



@twitterhandle

Beyond the EMR

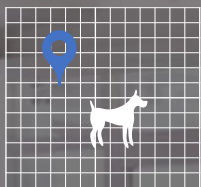
How voice recognition and AI
turn Promise into Productivity

Dr. Simon Kos

Chief Medical Officer
Microsoft ANZ



SMART COLLAR



Returned home at 5:07pm



FAVORITE STATION

Jazz Classics

3 NEW MESSAGES

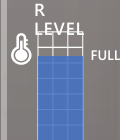
Re: Medical Education



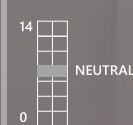
26°

INDOOR
TEMPERATURE

WATER LEVEL



pH



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



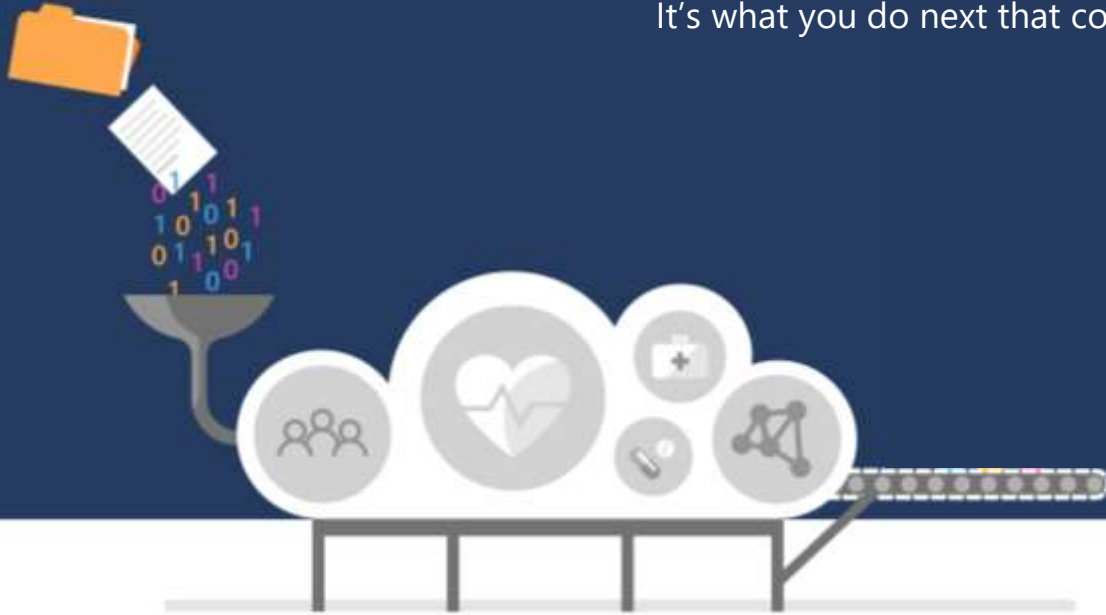
Healthcare organisation

"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

Digitisation is not transformation

It's what you do next that counts...



Systems of record

Convert paper records and manual processes into useable digital records with the benefits of legibility, accessibility, availability and additional security.



Systems of insight

Aggregate information from multiple sources for a holistic view and insights that reveal past performance, facilitate real-time decision making and predict issues before they arise.



Our workforce challenge

- GP shortfall of **11,392 (28%) full-time General Practitioners (GPs)** by 2030
- Shortage of over than **123,000 nurses** by 2030
- **58%** of clinicians in Australia admit their job leaves them feeling burnout
- **81%** of clinicians said administrative burden with documentation is a contributor to exhaustion/overload feelings



Clinical voice recognition addresses administrative fatigue




- **Voice reduces the burden of repeatable, onerous tasks in the EMR:**
 - Simplified, intuitive navigation
 - Streamlined request of investigations and order sets
- **Voice increases adoption of the EMR:**
 - Voice enabled templates to improve the experience
- **Voice is the foundation for “Ambient clinical intelligence”**
 - Increasingly interaction within the EMR is voice driven
 - Increases quality 1:1 doctor/patient engagement
 - Removes clicks and typing – no back turned to patient

2018



Strategic partnership accelerates the delivery of ambient technologies to reduce clinician burnout by enabling doctors to focus on patients





EmpowerMD: Medical conversations to medical intelligence

Liz is married to Ed. Has a daughter, Hannah, at the UW and a dog, Gemly. "I watch television shows about cooking. I take pictures of my food."

CC: Patient is a 48-year-old woman with a new diagnosis of breast cancer

History of Present Illness

This is my husband, Ed.


So **three weeks** ago, you had a concerning screening **mammogram**, sounds like.

Yeah. And just after that, a **mammogram** with an **ultrasound**.

Then I had a **needle biopsy**.

Followed by **genetic testing**. And what else?

And then you had a **CT** of your **chest**, which is the one I saw.



Review of Systems

You mentioned that you have **headaches** sometimes.


Any **trouble swallowing**, **pain when you swallow**, anything like that?


Okay. And how about have you noticed that your **breathing** has changed at all, any?

Do you ever get any **chest pain** or that **heart racing feeling**?

How about your **belly**? Any trouble with **abdominal pain**, **diarrhea**, **constipation** or...

Any other symptoms like **light headedness** or **trouble sleeping**?

Watch on  **YouTube**

Watch on  **YouTube**

Hi, I'm Dr. **Herman**. Nice to meet you.

Doctor

Thanks for coming in.

Patient

This is my husband, **Ed**.

Doctor

Hi, great to meet you, **Ed**. Thanks for coming in, being a support today.

So I'm the **oncologist** here at this office. There's a team of us.

And you've been referred by your **PCP** to **talk** about your situation with your **breast mass** and next steps to go from there.

Part of this visit will be for me to get to know your story a little bit.

I've **read** through your **chart** but I'd like to kind of hear from you.

And then we'll **talk** about the next steps, about moving forward.

I'm guessing this has been kind of a crazy, scary journey for you thus far.

Patient


Yeah, it hasn't been a normal **three weeks** for sure.

Doctor

Yeah, I'm guessing that's true.


Patient

Yeah.

- ### Watch Next
- 


Artificial Intelligence and the Future of Healthcare and Biotech

February 1, 2023

Speakers: [Jonathan M. Cantor](#), Anil D Turbel, [Tom Sparrow](#), et al.
- 


Panel discussion: Ambient clinical intelligence the next frontier of AI

October 18, 2022

Speakers: [Kam Hingor](#), [Tae Kyoung Cho](#), [Gregory J. Moore, MD PhD](#), et al.
- 


Dead-end Discovery: How offline reinforcement learning could assist healthcare decision-makers

February 2, 2023

Speakers: [Mehdi Fatemi](#)
- 


Our Genomes, Our Selves?

December 1, 2021

Speakers: [Dr. Sohrab Ramachandran](#)
- 

Research talk: Causality for medical image analysis

October 28, 2021

Speakers: [Daniel Coelho de Castro](#)
- 

Research talks: Showcasing health equity, access and resilience collaborations

October 20, 2021

Speakers: [Bramma Goodwin](#), [Rocio Laveaga](#)

Project EmpowerMD: Medical conversations to medical intelligence

The Intelligent Scribe captures doctor patient conversations and creates medical intelligence to generate a medical note.

Date: February 6, 2019

2020

Nuance and Microsoft announce the integration of Dragon Ambient eXperience and Microsoft Teams for virtual telehealth consults

”

Our strategic partnership with Microsoft, which led to this rapid integration of Nuance DAX with Microsoft Teams for telehealth, illustrates the ongoing [importance of combining our technologies, domain expertise and market reach](#) to develop advanced cloud-based conversational AI solutions that keep the health of clinicians and patients front and center in healthcare delivery.

-- Diana Nole, executive vice president, and general manager of healthcare, Nuance



“AI is technology’s most important priority, and health care is its most urgent application”

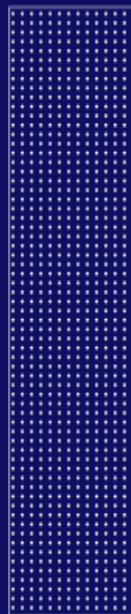
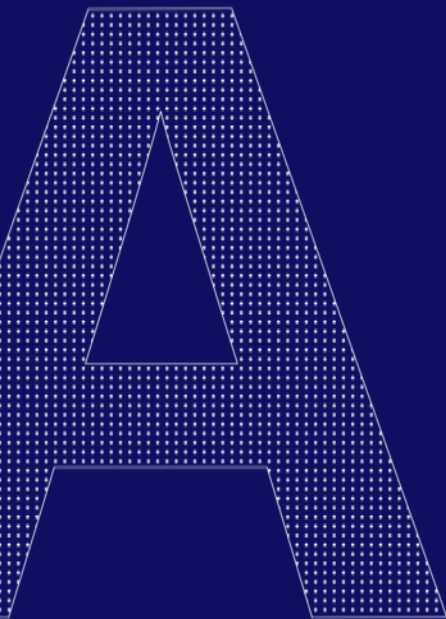
Satya Nadella, Apr 2021



Microsoft



Bringing complementary capabilities coming together



Precision clinical
voice recognition

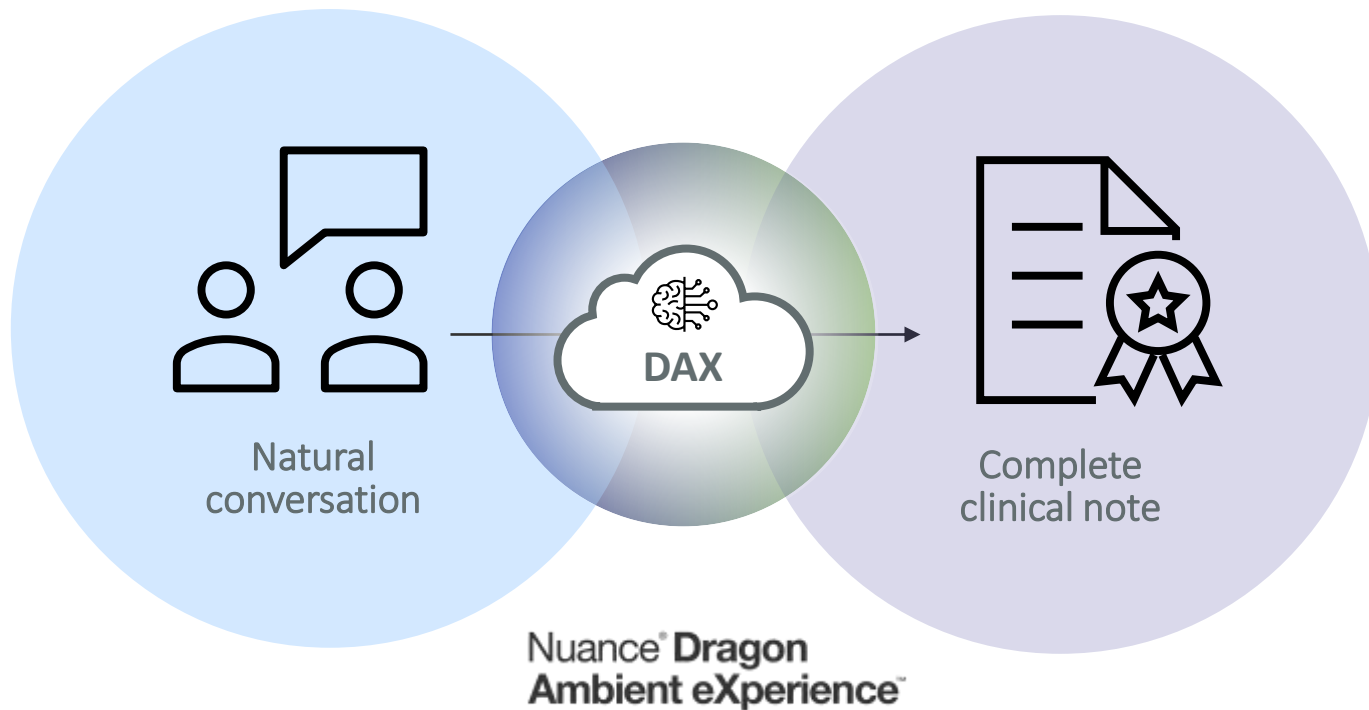


Multiparty
ambient AI

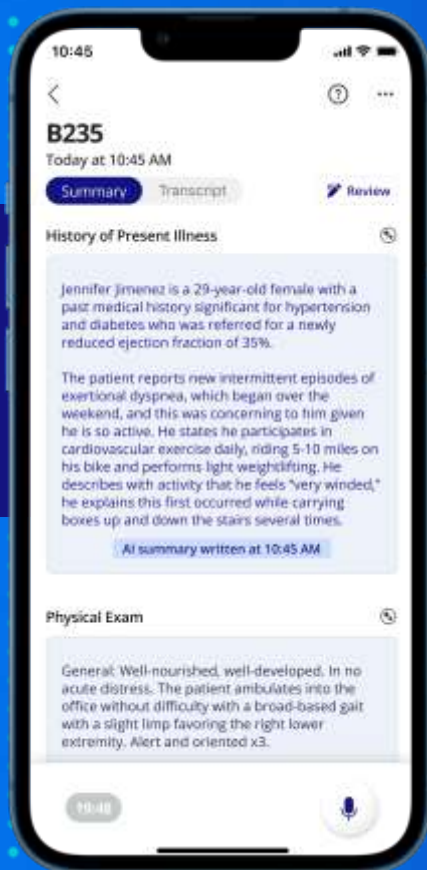


Generative AI

Voice recognition + Generative AI = Clinical Documentation



DAX™ Express



Trained on millions
of encounters



Standard
format



Integrated with
Dragon Medical One



Available
in seconds



Scalable

Integrated in the workflow, fully automated clinical documentation that delivers a draft patient note for clinician review, editing, and signature.

What is different about the exam room of the future?



Q&A? Thank you!