

Adherence vs Agency: AI for Behaviour Change in Health

MOMENTUM Country and Global Leadership
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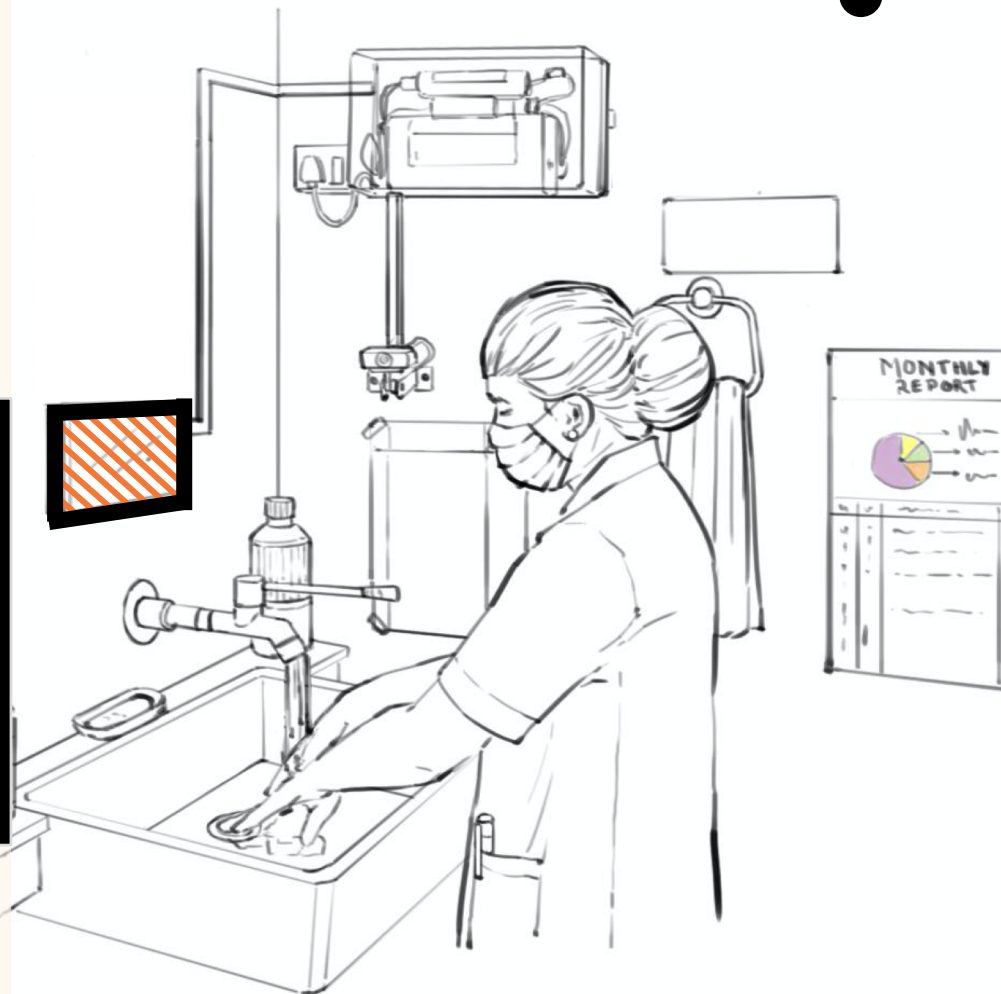
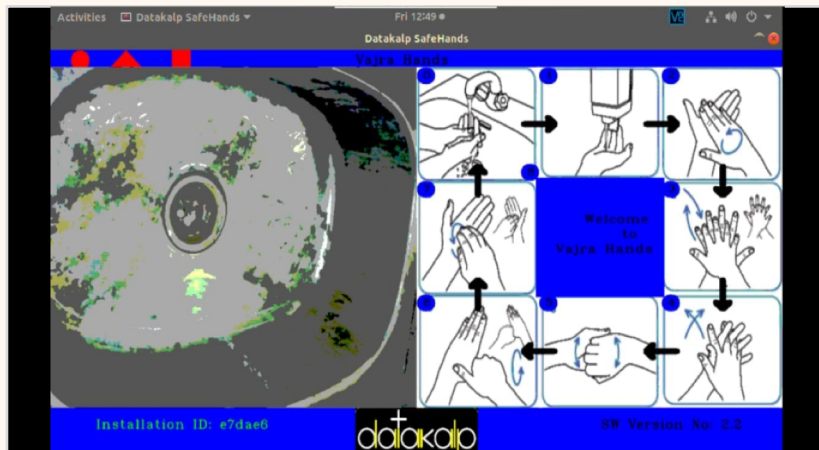
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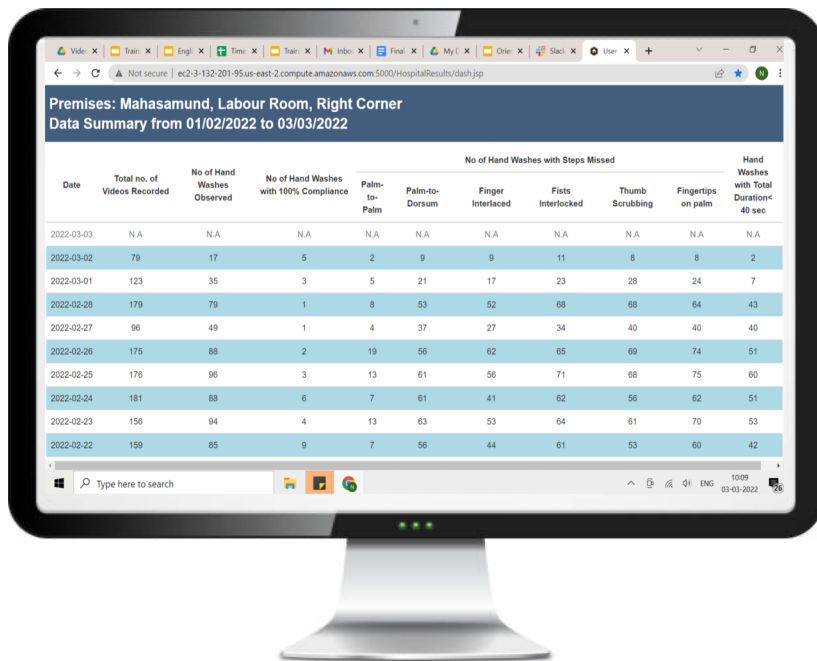


Background

International evidence suggests that health workers are not as diligent about handwashing as they should be given how crucial it is in preventing hospital-acquired infection (HAI). Direct supervision and feedback are usually used to improve staff habits but these methods are resource-intensive, prone to bias, and the Hawthorne effect. Some studies suggest that new technologies like artificial intelligence (AI) can be used instead but there is a dearth of information on their implementation in low- and middle-income countries (LMICs).

Through this project we therefore employed human-centred design (HCD) to explore how AI may be deployed for the quality improvement of hand hygiene in India's public health system.

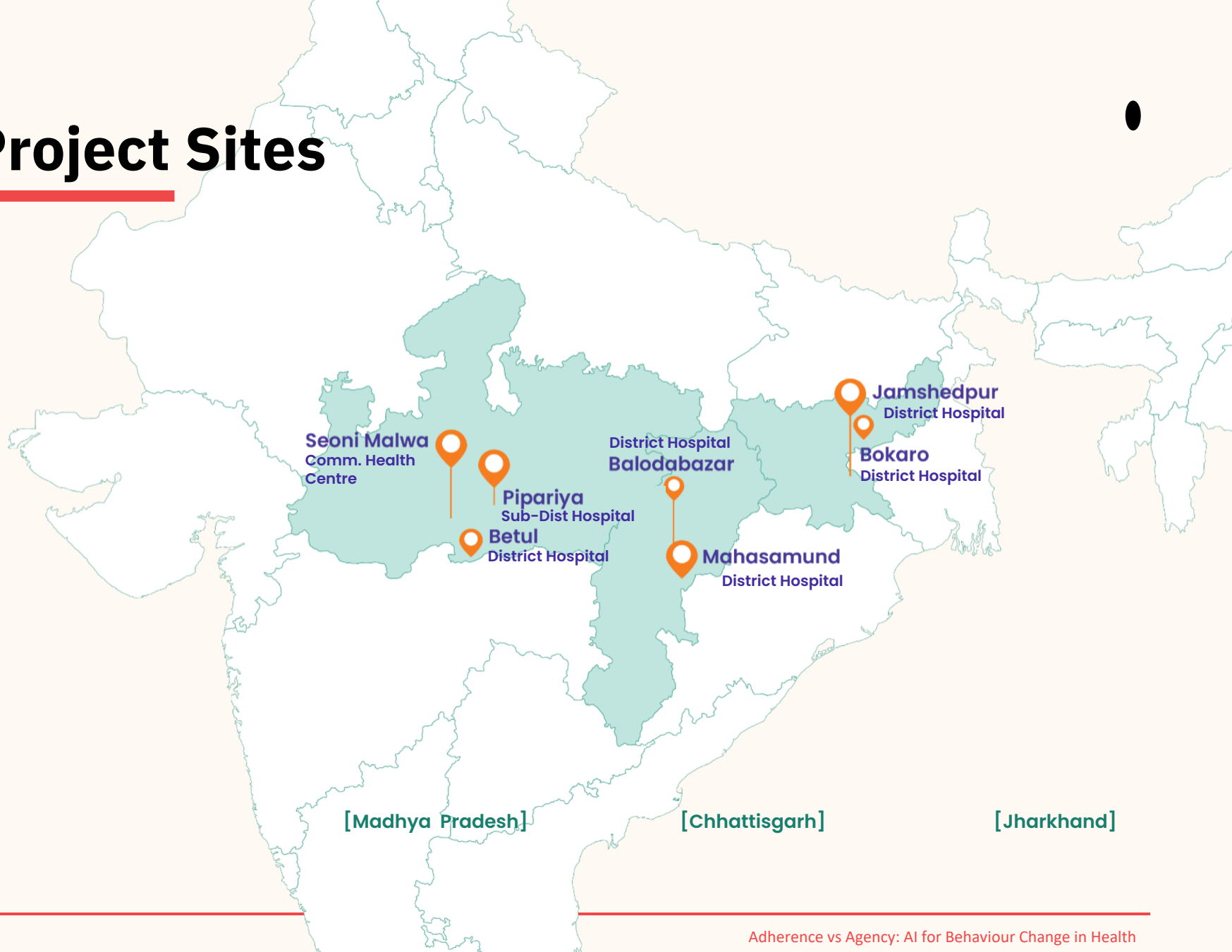




VAJRAHANDS

All the data captured at the basin was aggregated day-wise and made available to the management on a dashboard for better monitoring and evaluation.

Project Sites



OPERATION
THEATRE (OT)

Has a separate set-up

CORRIDOR

LABOUR ROOM

Beds: ?

TRIAGE ROOM

Used to be the LR - I/C room

Beds: 2

Bins for biomedical waste +
essential supplies

CORRIDOR

storage and a room for
nurses to rest

Foundational Research

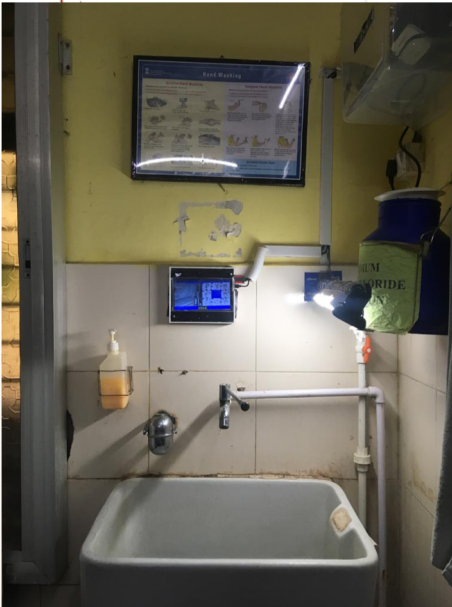
- Ideation & Prototyping
- Delivery
- End Assessment

07

FIELD VISITS

30+

STAKEHOLDERS





To Improve the Device

- Foundational Research
- **Ideation & Prototyping**
- Delivery
- End Assessment

The Manoff Group's Toolkit for Behaviour Integration

Concept Cards



मोबाइल पर मैसेज भेजना

टेक्स्ट अलर्ट के माध्यम से टीम को उनके प्रदर्शन के बारे में अपडेट किया जा सकता है।

- वे अलर्ट हाथ धोने के बारे में सजग बने रहने के लिए एक संकेत के रूप में भी काम करेंगे।
- अगर उनका प्रदर्शन गिरता है तो टीम तुरंत अपने व्यवहार में बदलाव कर सकती हैं।

To Improve Monitoring, Enforcement and Evaluation



विज्ञापन गीत

हिंदी या क्षेत्रीय भाषाओं में गीत तैयार करना जिससे स्टेज याद करने में आसानी हो जाए।

1. क्लिन अलार्म पर खड़े लोगों को हाथ धोना आवश्यक है।
2. हाथ धोने के नीचे से स्टेज ध्यान में रखने हैं।
3. हर स्टेज को क्लिपनी देनाक करना है।

- यह गीत समय रखने के काम भी आ सकता है। जैसे कि हाथ धोने समय में गीत गुनगुनाने से पता चल जाए की क्लिपनी टैर तक हाथ धोने हैं।
- गीत याद रख लिए जाते हैं। सफाई कर्मचारी खास तौर से इसका लाभ उठा सकते हैं।

To Raise Awareness

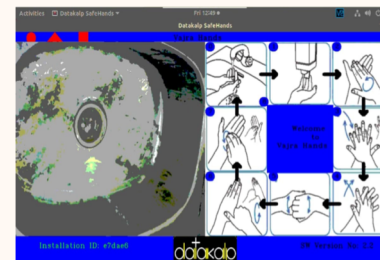
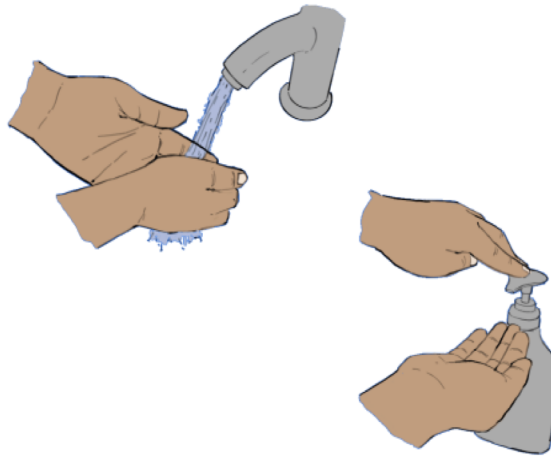


To Improve Compliance



VajraHands

00 : 17 seconds



- Foundational Research
- Ideation & Prototyping
- **Delivery**
- End Assessment

Vajrahands 2.0

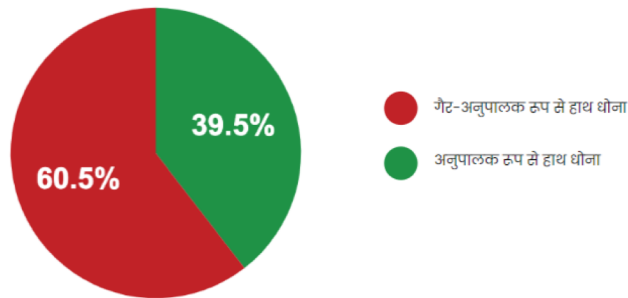
***Supporting
Interventions***

इस पखवाड़े के लिए आपकी अनुपालन दर 39% है *

(औसत दर)

समीक्षाधीन अवधि : 01 अप्रैल से 15 अप्रैल 2022

यहाँ "अनुपालन" का क्या अर्थ है? वज्रहैंड्स आपका मूल्यांकन डबलपुएचओ के दिशानिर्देशों के अनुसार करता है। यहाँ अनुपालन का मतलब है कि आपने (i) सभी नौ स्टेप्स को (ii) सही क्रम में (iii) 40 सेकंड या उससे अधिक समय तक किये हैं।



क्या इसका मतलब है कि आपका परफॉरमेंस पिछली बार से बेहतर हुआ है? **हाँ :)**

आपकी अनुपालन दर (औसत)

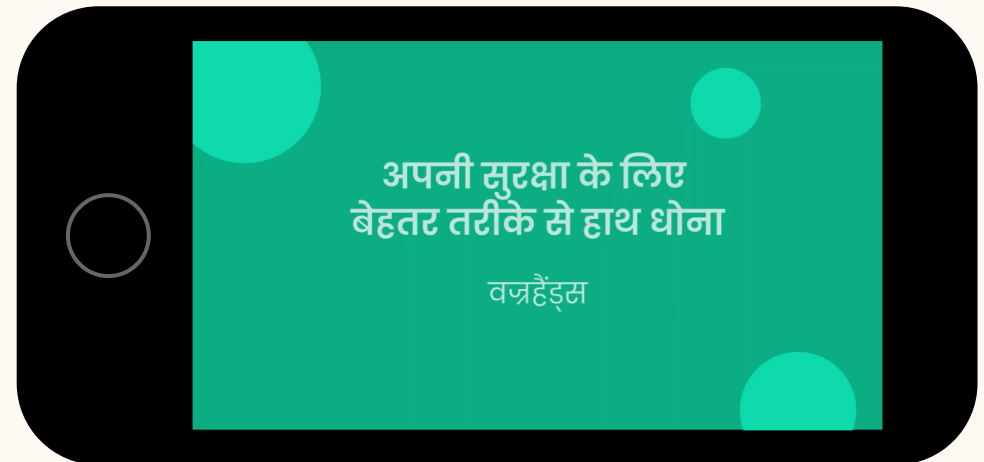


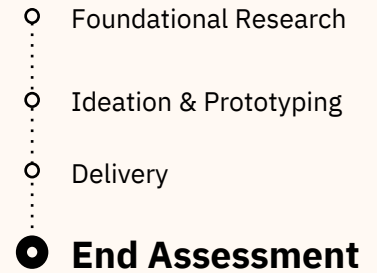
*आपका परफॉरमेंस ऊपर बताई गई संख्या से 3% अधिक या कम हो सकता है। कृपया इस रिपोर्ट का उपयोग करते समय इस **सटीकता की सीमा** को ध्यान में रखें।



Vajrahands 2.0

Supporting Interventions





1. *Usage and performance data from Vajrahands* (All sites)
2. *Staff surveys* (95 respondents, all sites)
3. *Management surveys* (21 respondents, all sites)
4. *In-depth interviews and group discussions with the staff, management, and ground team* (30 respondents, all sites)



ETHICAL ISSUE A

Adherence vs Agency

Vajrahands was programmed according to the handwashing technique recommended by the World Health Organisation (WHO) to align with global standards but this was not well-received by the staff because they were used to another protocol called SUMAN-K. In addition to that they found the display monitor confusing. So we created a new interface where the staff simply had to follow a series of GIFs on the handwashing steps by the timer to get a perfect score. In being more directive, however, we felt we had further reduced the room for variations that people naturally practise.

How might we tread the line between adherence and agency as AI is increasingly deployed for behaviour change?



ETHICAL ISSUE B

Soft Coercion

We created PDF reports with data visualisation to give the wards a high-level summary of their performance every fortnight. Most respondents felt this intervention was crucial to behaviour change but it also led to top-down supervision, where the higher-ups at some sites used fear to motivate their staff. They told the non-medical workers (who have the lowest status in the staff hierarchy) that the ward's performance was being watched by the government, leaving them anxious to comply with the algorithm. Some of the staff members were scared of making a mistake at the basin.

How might we protect public health employees against soft coercion as computer visioning and AI are increasingly used to at their workplace?



ETHICAL ISSUE C

Number Play

The staff often de-prioritizes the handwashing protocol because there is no incentive to follow it. We therefore introduced a short competition cycle with rewards but some sites had a blinkered view of it: they were bent on getting their scores right instead of using the intervention to inspire learning. They asked their senior staff to use Vajrahands more often to balance out the day's compliance rate if it dropped. We even had instances where the access to the project basin was altogether curtailed for those who accompanied the expectant mother to the labour room because they did not know the WHO sequence, which leads us to ask:

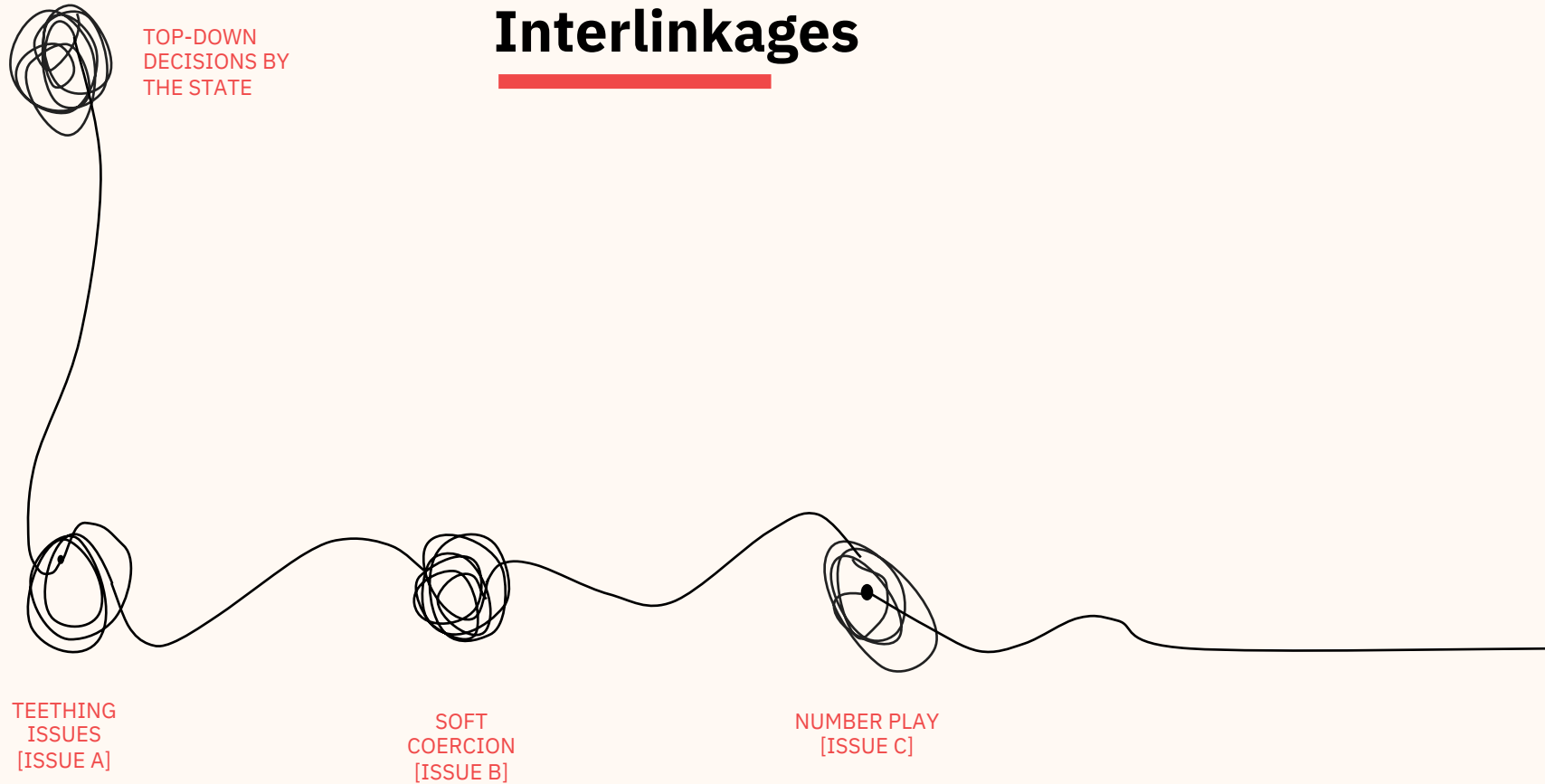
How might we encourage a more honest relationship with numbers and data as AI is increasingly used in public health?

Effectiveness ✓

Adoption?

The average compliance rate at our best performing site touched 50.1% after the second iteration of Vajrahands was introduced with its retinue of non-digital interventions but we need to pay closer attention to the challenges at the adoption phase.

Interlinkages



Conclusion

- 1. A social understanding of technology is imperative*
- 2. HCD has the mindset and skills to bring more voices in*
- 3. Research regulatory frameworks need to account for the political context of the implementation countries*
- 4. We need to develop checks and balances for tech solutionism from within*

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