



By Wefight

When chatbots meet patients in order to assist Hospitals Pharmacists



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Conflict of Interest & Disclosure

- Benoît Brouard is CEO of Wefight.

Self Assessment & questions?

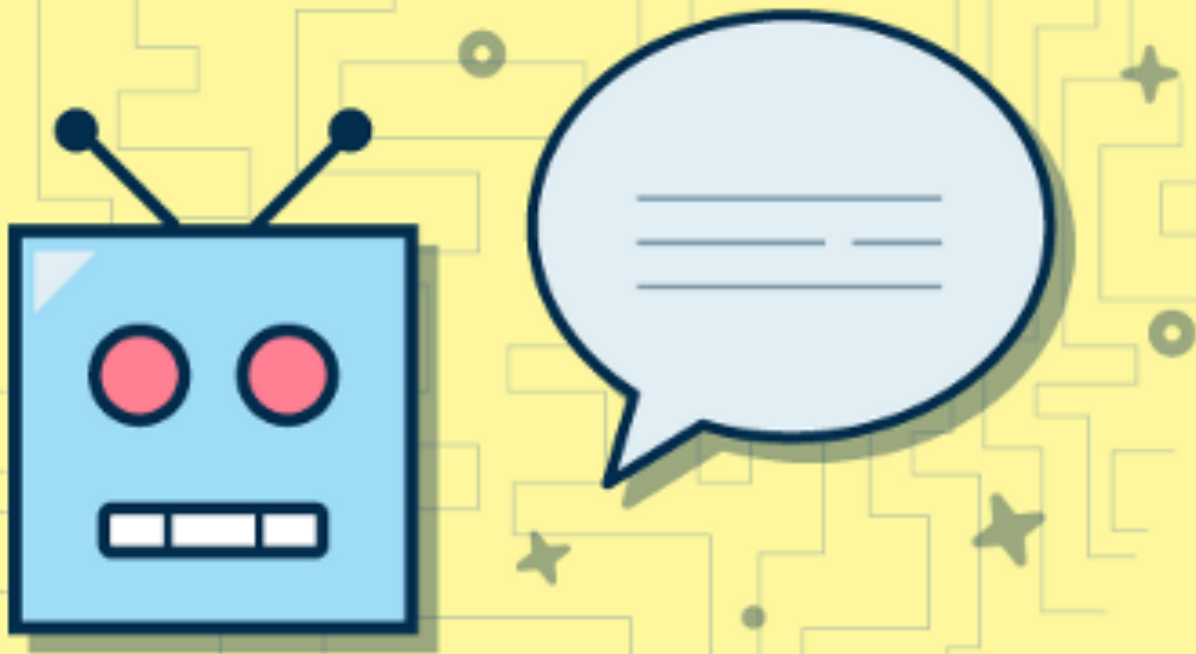
- Do you think that chatbots and AI have limits?
- Do you think that challenges remain for a successful implementation?



Learnings objectives

- Understand the limits of the artificial intelligence and more particularly the chatbots.
- Be aware of the challenges that remain to be addressed for a successful implementation.



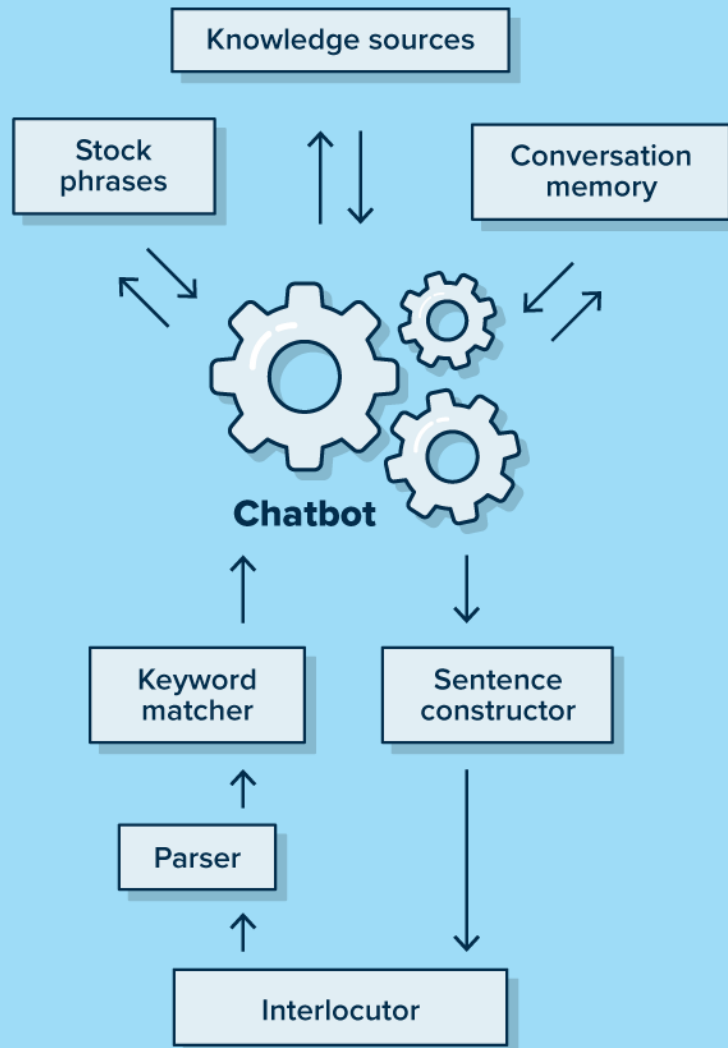


**A chatbot is a
computer program**

**that simulates an
intelligent
conversation**

**Via auditory or
textual methods**

How Do Chatbots Work?



This diagram above shows how a basic chatbot processes the input from a human (interlocutor) and constructs a reply.

1. Understands user's input
2. Manages a conversation
3. Answers

Limitations?



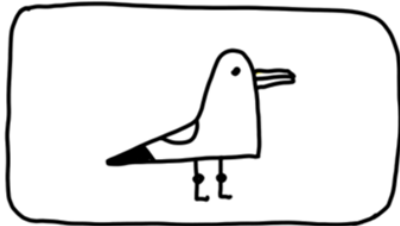
Language + Context



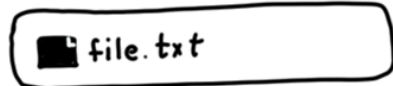
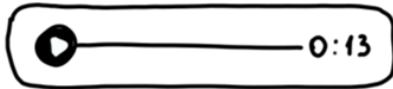
MESSAGES

HARP SEALS, LIKE MANY SEAL SPECIES DEPEND ON SEA ICE FOR THEIR SURVIVAL.

- TEXT + EMOJI ♥



- IMAGES & GIF
- VIDEO



- AUDIO
- FILES

STRUCTURED MESSAGES

BUTTON TEMPLATE

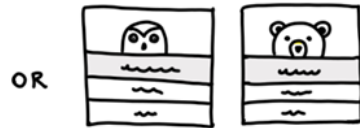
WHAT IS TRUE ABOUT HARP SEAL PUP?
CUTE!
CUTE?
CUTE ♥

- TEXT + BUTTONS

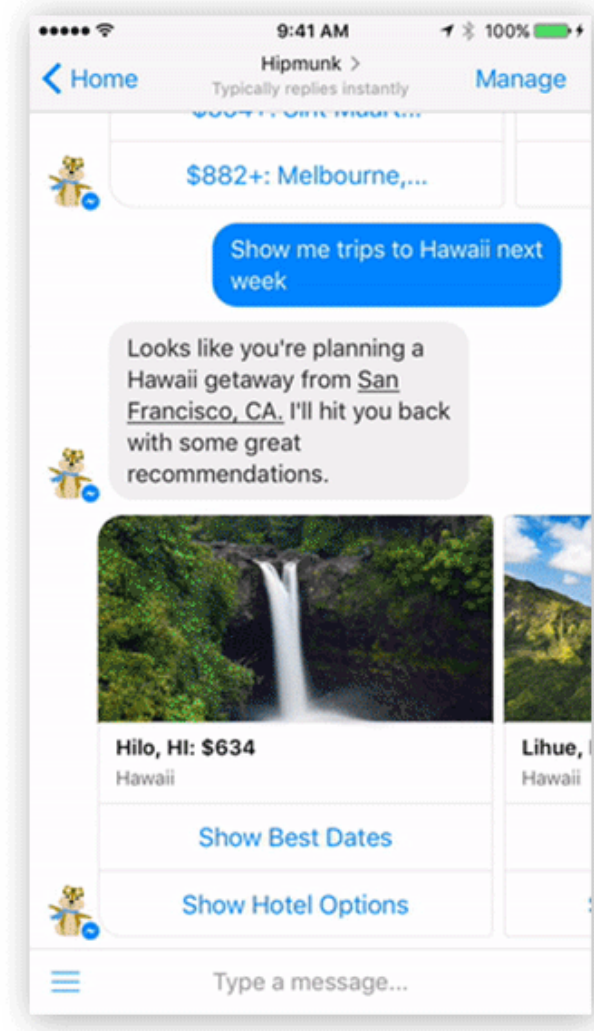
GENERIC TEMPLATE

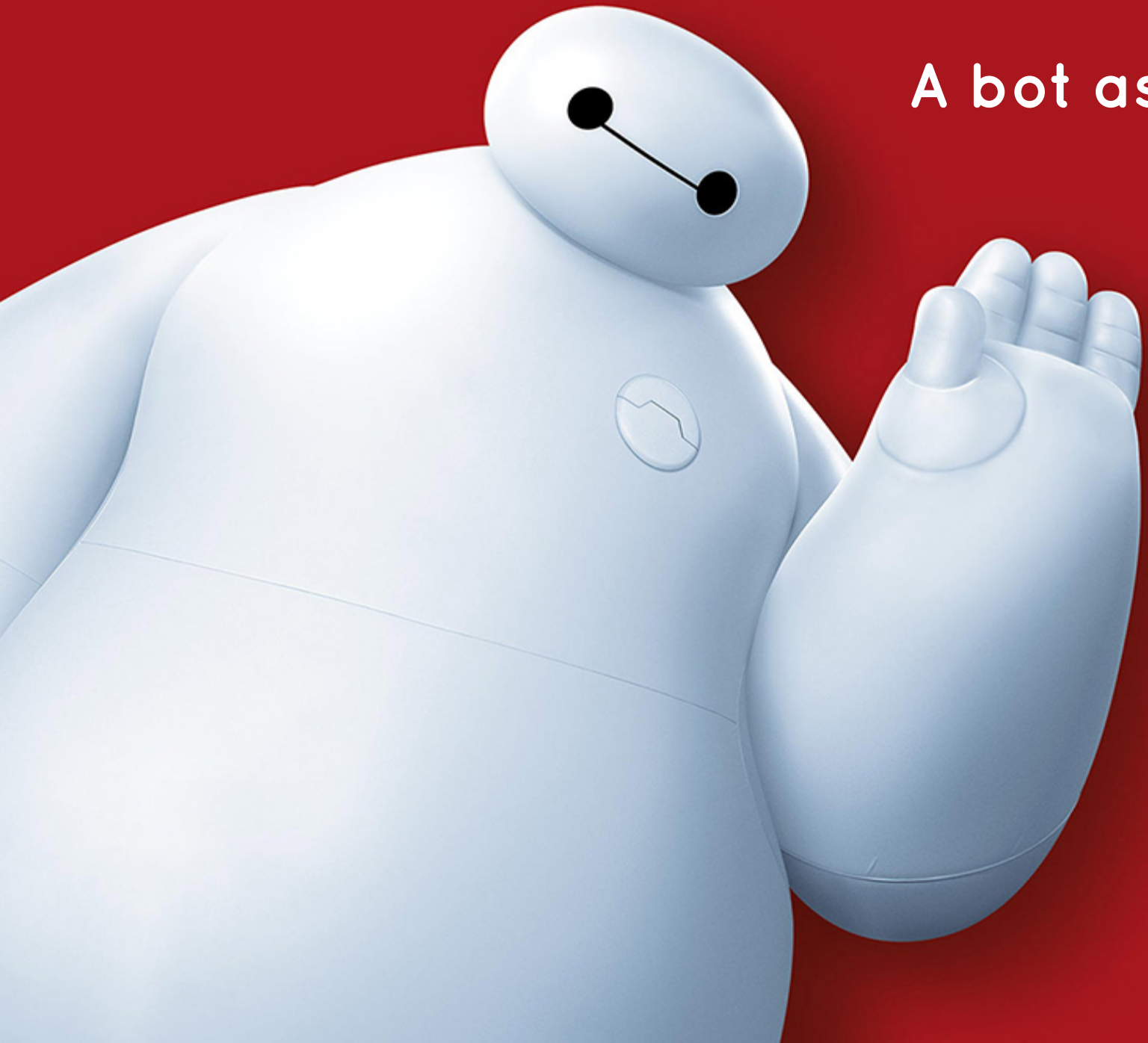

HARP SEAL Threatened with extinction
VIEW PHOTOS
WHY?

CAROUSEL



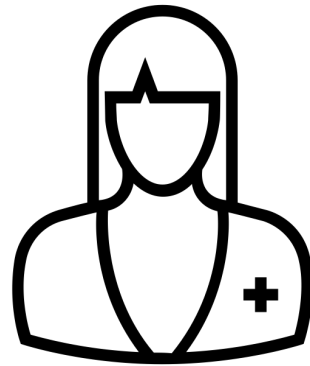
- IMAGE
- TITLE & SUBTITLE
- BUTTONS





A bot as a doctor/pharmacist?

Or a new player in the healthcare pathway?



Have you met Vik?

The 24*7 Virtual Companion for patients with cancer or chronic disease. Worldwide.

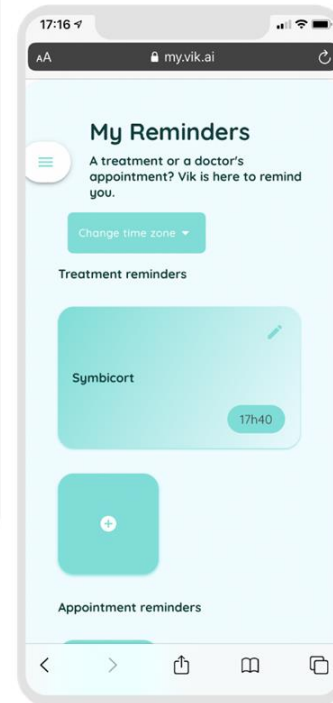
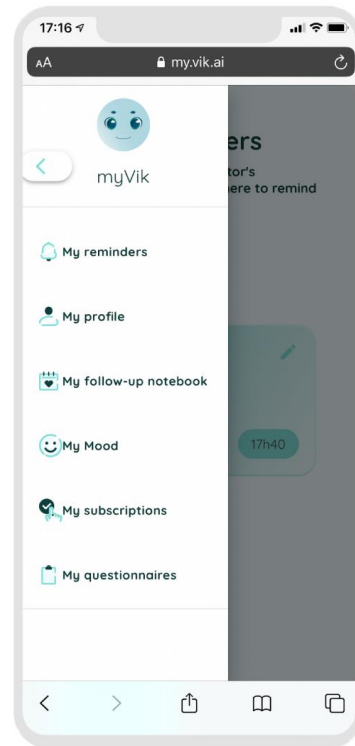


Hello

Hello, I'm Vik 🤖 the little robot 🤖. Are you affected by Asthma? I am here to guide you, answer your questions and more.

First of all, can you tell me if you are a Patient 🤔 or a Relative 👨👩👧👦?

Patient 🤔 Relative 👨👩👧👦



- Easily available to patients via iOS, Android, Web and Messenger.
- Direct Patient Acquisition through digital Ads.
- No need to go through Doctors.
- Conversational + graphic interface.
- Contents & features.

Study #1: is a chatbot able to provide quality medical information?

Turing test:

“a test of a machine’s ability to exhibit intelligent behaviour equivalent to, or indistinguishable from, that of a human”

The INCASE trial

A world premiere in healthcare

Objective

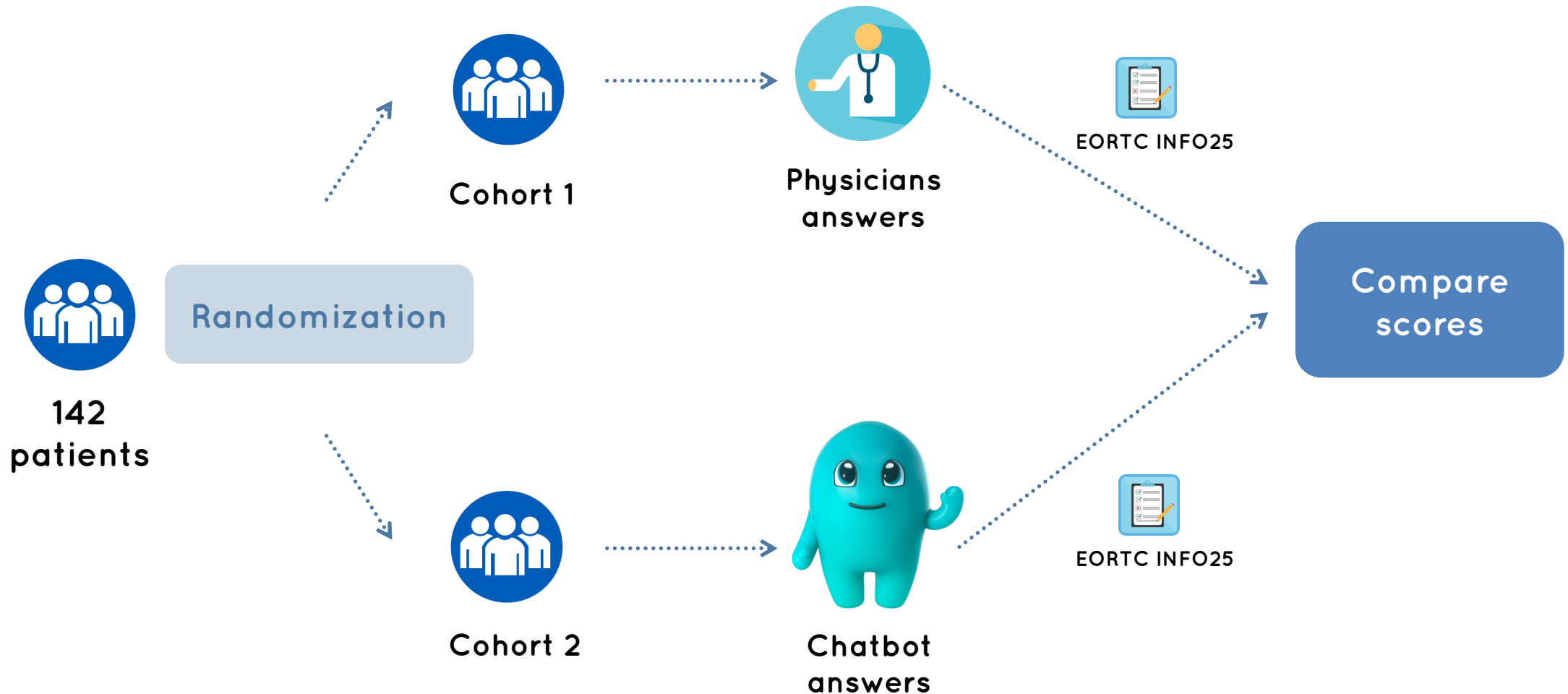
Verify whether an artificial conversational agent like Vik was able to provide medical information to patients with breast cancer with a level of satisfaction similar to the answers given by a group of physicians.

Methodology

Randomized, controlled, blind, prospective trial.



The INCASE trial



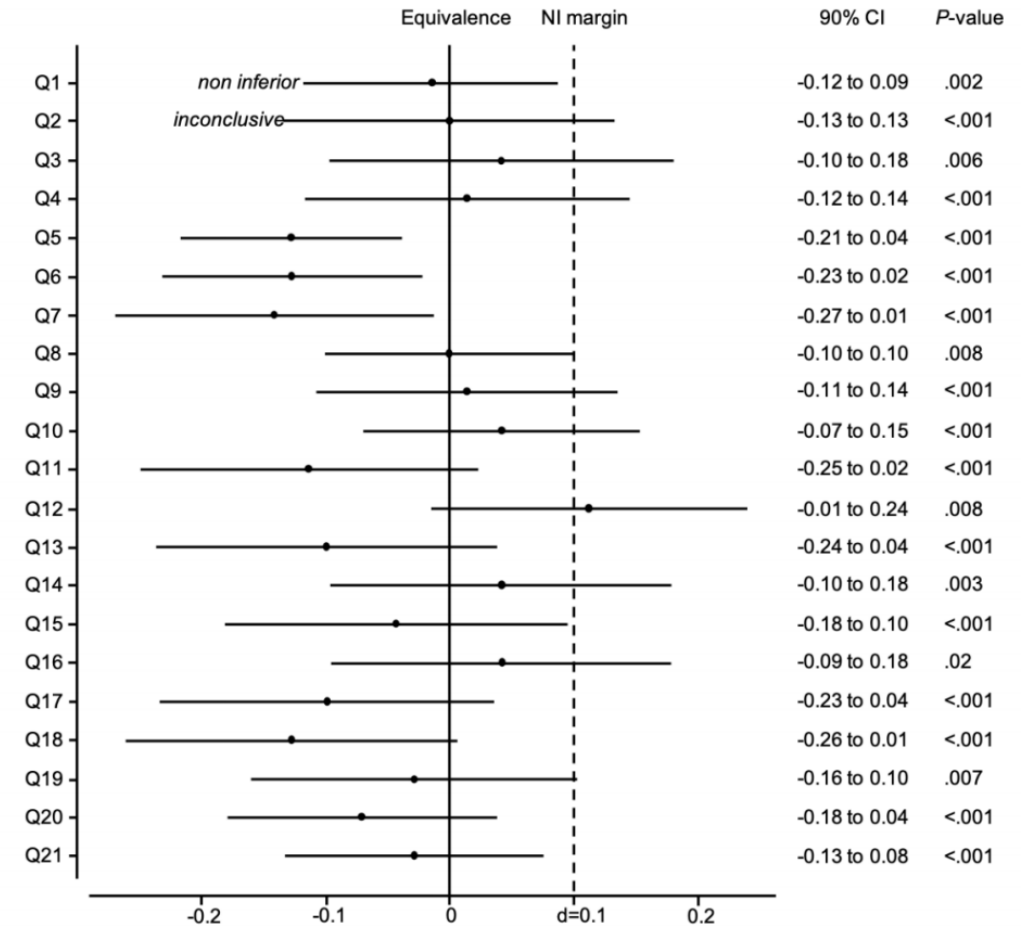
The INCASE trial

- Patients with breast cancer received answers from the chatbot or from a multidisciplinary committee of physicians including a surgeon, a medical and a radiation oncologist
- 142 patients were randomized
- Non-inferiority trial: the chatbot's answer had to be as good as the physicians' answers

The INCASE trial

Results

- Two groups of 71 patients
- Mean age of 42 years (SD 19)
- The success rates (as defined by a score >3) was 69% (49/71) in the chatbot group versus 64% (46/71) in the physicians group.
- The binomial test showed the noninferiority ($P < .001$) of the chatbot's answers.



A significant step for AI in healthcare

- The first time a chatbot was assessed with the same methods used to evaluate a drug
- Published in a prestigious scientific journal
- Relayed and discussed in national press
- Sets the bar for the next studies in the field

Le Monde Se connecter S'abonner

SCIENCES - MÉDECINE



Cancer du sein : un robot pour renseigner les patientes

Un « bot » développé par une start-up française, donne des réponses aussi satisfaisantes que celles élaborées par des spécialistes, selon une étude sur 142 personnes.

Par Sandrine Cabut · Publié le 09 décembre 2019 à 02h08 · Mis à jour le 09 décembre 2019 à 06h22

Lecture 2 min.

Article réservé aux abonnés



Study #2: Can a chatbot like Vik be used to engage patients and collect data?



Patient-Reported Outcomes (PRO) can be used to better understand the symptoms of patients



With PRO, the data collection process shifts away from the physician and back into the patients' hands



They have shown their interest in improving cancer patient's survival in two separate prospective studies



Difficulties in engaging patients and getting PRO without human interaction

Assessing the performances of a chatbot to collect direct-to-patients real-world data

Objective

Show that the collection and analysis of remote scores, without prior medical intervention, is possible by a chatbot perform remote diagnosis of the severity of the migraines assess the patient satisfaction and engagement with the chatbot

636 patients with migraine were included

Study #2

Results

Engagement

89.94% (572) participants had fully completed the questionnaire (8 items),

Self-Assessment

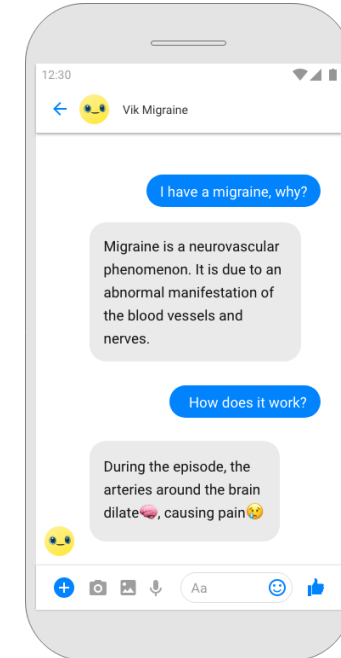
57.69% (330) participants had a severe migraine

20.80% (119) had a probable migraine

11.01% (63) did not meet diagnostic criteria

Satisfaction

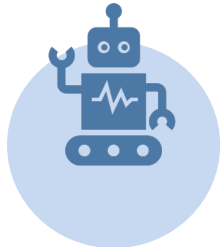
80.7% (513) of users agreed or strongly agreed with the affirmation that Vik Migraine provides quality answers about the pathology



Perspectives



What is the medical value of these new methods to inform patients and collect data?



What is the role of Artificial Intelligence in translating this into relevant tools that can be used in the daily clinical routine?



Can we leverage this to better personalize treatment and improve the patients' outcome?



Vik

By Wefight

Thank you

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