



The research commercialisation office of the University of Oxford, previously called **Isis Innovation**, has been renamed **Oxford University Innovation**

All documents and other materials will be updated accordingly.
In the meantime the remaining content of this Isis Innovation document is still valid.

URLs beginning www.isis-innovation.com/... are automatically redirected to our new domain, www.innovation.ox.ac.uk/...

Phone numbers and email addresses for individual members of staff are unchanged

Email : enquiries@innovation.ox.ac.uk

eHealth & Big Data



Isis Innovation & Oxford AHSN Technology Showcase



Digital innovation to deliver quality and value in cardiac care

Dr Piers Clifford



What is innovation?

Innovation is not just about ideas, it is the successful implementation of ideas that lead to more value for whatever business you are in.

From ideas to adoption

The NHS is routinely recognised as ‘world class’ for inventing innovative new devices, technologies and processes which all serve to improve health care for millions of patients. However, the main theme of the recently published ‘NHS Chief Executive Review of Innovation’, is that more emphasis needs to be placed on the successful diffusion and adoption of proven innovations.

Why Innovate in the NHS?

- To improve patient experience- quality, efficacy, timeliness
- To improve use of resources and deliver value
- To improve staff satisfaction and well being
- To improve collaboration between NHS and life science industry
- To earn income

Where are the big innovations in business?

- Social and digital communication
- IT technology and software bringing healthcare to the patient
- These are a good place to start

UK: the current picture



Coronary Heart Disease is the **most common cause of premature death** in the UK: 80,000 deaths in 2010

A robust CR service has the potential to **reduce cardiac readmissions** by as much as 56%, yet just 43% of eligible patients take part in CR programmes



Possible reasons for the low level of uptake include: lack of engagement, lack of effective referral, scarcity of high quality service provision or practical reasons

A winning CR solution



We are delivering:

- Engaged patients in control of their care
- Improved clinical outcomes
- Technology enabled care programme
- A transformative idea rooted in effective NHS/industry collaboration

Patients are aware and in control



Patient material

Credible, customised and interactive


Patient website

Provides direct clinician contact, self monitoring and education tools

SMS and email reminders

For exercise, education and assessment sessions

Digital and hard copy patient education modules




Heart Health Solutions

Welcome **Richard Thompson** (Not you?)[My Account](#) | [Help](#) | [Logout](#)

[HOME](#) | [MY SESSIONS](#) | [MY READING](#) | [MY PROGRESS](#) | [MY MESSAGES](#) | [Q&A](#) | [USEFUL RESOURCES](#)

> [Home](#)


My Plan




MY GOAL

Stop smoking and Start exercising!


My Next Sessions

**HEALTHY HEART SESSION**

You have no upcoming Healthy Hearts Sessions.

**ACTIVE HEART SESSION**

You have no upcoming Active Hearts Sessions.

**HEART HEALTH ASSESSMENT**

You have no upcoming Heart Health Assessments.

[View more](#)

My Messages

You have no messages at this time

[View more](#)

My Progress

BLOOD PRESSURE

BELOW
140/90
mmHg


TARGET

136/74
mmHg

ACTUAL

[View more](#)

My Reading

**HOW THE HEART WORKS**

The anatomy of the heart and how it works, coronary heart disease and other heart conditions, and tests and treatment for heart disease.

[View more](#)

Q&A

You have no unanswered or answered questions at this time

[View more](#)

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Staff monitoring and education modules

care4today
Heart Health Solutions

Welcome Ian

Support 16/06/2014 Logout

51 IDENTIFY AND REFER PATIENT 28 MANAGE REFERRAL AND RECRUIT PATIENT 24 ASSESS PATIENT AND DEVELOP CARE PLAN 52 DELIVER CR PROGRAMME 14 FINAL ASSESSMENT 7 DISCHARGE TO LTM

Patient search...

Home
Patient Management
Questions & Answers
Alerts

ALERTS 56

- ! Patient-feature End-Test-account has been in stage 0 for over 72 hours. Please review.
- ! Joe testblogs has been in stage 0 for over 72 hours. Please review.
- ! Product Haldol was mentioned against patient Jenny Aldridge - Special Notes

QUESTIONS 5

DAVID JONES 09/04/2014 - 14:04
Does any of this apply to me? NI...

DAVID JONES 09/04/2014 - 14:04
Imodium

SESSIONS 16/06/2014

11:00 AM First Assessment Wycombe Hospital View

11:00 AM First Assessment Wycombe Hospital View

6:00 PM First Assessment View

REGISTER NEW PATIENT

MONITOR PATIENTS

VIEW REPORTS

Lisa Johnson

Risk: Medium

Diabetes: Yes

Patient Progress

Metric	Latest	-1 Weeks	-2 Weeks	-3 Weeks	-4 Weeks	-5 Weeks
Heart Rate	65	65	65	69	72	75
Blood Pressure	120/70	129/79	135/75	150/95	138/80	140/85
Steps	7500	5000	4000	3000	2500	2000
Exercise Assigned	♥♥♥♥♥	♥♥♥♥♥	♥♥♥♥	♥♥♥	♥♥	♥
Well Being	Very well: Could hardly be better	Pretty good	Good & bad parts about equal	Good & bad parts about equal	Pretty bad	Pretty bad
Exercising Heart Rate	115	115	113	120	112	110
Borg RPE Scale	12	13	14	15	14	15
Recovery Heart Rate	61	60	62	67	71	70
Exercise Target Achieved?	Yes	Yes	Yes	Yes	Yes	Yes
Attendance	Yes	Yes	Yes	Yes	Yes	Yes

Add Row +

Improved outcomes

More patients

- 43%** national average
- 57%** Trust average before the programme
- 75%** Trust average with Care4Today™

Quick referral

- 55** days national average
- 36** days Trust average with Care4Today™

Significantly better health

- +17%** feel either excellent or very good



Improved outcomes (cont.)



Less pain

+8% feel no pain

Increased daily activities

19% experience no difficulties
when performing daily activities

Increased fitness

18% can do (very) heavy physical
activities

More time for care

Our streamlined process includes:

- Standardised care pathway
- Electronic access for patients and staff
- Staff support resources

By streamlining care there is:

- Quick referral to CR
- Clear staff procedures
- Quality care guaranteed
- Standard educational tools

Include time savings:

- Direct access to up-to-date patient data
- Automatic internal and external reporting
- No unnecessary patient visits



Benefits for all stakeholders



More aware and engaged patients with better clinical results

Satisfied staff with easy patient access and more time for care

A leaner NHS: increased efficiency, a decreased administrative burden and less readmissions

Heart failure

- Poor medicines optimisation
- Inadequate provision of care immediately after discharge.
- Lack of engagement of patient in self care

Innovative solution

- Develop reactive, responsive EPR fed automatically from primary and secondary care and voluntarily by patient.
- Preset parameters (drug dose up titration, worsening kidney function, weight gain, reduced exercise tolerance, drop in blood pressure) trigger auto alert via smart technology to 5 carers.
- Telemedicine immediately after discharge further enhances system.

Proposed aims and objectives for this project

Aim:

To develop a comprehensive and integrated approach to the care for patients with HF across primary, secondary and community care within the Bucks area

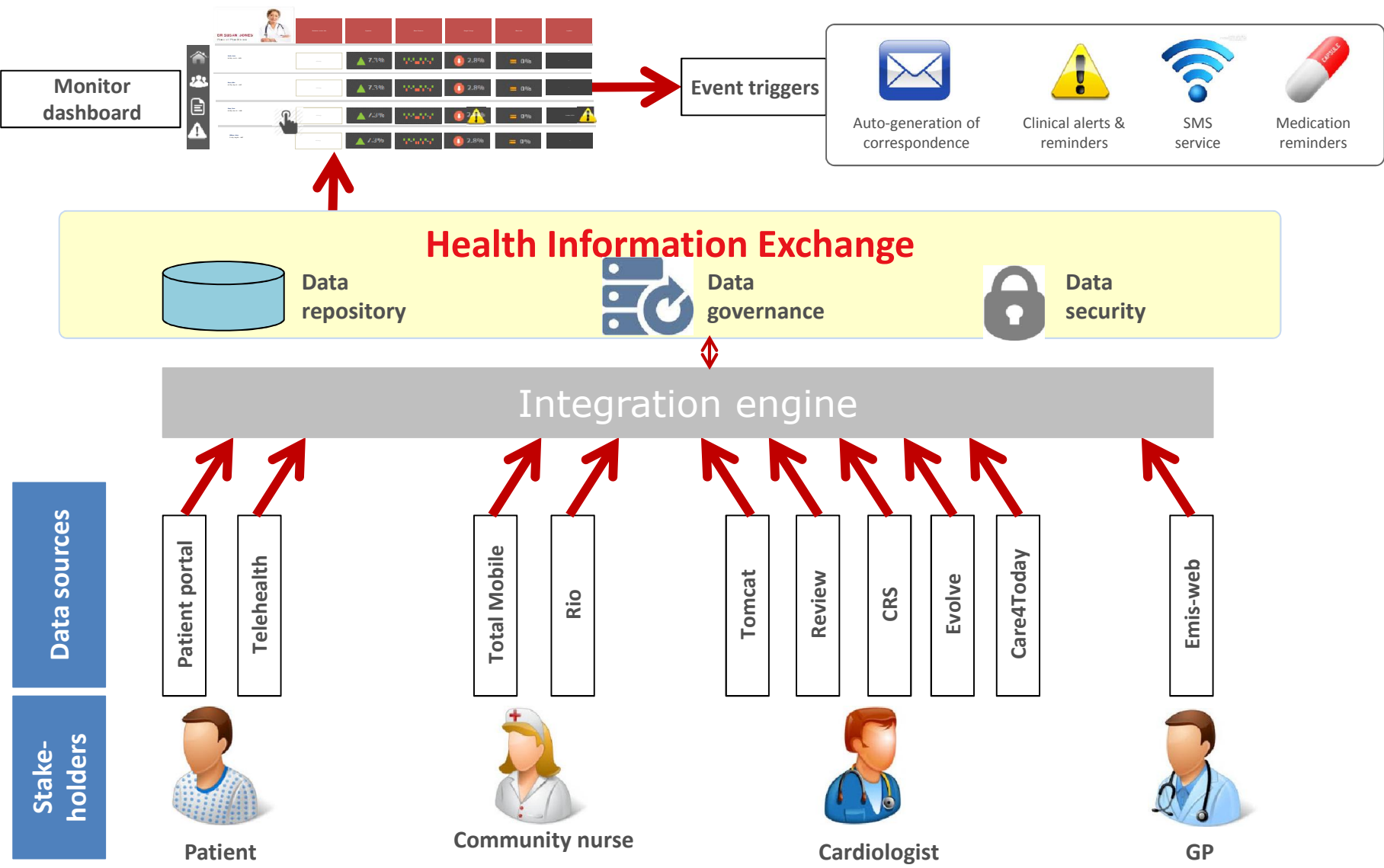
Objectives:

To improve outcomes for patients with HF and lower cost:

- Improve clinical outcomes:
 - Reduction in unplanned admissions
 - Reduction in length of stay
 - Reduction in use of emergency services
- Increase optimal medication dosing rates
- Increase patient & staff satisfaction rates
- More effective use of resources
- Decrease overall cost to the local health economy

Approach to tech to support improvement in care

Comprehensive integrator of patient information with dashboards



Overview of Graphnet Health

Committed to UK care

20 years' experience of sharing data. 45 NHS and social care deployments.

In widespread use


CareCentric holds over half a billion records on 17 million UK citizens. Links data from over 1,000 GP practices.

Tried and proven

Standard deployment methodology allows care communities to be connected in just a few months.




CareCentric Plus portal

Graphnet  Lists Locations View Search

Cromwell Oliver (MR) Male Gender 24-Jan-1950 Born 111 111 1111 NHS No.

CareCentric Clinical Portal



Patient Details

Hub data fetched: 06/18/14 15:00 PM


Local Number: 111 111 1111

Marital status: Married

Ethnic Origin: White British

1c Orchard House
Orchard Street
Canterbury
Kent
CT1 1NF

Mobile Phone: 07853 112908
Home Phone: 01227 774455



Recent Tests

Hub data fetched: 06/18/14 15:00 PM

Heart Rate: 22-Feb-2014


Urinalysis: 23-Feb-2013

BP ambulatory 24hr: 11-Jan-2014

Diabetic Retinopathy: 11-Oct-2013

Throat swab taken: NAD: 16-Aug-2012

New Patient health Check: 01-Sep-2013



Allergies


Hub data fetched: 06/18/14 15:00 PM

Peanut allergy: Severity - Unknown: 29-Jan-2014

Adverse reaction to metronidazole: Severity - Unknown: 09-Oct-2013

Adverse reaction to Penicillin: Severity - Unknown: 09-Oct-2013

Adverse reaction to Aspirin: Severity - Unknown: 09-Oct-2013



Medications

Hub data fetched: 06/18/14 15:00 PM

simvastatin 40mg once daily: 13-Jul-2013


PROTHIADEN 75mg tabs: 01-Aug-2013

FLUANXOL 0.5mg tabs: 25-Jul-2013

Co-amilofruse 5mg/40mg: 29-Jun-2012

OXYTETRACYCLINE 250mg caps: 25-Dec-2011

AMOXIL 250mg caps: 07-Dec-2011



Problems and Conditions

Hub data fetched: 06/18/14 15:00 PM

Headache: 22-Jan-2014


Acute lower respiratory tract: 31-Aug-2013

Abdominal pain: 31-Aug-2013

Achilles tendinitis: 29-Mar-2013

Head injury: 28-Feb-2013

Pulmonary embolism: 22-Apr-2012



Health Status

Hub data fetched: 06/18/14 15:00 PM

Alcohol: 26-Apr-2014

Exercise: 16-Apr-2014

Alcohol: 13-Mar-2014

Alcohol: 03-Feb-2014

Alcohol: 03-Dec-2013

Smoking: 13-Nov-2007