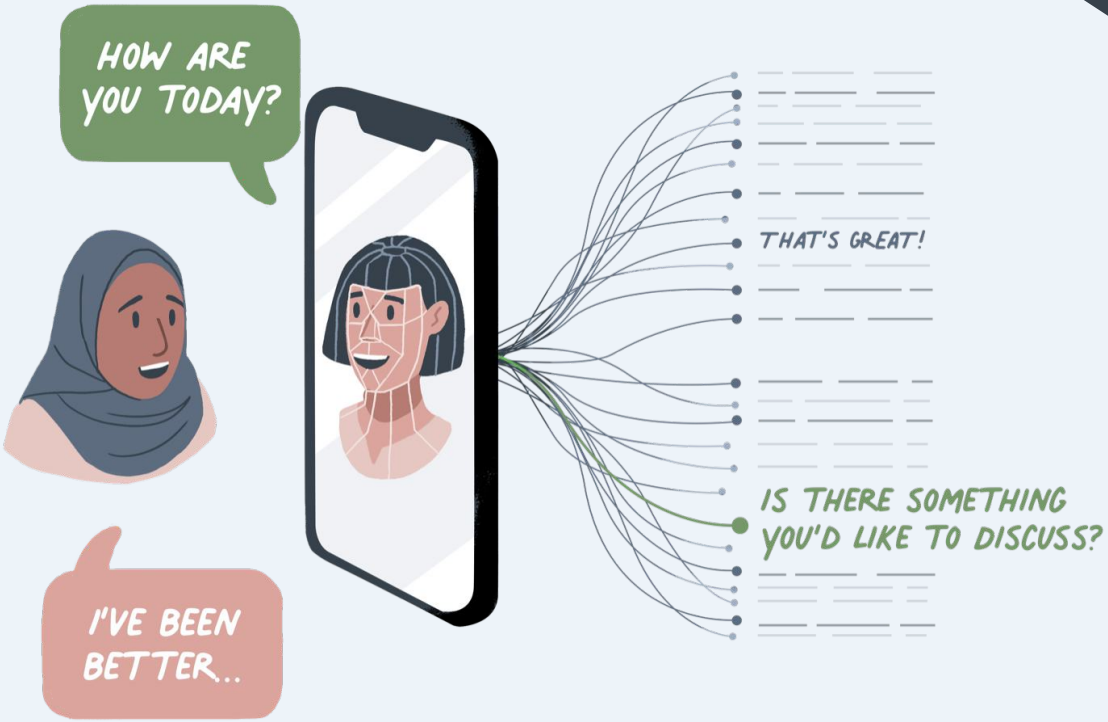
AI for Mental Healthcare Delivery

Using AI to help address psychosocial needs

The Alan Turing Institute



About

This case study was developed by The Alan Turing Institute in collaboration with the Foreign Commonwealth and Development Office, and was created to support 'The risks and opportunities of AI on humanitarian action' event held at Wilton Park (May 2024).

The case study discusses a hypothetical example of the use of AI in a specific humanitarian action, and is designed to support deliberation of key socio-technical risks and harms.

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Licensing Information

Download this case study and others on the Turing Commons GitHub repository: https://github.com/alan-turing-institute/turing-commons

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Overview

Humanitarians for Mental Health (HMH), a global humanitarian organisation, seeks to improve psychosocial support for populations affected by crises. HMH aims to leverage AI to scale up mental health screening and provide personalised support. The goal is to enhance the organisation's ability to provide timely and effective mental health services, at scale, to vulnerable populations in challenging environments.

Project Description

HMH are collaborating with a large international healthcare provider to deliver an AI decision-support system. The system will use machine learning algorithms to analyse data collected from mental health screening questionnaires globally. By processing this data, the AI tool will be able to flag characteristics of individuals who are at high risk of developing mental health disorders such as post-traumatic stress disorder (PTSD), depression, and anxiety.

HMH's aim for the AI system is to be used to provide personalised support to individuals based on their specific needs and circumstances. It will help clinicians develop psychological formulations for individuals and provide advice on how to provide treatment. The expectation is that the system will help free up time of senior clinicians to see more clients, where AI can learn from previous medical data to assist and allow less experienced 'lay councillors' to provide support to vulnerable populations. This triaging will help identify the support people need and for some individuals result in signposting to other services.

To ensure the AI system is culturally sensitive and effective in diverse contexts, the organisation is collaborating with mental health experts and local partners. The team is also engaging with affected communities to understand their perspectives and needs, ensuring that the AI system is designed to serve them effectively.

Key Issues

- **Generalisability of the tool to work across different contexts (e.g. geographical)**
- **Data privacy and protection for sensitive information**
- **Trust and collaboration among service users, healthcare professionals, and humanitarian organisation**
- **Transparency, explainability and accountability**

Deliberative prompts

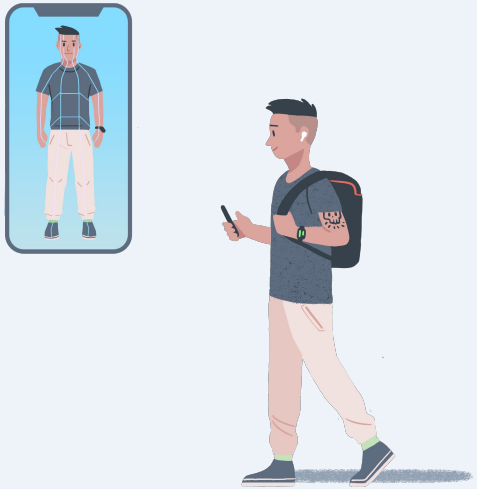
1. **What kind of risks and harms do you think the adoption, development and use of the AI system surfaces?**
2. **Which relationships are key for this to be delivered safely and successfully?**
3. **What assurances and mitigations would be necessary to ensure the AI system is fairly used and who are responsible for these?**
3. **How could humanitarian principles be embedded and how does this affect policy priorities like locally led action and accountability for affected populations?**

Technology Description

The AI system will use a combination of machine learning techniques, including chatbots powered by large language models (LLMs) and deep learning. The system will analyse text data from mental health screening questionnaires and other medical data to identify patterns and understand indicators of mental health risks, based on existing risk assessment metrics.

The AI system will rely on predictive modelling to identify individuals who are at high risk of developing mental health disorders, based on characteristics present in screening. By analysing data on risk factors such as exposure to violence, loss of family, loss of livelihoods and social networks and displacement, the system is designed to flag individuals who may need immediate intervention and support. The use of LLM chatbots will also be used to generate advice conversationally to both clinicians and 'lay councillors' on how they can deliver therapy.

To ensure the AI tool can operate effectively in low-resource settings, it will rely on cloud computing infrastructure and mobile-friendly interfaces, and be designed to work with limited internet connectivity and on a range of devices.



Datasheet

Category	Details
Available Data	• Mental health screening questionnaires including symptoms and risk assessment scores • Behavioural and lifestyle activity data • Community and governmental support engagement records • Clinical assessments including life history of service users

Groups, Organisations and Affected Individuals

1. **Vulnerable groups such as crises-affected and/or displaced populations**
2. **Healthcare Professionals and Providers (e.g. emergency response, doctors)**
3. **HMH and partners (donors, local partners, tech experts, international health partners)**