

C-19 Smart Phone Apps:  
Developing Countries

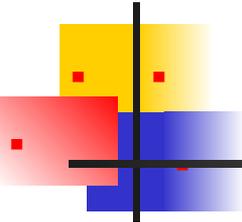
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Jon Crowcroft,

<http://www.cl.cam.ac.uk/~jac22>

Do no harm...

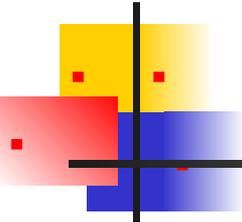




# Mobile Health Net Apps & Covid-19

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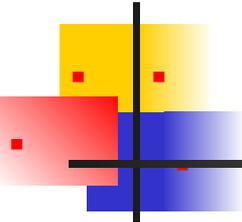
1. Symptom reporting/Health Advice
2. Test&Tracing
3. Immunity Passporting
4. Hotspot risk maps
5. Detecting gatherings
6. Many others



# Challenges

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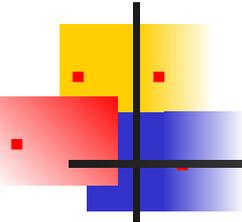
- A. Coverage highly variable
- B. Phone sharing culture
- C. feature phone far more common than smart phones
- D. Data contract costs
- E. language/literacy support
- F. lots more...



# 1. Symptom reporting/advice

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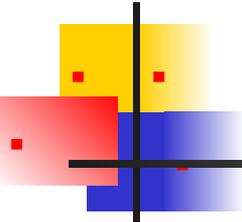
- Can work via SMS
- Still needs multi-lingual support
- is potentially very useful in mapping outbreaks
- e.g. <https://covid.joinzoe.com/>



## 2. test&contact tracing

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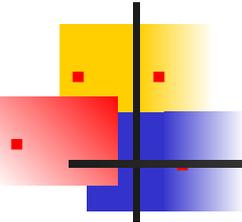
- tracing is useless without testing.
- testing is very low in developing region
- £3 per test at moment is too costly
- plus capital cost of kit
- contact tracing app also fairly low utility if no coverage or phones shared.
- Provider-centric (cell tower) tracker Bad Idea
- SMS for manual contact trace notify ok.



## 3 Immunity passporting

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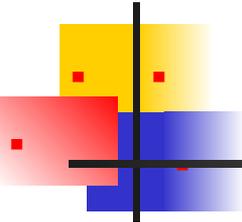
- Forget it.
- No vaccine. Having had C-19 possibly grants < 3 months immunity
- Post immunity, might even become infectious even if somewhat immune.
- Not like Yellow Fever vaccine or surviving smallpox.



## 4. Hotspot risk maps

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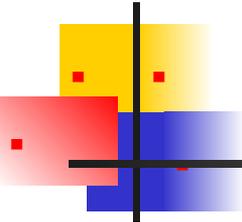
- Very useful -
- potentially same tech as use to distribute market price for farm produce too (can be SMS)
- allows evens (sports/music/market) to proceed if (mostly) safe...
- and attendees to decide to go or not.



## 5. Detecting Gatherings

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- Cell tower/provider aggregate data:
- can use to map gatherings & to model mobility
- connect with population data => risk maps
- Note may be better than google/apple mobility service data for developing region



## 6. Other apps will emerge

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- Consider constraints/costs/privacy
- Also misappropriation/malware etc
- But also synergies (e.g. with m-pesa)