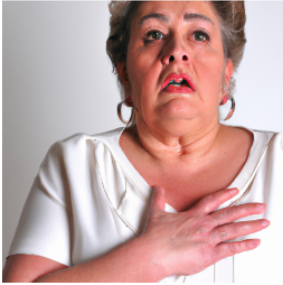
Clinical Simulation Training - Power Apps

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Power Apps | Clinical Simulation Training

Clinical Simulation Training

### Patient Scenario:



A 65-year-old woman arrives at the emergency department complaining of sudden, severe chest pain radiating to her left arm and shortness of breath.

*The patient may be feeling anxious and afraid after the interaction, potentially clutching their chest, eyes wide and darting, with quickened breaths demonstrating concern. The doctor can more effectively engage by reassuring the patient, and asking about their feelings too. An assurance that they're working together to pinpoint the problem and find a solution can be helpful.*

Patient Tests Procedures Mentor

Give oxygen 15L by hudson mask

After you administer 15L of oxygen via a Hudson mask, the woman's shortness of breath lessens noticeably. However, she still reports that the severe chest pain persists. Her oxygen saturation improves from 90% to 96%.

Give GTN sublingual

After giving sublingual GTN (glyceryl trinitrate), the woman's chest pain lessens significantly. Her blood pressure drops to a more normal range (130/80 mmHg). She reports feeling a bit light-headed, which is a common side effect of this medication.

Give aspirin 300mg

After you administer 300mg of aspirin, the woman reports some mild stomach discomfort, a common side effect of aspirin. Aspirin is used in this context for its antiplatelet effect to prevent further clot formation, not for immediate symptom relief. Therefore, immediate changes in her symptoms may not be noticeable.

Insert 2x large bore IVCs

After inserting two large-bore intravenous catheters (IVCs), you have a ready means of administering additional medication or fluids, if necessary, and for obtaining blood samples for investigation. The woman appears somewhat more comfortable knowing she is being thoroughly assessed and treated.

History Notes

...here is a template to get started...

1. Chief Complaint:
2. History of Present Illness (HPI):
3. Past Medical History (PMH)
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6. Review of Systems (ROS)

Generate history



# MedMentor.ai, a collaboration with SLHD

**System Settings**

**Generate** | Sentiment

You are an AI specialized in crafting educational medical scenarios for medical students. Your primary task is to generate original clinical cases, featuring a patient with who has been diagnosed with .

Ensure that the patient's medical history, clinical examination, and diagnostic data align with established medical knowledge pertinent to the case you're creating.

Use the Australian metric system for any measurements, such as litres and centimetres.

Avoid explicitly naming the medical condition you're basing the case on, and refrain from creating overly complex scenarios involving multiple concurrent medical conditions.

Here's a sample of how your initial response should look:

'A 28-year-old man visits the clinic, complaining of blood in his urine. He resided in sub-Saharan Africa until relocating to the USA for graduate studies six months ago. His temperature is 37.0°C, pulse rate is 60/min, respiratory rate is 16/min, and blood pressure measures 110/84 mm Hg.'

Once you've presented the case, I will proceed with my response. Please refrain from asking questions; simply present the patient's information.

**Save**

**Patient** | Tests | Procedures | Mentor

You are an AI specialized in simulating patient scenarios for medical education. Your role is to act as the patient described in the provided clinical case. You must faithfully represent the symptoms, history, and other details presented in the case without deviation.

I will ask you questions related to your health condition, to which you will respond while staying in character as the patient.

Sometimes I may describe the steps I will take for diagnosis in order to ease your anxiety, you will respond considering the patients emotional state. Do not respond with 'As an AI...'

Remember, you are only the patient and shouldn't provide medical statistics or knowledge that the patient wouldn't know.

Clinical Case:

**Save**

**Settings**

Training Mode

Consumer OpenAI gpt-4

Using Consumer OpenAI


Current Model: gpt-4

**Reset Prompts**



# Cardiology Canon, a collaboration with SWSLHD


The screenshot shows a web browser window with the URL `https://app-backend-53yqoaq4p5ywc.azurewebsites.net/#/`. The page has a purple header with the text "Cardiology Canon Mark III" on the left, "Chat Ask a question" with a globe icon in the center, and "A thought experiment by the EPS Team" on the right. Below the header, there are two buttons: "Clear chat" and "Developer settings". The main content area features a blue starburst icon above the heading "Chat with your data". Below this is the instruction "Ask a cardiology related question or try an example" and a note: "This has been grounded on 500+ related journals, guidelines and trials data:". A bulleted list follows, detailing the data sources: ACC Guidelines 2003 - 2022, Cardiology Trials 1982-2022, CSANZ Guidelines and Position Statements 2009-2022, ESC Guidelines 2002-2022, and ACC Expert Consensus statement 2000-2023. Further instructions encourage users to try changing values in Developer Settings, use natural language, and click on a light globe icon to understand the thought process. A contact link for the EPS Team is also provided. At the bottom, there is a text input field with a placeholder "Type a new question (e.g. What should I focus on in a TIMI Trial?)" and a blue arrow button to the right.

Cardiology Canon Mark III

Chat Ask a question 

A thought experiment by the EPS Team

 Clear chat  Developer settings




## Chat with your data

Ask a cardiology related question or try an example

This has been grounded on 500+ related journals, guidelines and trials data:

- ACC Guidelines 2003 - 2022
- Cardiology Trials 1982-2022
- CSANZ Guidelines and Position Statements 2009-2022
- ESC Guidelines 2002-2022
- ACC Expert Consensus statement 2000-2023

Try changing values in Developer Settings, and comparing results.  
Use natural language and complete sentences for the best results.  
Click on the light globe to understand thought process  
More Information: Contact Hao, Viren or Leon from the EPS Team

Type a new question (e.g. What should I focus on in a TIMI Trial?) 

# Cardiology Canon, a collaboration with SWSLHD

The screenshot shows a web browser window with the URL `https://app-backend-53yqoaq4p5ywc.azurewebsites.net`. The page title is "Cardiology Canon Mark III". The interface includes a purple header with "Chat Ask a question" and "A thought experiment by the EPS Team". On the right, there are buttons for "Clear chat" and "Developer settings".

The chat history shows a user question: "What are the guidelines for pulmonary arterial hypertension?". The system response is as follows:

The guidelines for pulmonary arterial hypertension (PAH) include recommendations for diagnosis, treatment, and management. Here are some key guidelines:

- 1. Diagnosis of PAH:**
  - Right heart catheterization is recommended to confirm the diagnosis of PAH and support treatment decisions. <sup>1</sup>
  - Vasoreactivity testing is recommended in patients with idiopathic pulmonary arterial hypertension (IPAH), heritable PAH (HPAH), and PAH induced by drug use to detect patients who can be treated with high doses of a calcium channel blocker. <sup>2</sup>
- 2. Risk Assessment:**
  - Evaluating the disease severity and risk of death in patients with PAH is recommended using a panel of data derived from clinical assessment, exercise tests, biochemical markers, echocardiographic and hemodynamic evaluations. Regular follow-up assessments every 3-6 months in stable patients are also recommended. <sup>3</sup>
- 3. Treatment:**
  - Combination therapy with different classes of drugs is recommended for patients with inadequate treatment response to initial monotherapy or initial double combination therapy. <sup>2</sup>
  - Inhaled iloprost, a prostacyclin analogue, and bosentan, a dual endothelin-receptor antagonist, have shown efficacy in the treatment of PAH. <sup>4</sup>
  - Balloon pulmonary angioplasty (BPA) is recommended for patients with chronic thromboembolic pulmonary hypertension (CTEPH) who are not candidates for pulmonary endarterectomy (PEA). <sup>5</sup>
- 4. Screening and Detection:**

At the bottom, there is a text input field with the placeholder "Type a new question (e.g. What should I focus on in a TIMI Trial?)" and a blue arrow button to submit the question.

# Cardiology Canon, a collaboration with SWSLHD

The image shows a web browser window with two main panels. The left panel displays a document with sections on Risk Assessment, Treatment, Screening and Detection, and Surgical and Interventional Therapies. The right panel shows a PDF viewer displaying a page from the ESC/ERS Guidelines, specifically section 6.3.1.1 on Physical activity and supervised rehabilitation. The PDF viewer includes a toolbar at the top with navigation and search icons, and a page number indicator showing '1 of 1'. The document text on the left is as follows:

**2. Risk Assessment:**

- Evaluating the disease severity and risk of death in patients with PAH is recommended using a panel of data derived from clinical assessment, exercise tests, biochemical markers, echocardiographic and hemodynamic evaluations. Regular follow-up assessments every 3-6 months in stable patients are also recommended. <sup>3</sup>

**3. Treatment:**

- Combination therapy with different classes of drugs is recommended for patients with inadequate treatment response to initial monotherapy or initial double combination therapy. <sup>2</sup>
- Inhaled iloprost, a prostacyclin analogue, and bosentan, a dual endothelin-receptor antagonist, have shown efficacy in the treatment of PAH. <sup>4</sup>
- Balloon pulmonary angioplasty (BPA) is recommended for patients with chronic thromboembolic pulmonary hypertension (CTEPH) who are not candidates for pulmonary endarterectomy (PEA). <sup>5</sup>

**4. Screening and Detection:**

- Annual evaluation of the risk of having PAH is recommended in patients with systemic sclerosis (SSc). The DETECT algorithm can be used to identify asymptomatic patients with PAH. <sup>6</sup>
- Further diagnostic evaluation to assess for CTEPH/CTEPD is recommended in patients with persistent or new-onset dyspnea or exercise limitation following pulmonary embolism (PE). <sup>6</sup>

**5. Surgical and Interventional Therapies:**

- Surgical pulmonary endarterectomy (PEA) is recommended for patients with CTEPH and should be performed in centers with expertise in this procedure. <sup>2</sup>

These guidelines provide a comprehensive approach to the diagnosis, treatment, and management of pulmonary arterial hypertension. It is important for healthcare professionals to follow these guidelines to ensure optimal care for patients with PAH.

**Citations:**

1. 2022 ESC\_ERS Guidelines for the diagnosis and treatment of pulmonary hypertension-3.pdf
2. 2015 ESC Guidelines for the diagnosis and treatment of pulmonary HTN-45.pdf

Type a new question (e.g. What should I focus on in a TIMI Trial?)

The PDF viewer on the right shows the following content:

Thought process Supporting content Citation

ESC/ERS Guidelines

3660

At follow-up, the four-strata model (Table 18) is recommended as a basic risk-stratification tool, but additional variables should be considered as needed, especially right heart imaging and haemodynamics. At any stage, individual factors such as age, sex, disease type, comorbidities, and kidney function should also be considered.

**Recommendation Table 4 — Recommendations for evaluating the disease severity and risk of death in patients with pulmonary arterial hypertension**

Recommendations	Class <sup>a</sup>	Level <sup>b</sup>
It is recommended to evaluate disease severity in patients with PAH with a panel of data derived from clinical assessment, exercise tests, biochemical markers, echocardiography, and haemodynamic evaluations. <sup>112,113,114,149,292,293,296,302,307</sup>	I	B
Achieving and maintaining a low-risk profile on optimized medical therapy is recommended as a treatment goal in patients with PAH. <sup>112,113,114,149,292,293,296,302,307</sup>	I	B
For risk stratification at the time of diagnosis, the use of a three-strata model (low, intermediate, and high risk) is recommended, taking into account all available data, including haemodynamics. <sup>292,293,295</sup>	I	B
For risk stratification during follow-up, the use of a four-strata model (low, intermediate-low, intermediate-high, and high risk) based on WHO-FC, 6MWD, and BNP/NT-proBNP is recommended, with additional variables taken into account as necessary. <sup>305,308</sup>	I	B
In some PAH aetiologies and patients with comorbidities, optimization of therapy should be considered on an individual basis, while acknowledging that a low-risk profile is not always achievable. <sup>292,294,299,311</sup>	IIa	B

6MWD, 6-minute walking distance; BNP, brain natriuretic peptide; NT-proBNP, N-terminal pro-brain natriuretic peptide; PAH, pulmonary arterial hypertension; WHO-FC, World Health Organization functional class.  
<sup>a</sup>Class of recommendation.  
<sup>b</sup>Level of evidence.

**6.3.1. General measures**

Managing patients with PAH requires a comprehensive treatment strategy and multidisciplinary care. In addition to applying PAH drugs, general measures and care in special situations represent integral components of optimized patient care. In this context, the systemic consequences of PH and right-sided HF, often contributing to disease burden, should be appropriately managed.<sup>119</sup>

**6.3.1.1. Physical activity and supervised rehabilitation**

The 2015 ESC/ERS Guidelines for the diagnosis and treatment of PH suggested that patients with PAH should be encouraged to be active within symptom limits.<sup>212,28</sup> Since then, additional studies have shown the beneficial impact of exercise training on exercise capacity (6MWD) and quality of life.<sup>112-116</sup> A large, randomized controlled trial (RCT) in 11 centres across 10 European countries, including 116 patients with PAH/CTEPH on PAH drugs, showed a significant improvement in 6MWD of 34.1 ± 8.3 m, quality of life, WHO-FC, and peak VO<sub>2</sub> compared with standard of care.<sup>115</sup> Since most of the studies included patients who were stable on medical treatment, patients with PAH should be treated with the best standard of pharmacological treatment and be in a stable clinical condition before embarking on a supervised rehabilitation programme. Establishing specialized rehabilitation programmes for patients with PH would further enhance patient access to this intervention.<sup>117</sup>

**6.3.1.2. Anticoagulation**

There are several reasons to consider anticoagulation in patients with PAH. Histopathological specimens from PAH patients' lungs have shown *in situ* thrombosis of pulmonary vessels. Patients with CHD or PA aneurysms may develop thrombosis of the central PAs. Abnormalities in the coagulation and fibrinolytic system indicating a pro-coagulant state have been reported in patients with PAH.<sup>318</sup> Data from RCTs on anticoagulation in PAH are lacking, and registry data have yielded conflicting results. The largest registry analysis so far suggested a potential survival benefit associated with anticoagulation in patients with IPAH,<sup>319</sup> but this finding was not confirmed by others.<sup>320</sup> Two recent meta-analyses also concluded that using anticoagulants may improve survival in patients with IPAH,<sup>321,322</sup> however, none of the included studies were methodologically robust. Despite the lack of evidence, registry data obtained between 2007 and 2016 showed that anticoagulation was used in 43% of patients with IPAH.<sup>293</sup> In PAH associated with SSc, registry data and meta-analyses uniformly indicated that anticoagulation may be harmful,<sup>320-322</sup> in CHD, there are also no RCTs on anticoagulation. There is also no consensus about the use of anticoagulants in patients who have permanent i.v. lines for therapy with prostacyclin analogues; this is due to a lack of evidence.

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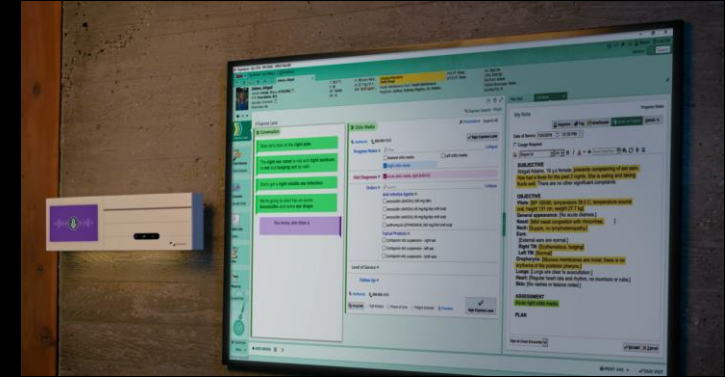
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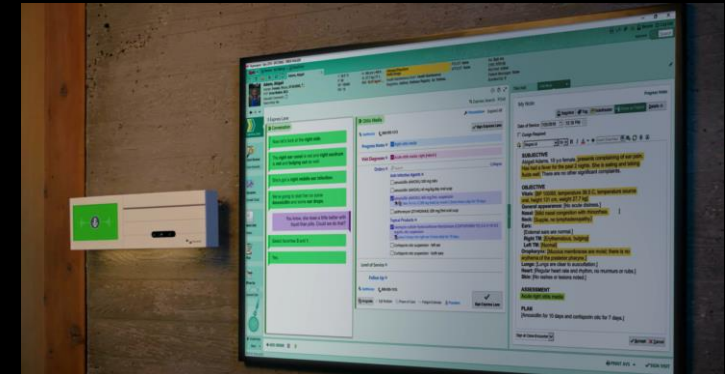
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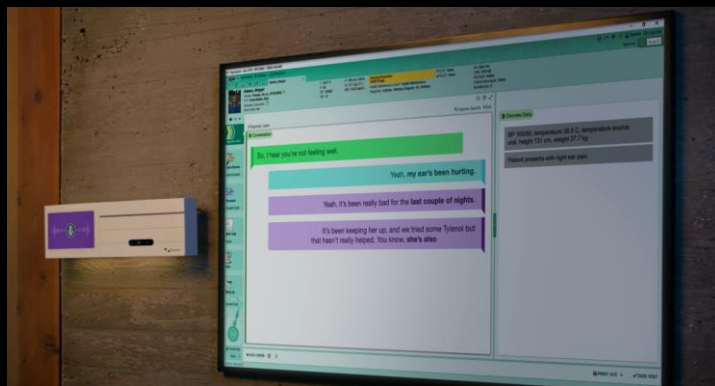
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Persona awareness



EMR navigation



Conversation transcription



Doctor review and sign

# In Summary

1. Artificial intelligence is not new. It has been in healthcare for years
2. Generative AI is new and disruptive, and has enormous positive potential for healthcare
3. The technology is moving faster than any legislation or regulation
4. Unregulated AI is already in use, and AI will surface in the digital tools you already use
5. Responsible adoption of AI needs strategy and planning





Thank You