

# The use of AI in pediatrics - an assessment matrix for consent requirements

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# Outline

1. Informed Consent and Interference in Personal Life
2. Proxy Dimensions and Procedures for Informed Consent
3. Four Paradigmatic Cases

# Informed Consent and Negative Interference in Personal Life

# Informed Consent

Manson & O'Neill (2007): informed consent as a speech act through which some rights and protections are waived.

These rights protect from **negative intrusions in personal life** (physical and psychological harm, coercion, manipulation).

Valid consent is required for non-emergency treatment and research. It must be **voluntary** (uncoerced), **informed** and provided by a **competent** person.

Pediatrics: informed permission by the parents & assent by the minor, if they are competent.

# The Problem We Want to Address

There are many kinds of AI technologies that can be deployed in pediatrics: some are tools that make the pediatricians' work more convenient, others interact with the patients more directly.

Informed permission by the parents and possibly assent by the minor is normally required.

There are many procedures that can be used to obtain informed consent:

oral or in writing? Opt-in or opt-out? Accompanied by how much and what kind of information? Is a discussion with a healthcare professional a necessary or optional part of the procedure?

# The Problem We Want to Address

Some of these procedures are so taxing that they could be seen as unduly **cumbersome**, some are so light that they could be seen as **trivial**.

**Our question: How should consent be obtained? Which consent procedures are best for which AI applications?**

Intuitively, the strictness of the procedure should positively correlate with the intervention's level of risk.

# The Risk of Negative Intrusions in Personal Life...

... is difficult to measure. Due to lack of research, both the magnitude and the frequency of intrusions are hard to assess. It is then best to look at **proxy dimensions**, characteristics of AI applications that can lead us to indirectly gauge the risk.

# Proxy Dimensions and Procedures for Informed Consent



# Proxy Dimensions

- 1) Degree of involvement of the physician
- 2) Invasiveness

An AI intervention is the more **invasive** the more it directly interacts with the patient's body or mind. Broad interpretation. The higher the invasiveness, the higher the risk.

The more involved a physician is with the AI application, the lower the risk.

**Involvement** is **high** if:

- the intervention mostly acts on the physician
- the physician closely monitors what an AI system is doing.

# What's specific to pediatrics

## 3) Child's capacity

The importance of the minor's assent should be gauged to his cognitive, executive and emotional capacities.

The more developed the capacities, the more say the minor patient should have.

Inversion of roles with the parents from a certain point onwards.

# Four Paradigmatic AI Interventions in Pediatrics

# 1) The AI Helps the Physician in Routine Tasks

Lab procedures, writing medical letters, accessing and summarizing medical literature.

**Invasiveness** is low, physician **involvement** is maximal.

It can be asked whether the use of AI here is just like using an external writing service and a matter of mere professional choice.

The main moral concern at stake here is **privacy**. It is morally important that parents and minors can opt out, in the worst case by contacting another medical practitioner.

## 2) The AI Helps the Physicians with Diagnosis and Proposal of a Treatment Plan

The **invasiveness** is still low but higher than before because these decisions influence the patient more directly.

**Physician** involvement is still very high, but the patient has a direct interest in this case.

It must be made clear that the final call and connected responsibility **lie with the physician**, and that the AI can make mistakes.

The consent procedure should be slightly more stringent than in the previous case (e.g., info about how the “cognitive intervention” works).

### 3) Data Gathering for Prevention

Data are continuously gathered and, if a certain pattern is recognized by the AI, it can issue an alert.

Whom does the AI alert? A physician or someone else? What kind of actions are triggered?

**Invasiveness** can be seen as average as almost continuous data about the patient is gathered. **Physician involvement** is normally low but varies.

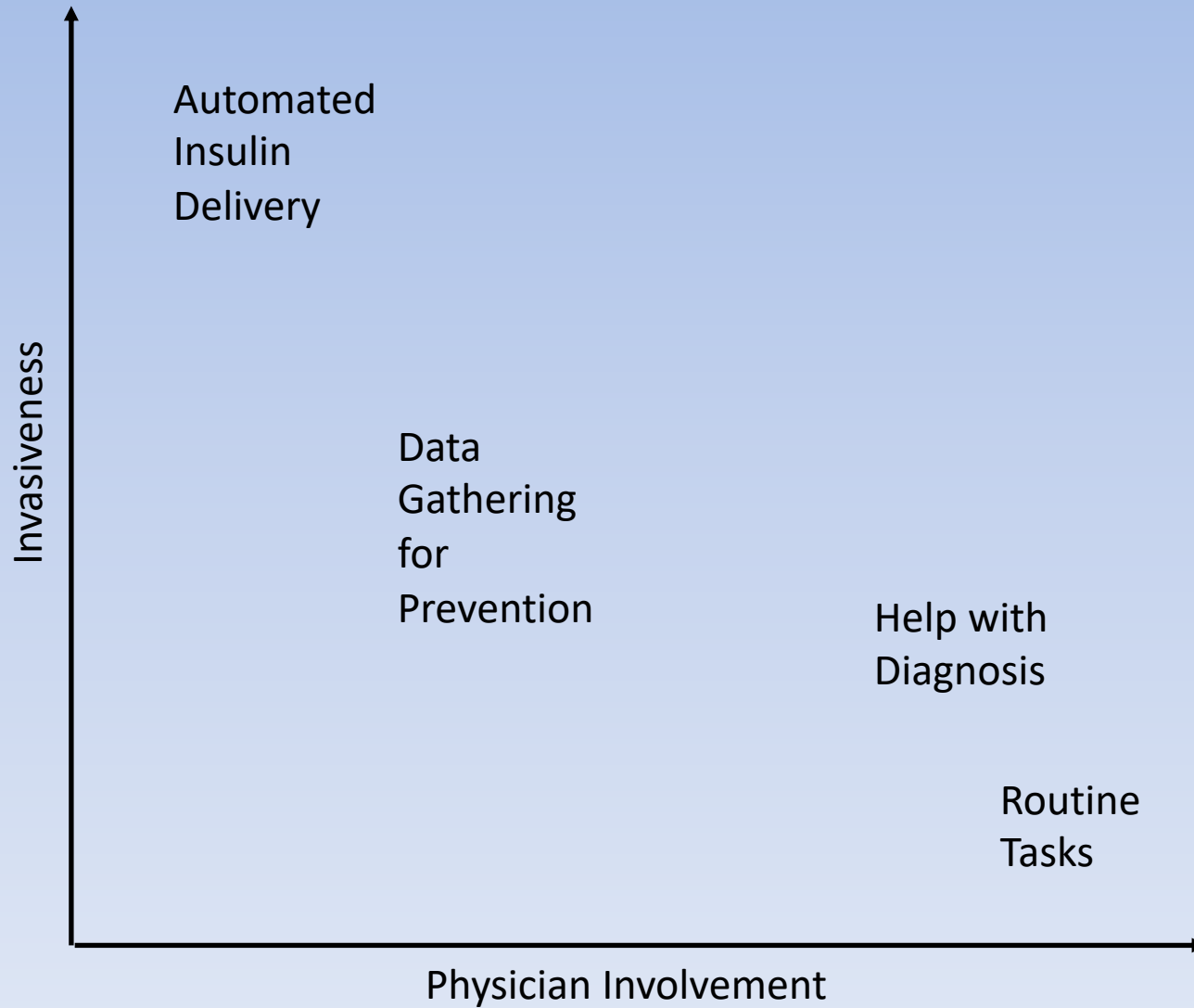
The informed consent procedure must plausibly be more thorough than in the previous case, i.e. in writing and opt-in.

## 4) AI Directly Intervenes on the Patient

AI delivers **insulin** directly into the patient's bloodstream through a closed-loop device that is surgically implanted.

Since **invasiveness** is high and **physician** involvement is low, full, traditional informed permission by the parents, plus possibly minor's assent, is required.







# Take Home Message

There should not be a single informed consent procedure for all AI interventions in pediatrics, because AI can do many different things that do not carry the same risk of negative intrusions in personal life.

The procedure must adapt to:

- how invasive the procedure is,
- the extent to which a healthcare professional is involved
- the capacities the minor possesses.

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**Thank you for your attention!**