Apps can’t do magic:
The do’s and don’ts of digital health

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Digital health is technology that supports people manage their health and deal better with illness

- Monitoring
- Group Support
- Self-management
- Education
- Behavioural change

App

SMS

Wearable

Phone

Online

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Why digital has become so important to the NHS

- The care model of face to face appointments is under strain
  - Last year there were 86 million outpatient attendances, an increase of 4.4%
  - Demand for services is outstripping the capacity of the NHS to deliver
- NHS England's Five Year Forward View strategy set out 7 new care models to address this challenge
  - To support these care models, £4.2bn was allocated to use "data and technology to transform the health and care system"
- Most people accept that digital will become an increasing part in the way that care is delivered
  - But there is little consensus on what a "digital NHS" should look like

Example of digital healthcare – warfarin clinics

- There are 1.2 million people in the UK on warfarin
- Each patient requires an average of 14 INR tests per year, needing 17m out-patient appointments or home visits

Warfarin clinic

4 minute appointment to test INR and calculate new warfarin dose

Repeat every 3-4 weeks

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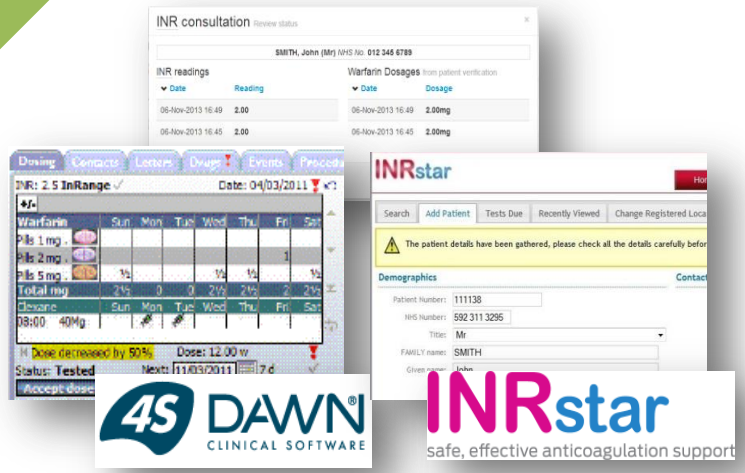
What a digitised warfarin clinic looks like

Patient self-tests at home

Using an phone call, web portal, or app, the patient submits their INR reading



Results are sent directly into the computer system in the warfarin clinic, where their dose is calculated and checked by the nurse

Warfarin Clinic

Patient follows new dosing regime and notes date of next test

The patient is then informed of their warfarin dose and the date of their next test

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Patients love it! And they are healthier for it too …

- 100% of patients said they would recommend the service to other people
- Improved compliance to treatment significantly reduced their chance of stroke
- Clinic capacity increased by reducing time per patient appointment from 4 minutes to 30 seconds

	Cohort 1	Cohort 2
Number of patients	**100**	**100**
Recruitment Selection Criteria	**Narrow** Most were hand-picked by staff	**Broad** Most were recruited from ads
TTR - 6 months before study	**60.4%**	**59.0%**
TTR - 3 months before study	**58.9%**	**59.0%**
TTR - 3 months after study	**72.8%**	**71.0%**
TTR - 6 months after study	**74.4%**	**75.0%**

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Examples where digital can make a difference ….

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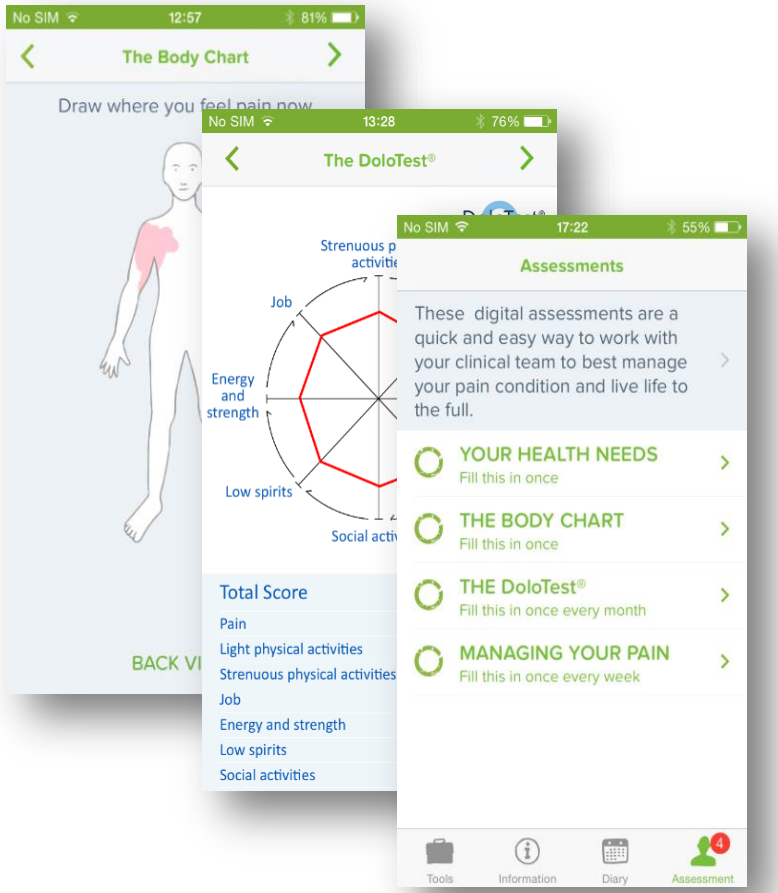
1. Supported self-management

- Patients in Leeds with chronic pain are provided with a Cognitive Behavioural Therapy (CBT) app to help them better self-manage their condition
- Reports on their progress are sent automatically to their pain management specialists and to their GP so that can provide the most appropriate help
- Results in Leeds have shown a 75% reduction in referrals from primary care to secondary care



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2. Reducing unnecessary outpatient appointments

- There are 3 million people in the UK who are malnourished, many of them on supplements
- NICE state that they should be regularly reassessed, but due to resource pressures this often does not happen
- This service remotely reassesses patients risk of undernutrition at home, and identifies patients that need to see a dietitian
- Benefits
  - Increased capacity of the clinic by up to 100%
  - Reduced waiting time from 6 weeks to 2 weeks
  - Reduced treatment time from 40 weeks to 12 weeks
  - Reduction cost of supplements by 10%

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3. Automation of routine tasks

- £584m in payment is withheld from NHS hospitals annually because patients are readmitted to hospital within 30 days after discharge
- To address this, a nurse contacts each patient the day after they are discharged from day surgery to assess their risk of readmission
- The digital service automatically contacts each patient and provides the nurse with a list of patients who are at the highest risk of admission

Surgery

Hospital patient system issues discharge message

Service automatically follows up every patient

Liaison nurse is notified of patients who are at higher risk of re-admission

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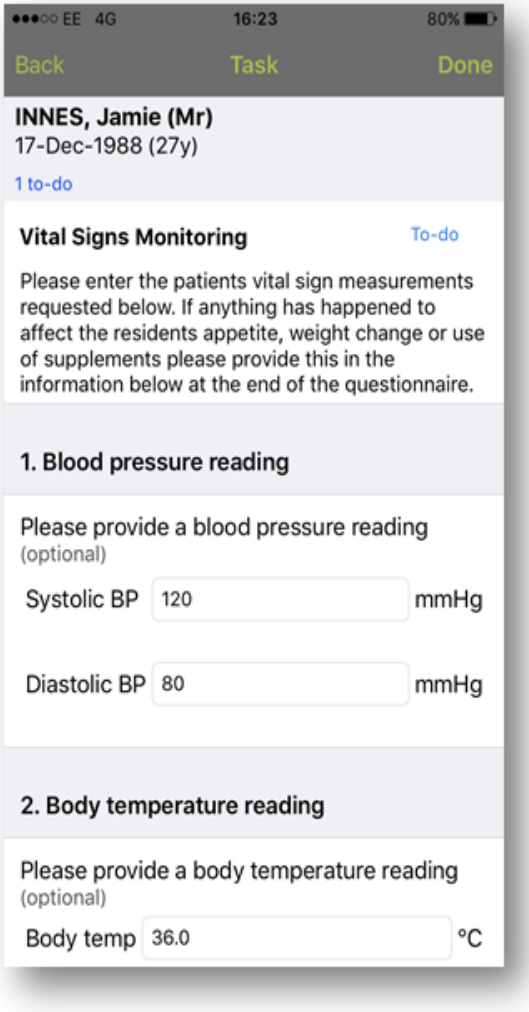
4. Management of patients with long term conditions

- In Norfolk, patients with heart failure and COPD are monitored at home after being discharged from hospital
- This allows clinicians to discharge patients from hospital sooner while being able to monitor their health closely
- It also cuts travel costs and time spent commuting from rural areas for patients



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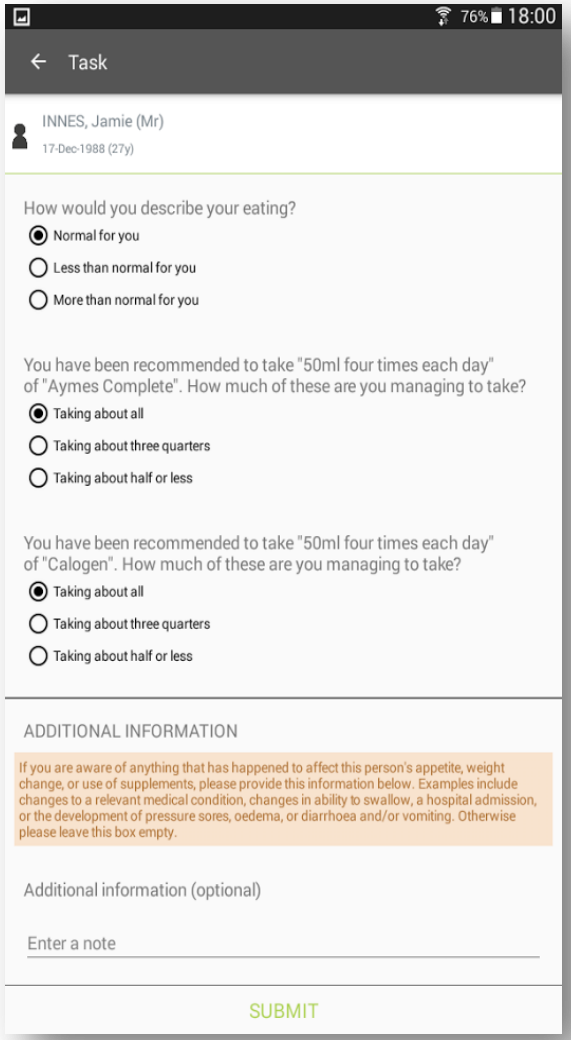
5. Co-ordination across health & social care teams

- In County Armagh and County Down, the community team use a digital care home service to co-ordinate care with care home staff
- The service prompts care home staff to record observations on their residents, such as weight, BP, appetite, etc.
- The hospital have reduced visits to care homes by 95%, reduced the average time on nutritional supplements from 9 months to 4 months, and saved £1000's on travel and prescriptions



Care home staff enter the observations directly into the Inhealthcare Professional app on their tablet or smartphone as they complete their rounds

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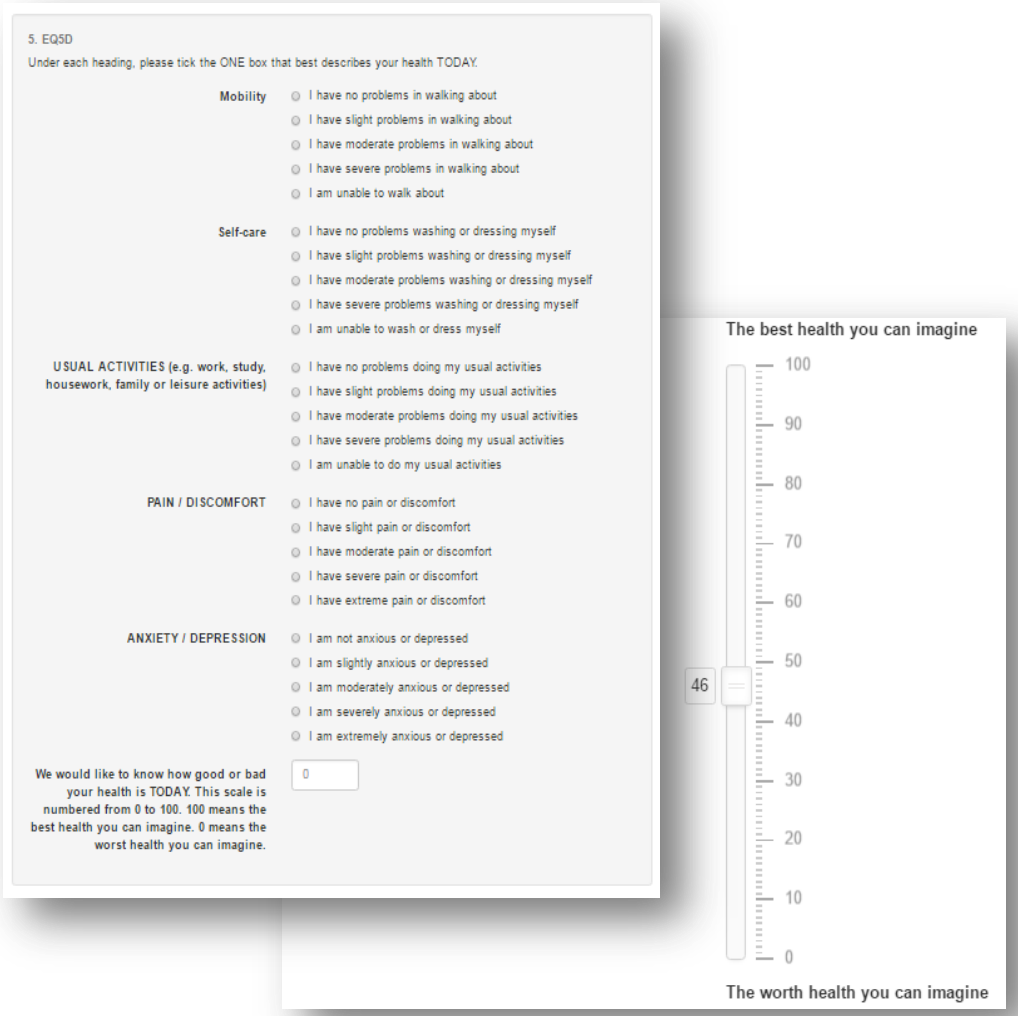
6. Outcome monitoring for better decision making

- Digital health systems can easily collect patient data en masse to assess quality of care delivered at a population level, and give early warning for patient groups at higher risk
- Patient feedback can be gathered using SMS, online, apps, and automated phone calls
- Questionnaires can be as simple as Friends & Family, or more in-depth such as EQ5D (right), PHQ9 and GAD7



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And where digital just adds cost …

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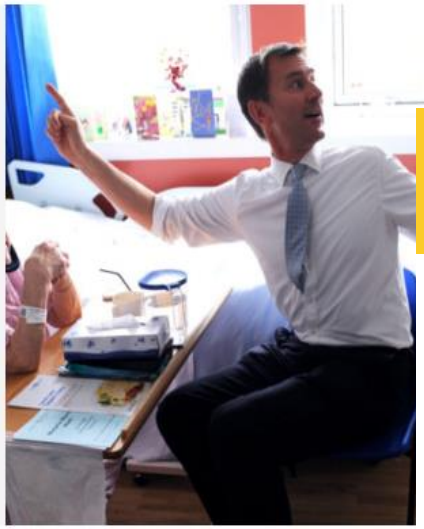
Technology (not patient or clinician) led initiatives

- The NHS is littered with well-meaning, but badly designed, digital projects which ended up with boxes looking for patients to attach themselves to

Cash-crisis NHS chiefs write off telehealth devices



Health Secretary Jeremy Hunt

THE YORKSHIRE POST

NHS chiefs in Yorkshire have written off 2,000 hi-tech telehealth devices as worthless only three years after buying them in a controversial £3.2m initiative.

Under the telehealth project in North Yorkshire, fewer than 700 of the units have been used. Most are still in a warehouse and it remains unclear what will happen to them as they have now been superseded by more advanced technology.

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7 tips on how to avoid a digital health blunder

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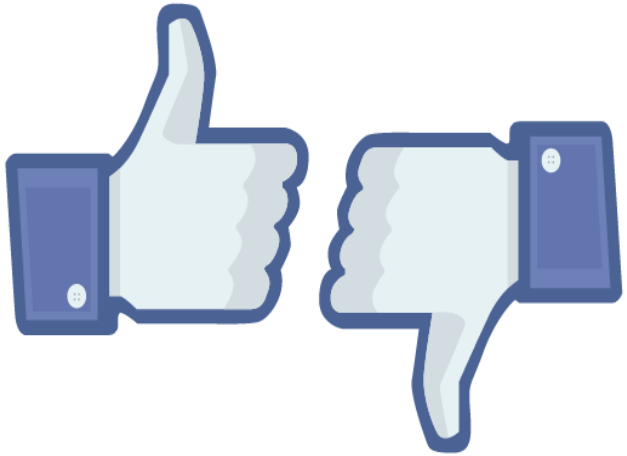
1. Always be ready to pull the plug

- There are lots of reasons why a good digital idea may end up not being viable
- NHS buying criteria usually involve demonstrably better clinical outcomes, cash savings, or increased capacity
- If the NHS doesn't want to buy it, the temptation is to target the private sector or the public – but the self-paying healthcare sector in the UK is even tougher than the NHS



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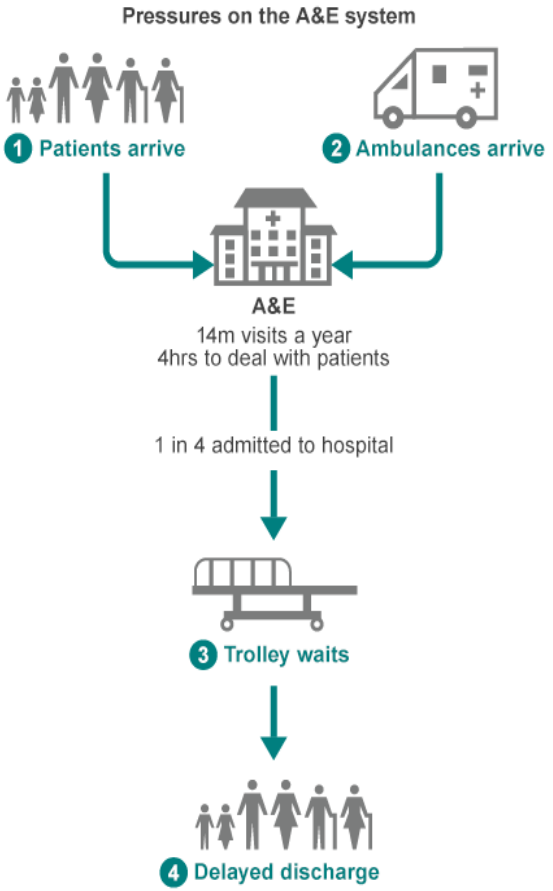
2. Look at the whole pathway, not just the digital bit

- The key is really understanding how the problem happens, not applying a digital plaster
- Consider all the clinical, financial, operational & governance aspects of the problem and potential solutions
- It may be that the best solution to the problem is simple such as better documentation or training, not technology



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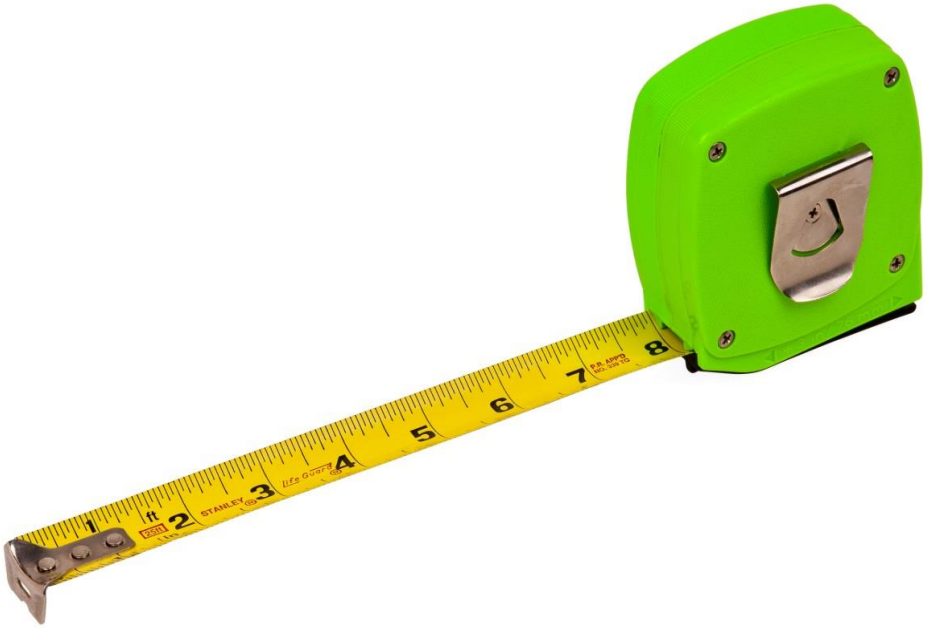
3. Make sure you can measure what you are improving

- Clinical outcomes?
- Productivity?
- Waste?
- Prescribing costs?
- Patient satisfaction?
- Admin time spent?
- Travel time?
- A&E admissions?
- Time spent in hospital?



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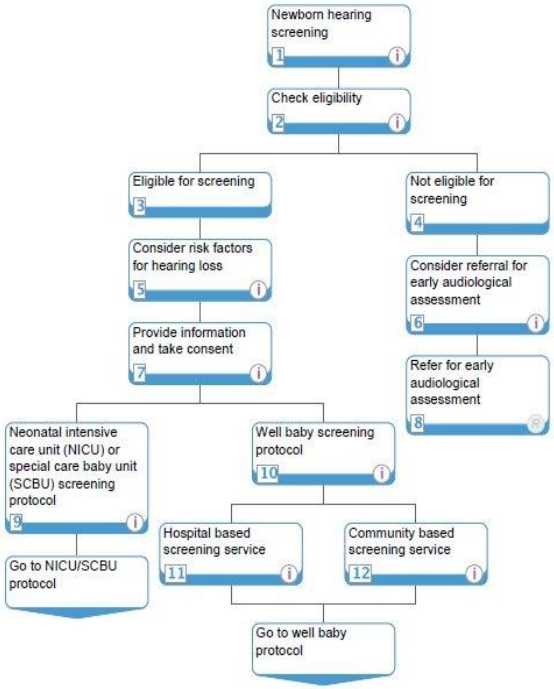
4. Know what the end game is

Most digital health projects don't get past the pilot stage, even the ones that work – you need to start with the end point

- New pathway?
- New national standard?
- New Trust policy?
- NICE approval?
- Commissioned by CCG?
- Innovation funding to help scale?



NICE accredited
www.nice.org.uk/accreditation

SBRI HEALTHCARE

The Health Foundation

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5. Look after your stakeholders

- Digital health projects are seen as risky, and can involve up-front investment to get them off the ground - you need as many friends as possible:

  - ✓ **Clinical lead:** their clinical network will also help you spread your idea outside your organisation
  - ✓ **Exec sponsor**: political support can help promote your idea widely & secure funding
  - ✓ **Budget holders**: they will help you shape your business case so that you meet the necessary requirements for funding
  - ✓ **IT & Information Governance**: not as complex as it sounds, you just need to know the rules so you don't fall foul

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6. Evidence is everything

- The evaluation report is usually seen as the paperwork that needs to be completed at the end of a project
- However the only thing that will remain after the project has completed will be the evidence presented in the evaluation – it is the only thing that really counts
- The evaluation methodology - *and pass criteria* – has to be agreed upfront and designed into the project

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7. Be practical with your digital health pilot

- It doesn't need to have all the bells and whistles, just enough to prove (or disprove) if the proposed digital intervention makes a difference
- Aim for a patient cohort of around 100 – this should generate enough data (it's not an RCT)
- However it's the modified pathway you're evaluating, not the gadget or app, so make sure that you complete and follow a complete Standard Operating Procedure

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Summary

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Summary

- Digital health is emerging as the biggest technology explosion since the Internet boom in the 1990's
  - It is fuelled by the combined need for more sustainable healthcare models, and the ubiquity of mobile technology
- But there are no quick fixes – apps and gadgets cannot do magic
- The potential benefits of a digitally-enabled health and care system are huge, but can only happen when driven by healthcare professionals, not technologists

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Any questions?

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Thank you

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