



Innovative health-care technologies: some lessons re uses and production

Stan Metcalfe & John Pickstone
CRIC and CHSTM Manchester



IHTs: assistive, contextual, & successful replacements

- **Assistive technologies**
- for service users, eg. wheelchairs
- or carers, eg. monitoring domiciliary intensive care
- or health workers? eg. monitoring foetal distress

- **Context changers** – eg., disability rights, dyslexia
- **Successful replacement technologies**, eg. lenses and hips



Assistive technologies for users

- Begin with the **users**, not the innovation
- ESRC Investigations of users

- Many post-stroke patients not interested in 'being aphasic'
- Some anorexics do not wish 'to get well'
- Many dying patients do not want heroics

- A public system cannot follow all patient choices:
- Cherish public spirit & communal responsibility
- But do not exploit carers



IHTs for carers and workers

- Parents of dialysed children have huge burdens; electronic monitoring may not help much
- Midwives not keen on new foetal monitoring – and they are potentially the main users
- Understand work cultures and enrol
- (Rotterdam studies, Action research)



Activist and changing contexts: stories in wheelchairs

- UK: NHS supply of med devices eg deaf-aids, glasses
- Production units small; not v user friendly, but big advance for previous 'non-users'
- USA: veterans; activists & sports; company responses
- USA: licensing of designs and Medicare etc provide big markets
- Disability RIGHTS transforms expectations and contexts; esp US and UK?
- Note: Low tech; DEmedicalisation; politics

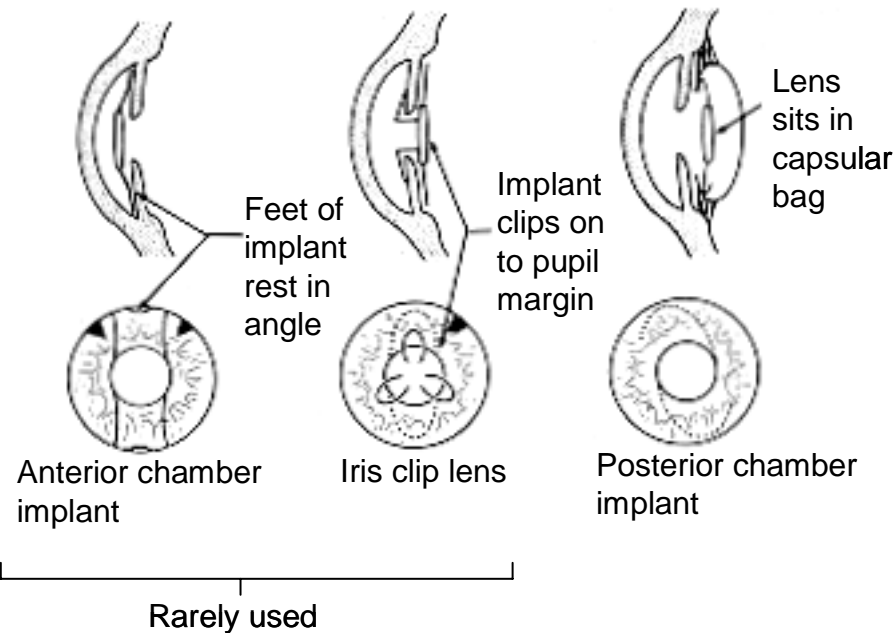


Two case studies

- The Intra-Ocular Lens (IOLs) for cataracts
- The Total Hip Replacement (THR) for arthritic hips etc

1. The Intra-Ocular Lens

Different types of lens implants





IOLS and THR

- Both intra-ocular lenses and total hip replacements from early NHS
- Public sector, some company collaboration
- Versatile surgeons and local linkages – how might we encourage breadth and cross sector?

- Note: IOL for many years deeply problematic, phakoemulsification ‘completed’ it
- THRs using plastic initially ‘failed’ but patients came back – and some become ‘collaborators’



Eyes and markets

- IOLs take-off
- USA e70s – IOL consumer scandal
- FDA regulation promotes better designs
- Major cost decreases – becomes OP op
- But problem of passing reduction in fee-for-service systems eg Canadian NHS
- Reduce skill demands, but with professional collaboration

2. Charnley Hip





Hips and markets USA

- UK 60s designs pirated and prices inflated
- From 1980s, THRs dominated by big companies, rather than surgeons
- Excessive production of new varieties
- Compromises testing programmes
- US Companies now under subpoena--to discuss arrangements with surgeons
- Beginnings of direct to patient advertising

Nature of Competition

Technology still in play: all major suppliers supply full range of models (e.g. primary THRs)

– Depuy



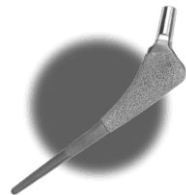
– Stryker



– Zimmer



– Biomet



C-Stem

Exeter

MS-30

Genera-
tion 4



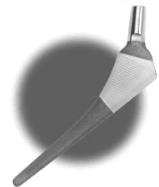
Charnley

Omnifit

Allo

Classic

Stanmore





Hips UK

- UK companies were bought out (multinationals all US based except for Smith and Nephew)
- But markets are local and conservative
- Surgeons choices, premium on experience
- Most used in UK are variants of early UK models; performance as good as any
- Difficulty of testing – complex interactions, no good lab model: need for NICE etc and



UK Hip lessons

- Relative efficiency of early developments
- UK national registers
- Possibilities of 'key-hole' – cost reductions
- Enormous commercial and professional investment in joint replacement
- But need to remember that technical innovation is NOT the prime purpose
- Cure? and preventions, inc obesity
- Start with the users;
- or better still the potential NON-users



Conclusions

- Public sector crucial & efficient;
 - User-friendliness may be achieved
 - a) by markets (but extravagance), OR
 - b) by patients as `patrons´ eg by patient groups, or carers, or by ASKING users, with
 - c) professionals/regulators as protectors & advisers
-
- Need efficient innovation & production, AND
 - Inventive, public-minded professionals, AND
 - Serious dialogue with patients & other users.