

EU/USA Forum ICADI Preparatory Workshop
26th-27th June 2003

The EPSRC EQUAL Initiative

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Extending Quality Life

www.equal.ac.uk

extending quality life
equal

This presentation

- The EQUAL Research Initiative
- An Example
- The EQUAL Research Network

EQUAL: History

- 1993 Government White Paper on Competitiveness & Quality of Life
- 1995 EQUAL announced by OST
- 1997 1st EPSRC EQUAL invitation
- 1998 2nd EPSRC EQUAL invitation
- 2000 3rd EPSRC EQUAL invitation
- 2001 4th EPSRC EQUAL invitation

EQUAL: Corner Stones

- **Multidisciplinary**

- (physical science/ engineering + social/health/medical science)

- **Collaboration**

- (with intermediaries, industry, health care providers, charities etc)

- **User focus**

- (involving older people and disabled people)

First Three Calls

1997, 1998, 2000



- Built Environment
- Design for All
- Rehabilitation
 - 34 projects from 1 year to 3 years
 - £30,000 to £300,000
 - Total Funding £5.4m
 - 42 research teams
 - 27 universities

EPSRC EQUAL 4th Call

- Funding decisions 2003
 - two large consortia supported (telecare, going outdoors, £500,000 each)
 - four more may be funded later this year (stroke rehabilitation, transport, smart homes, inclusive design)



Multidisciplinary

A sample of the fields represented

Architecture, Building, Construction Management, Civil Engineering, Surveying

Engineering - Audio, Automotive, Corrosion, Design, Electrical, Electronic, Materials, Mechanical

Urban Planning, Geographic Information Systems, Transportation, Environment

Computer Science, Mathematical Modelling

Anthropology, Sociology, Psychology, Science Policy

Clinical Psychology, Ophthalmology, Podiatry, Gerontology, Human Ageing, Medical Rehabilitation, Human Sciences, Child Health, Community Medicine

Clinical Biochemistry, Rehabilitation Engineering, Bioengineering, Cybernetics, Acoustics

Collaboration

(examples)

Industry

Architects Partnerships
Engineering Consultants
Housing Associations
Trade Associations
IT Companies
Component Manufacturers

Government

Roads Agency
Local Authorities
Housing Departments
DETR
Joint Mobility Unit

Health Sector

NHS Hospital Trusts
Health Clinics/Units

Local Action Groups

Community Groups
Disability Groups

Major Charities (for example)

Help the Aged
Age Concern
Housing Charities
Shelter
RNIB, RNID

User Focus

(examples)

- Older people
- Disabled people
- Stroke patients
- Asthma sufferers
- Dementia sufferers
- Brain injured people
- Psychiatric patients
- Wheelchair Users
- Older homeless people
- Younger homeless people
- Lonely people
- Visually impaired people
- Hearing impaired people
- Autistic children
- Special Needs children

EQUAL: Funded Projects

- **Housing and the Home - 7**
 - **Examples of Assistive Technology related projects**
 - **Affordable modular adaptations to the home**
 - **Integrated control and communication systems for distributed sheltered housing**
 - **Advanced Sensors for supportive environments**
 - **Telecare (David Gann - Friday)**
 - **+(EQUAL 4 New Dimensions in Telecare (David Gann - Friday))**

EQUAL: Funded Projects

- **Accessibility and Navigation - 6**
 - Examples of AT related projects
 - GIS in Urban Areas
 - Urban Navigation systems

EQUAL: Funded Projects

- **Design for All - 7**
 - **Examples of AT related projects**
 - **Older User's perspectives on mobility related AT**
 - **Navigation aids for complex indoor spaces**
 - **Packaging - hand-object interaction**
 - **Hospital Portal for patients and physicians**

EQUAL: Funded Projects

- **Sensory Impairment: Hearing, Seeing - 8**
 - Examples of AT related projects
 - Auditory navigation beacon
 - Auditory location finder
 - Document production for Blind People
 - Self administered hearing tests

EQUAL: Funded Projects

- **Cognitive Impairment: Dementia, Stroke, Learning Difficulties - 6**
 - Examples of AT related projects
 - Rehabilitation following stroke
 - Multimedia reminiscence system for people with memory loss
 - Design for dementia in caring environments
 - Design of external environment for dementia
 - Input devices for people with learning disabilities
 - Smart homes (Roger Orpwood - Thursday)

Has EQUAL made a difference?

to policy and practice - examples

- **Aiding Policy Development**

- input to Housing Policy, Long Term Care Policy, Telecare.....
- new ways of thinking about inclusive environments, product design, social inclusion....

- **Input to Regulation**

- Building Regulations, British Standards, Italian Standards, EU legislation.....

- **Assisting the Professions**

- better design practice, better guidance to OTs, transport

- **Supporting Clients of Industry**

- better, more effective, efficient and inclusive public buildings and products.....

EQUAL crosses boundaries? to business

- **34 Projects in total**
 - 10 have an explicit business dimension
 - 9 have an implied business dimension
 - most others have an economic dimension
- **Most relate to the needs of a government, other organisations and society in search of cost effective approaches to improving Quality of Life**

Example

EPSRC Responsive Mode

- **Introducing AT into the Existing Homes of Older People**
 - research team: gerontologists, engineers, builder, surveyor, economist, statistician, OT
 - major survey into:
 - the adaptability of existing homes
 - available AT - ancient and modern
 - attitudes and experiences of older people of AT
 - strategies for AT

Areas Addressed

- Infrastructure needs
 - assessment of need, selection and supply of AT
 - institutionalisation of good practice
- Evaluation
 - user perspective and acceptance
 - housing provider and social services issues
 - cost
- Barriers and limitations
 - infrastructure, reliability, maintenance
- Public policy
 - funding models

Methodology in Brief

1. Interviews of Older People with AT

2. Survey of available AT ancient and modern

3. Audits of 82 properties

4. Seven Users with varying impairments at Two Time periods

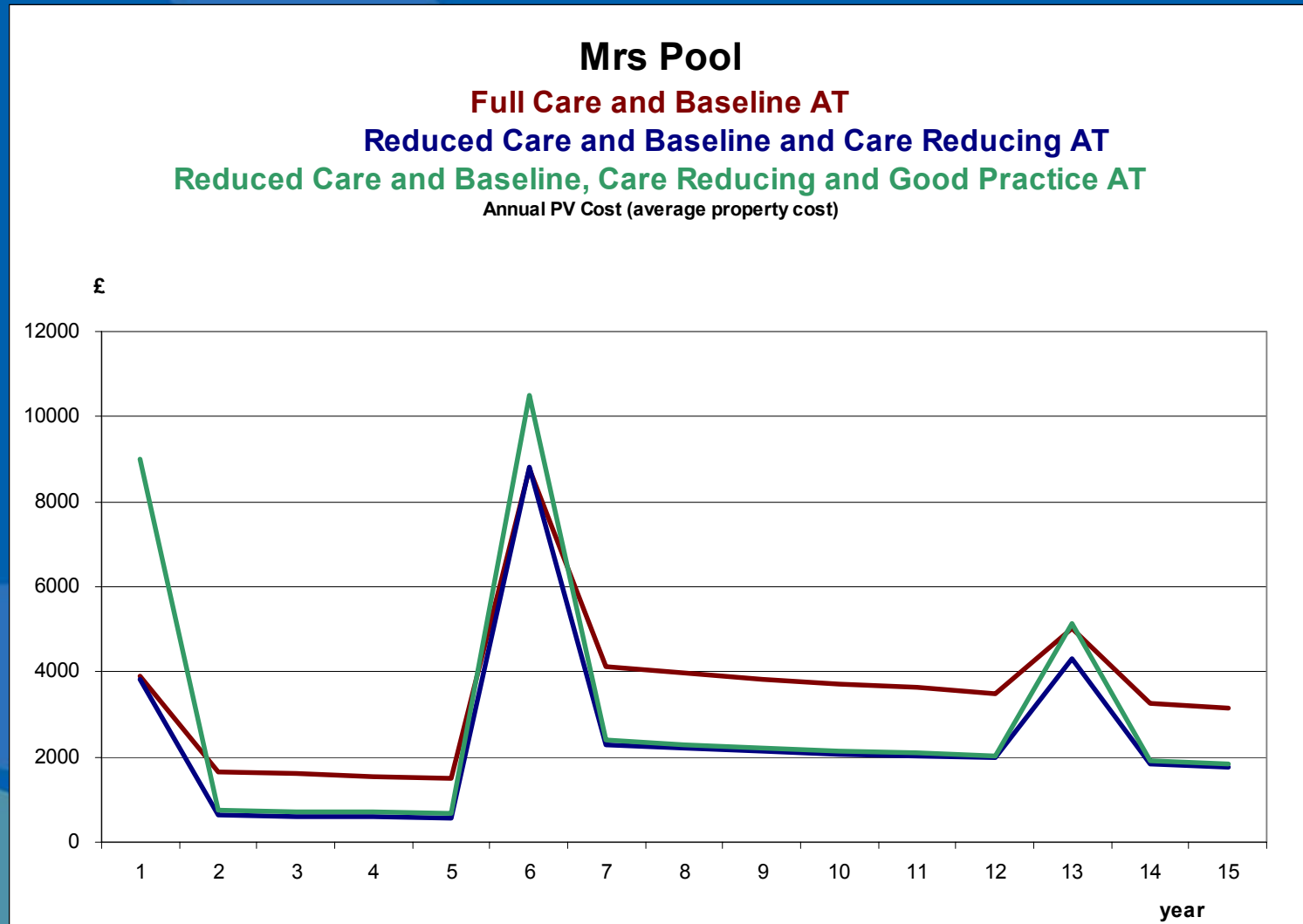
5. Packages of Care and Portable and Fixed AT Specified for each User and Time period

6. Users and their AT “fitted” into the 82 properties (often need to redesign)

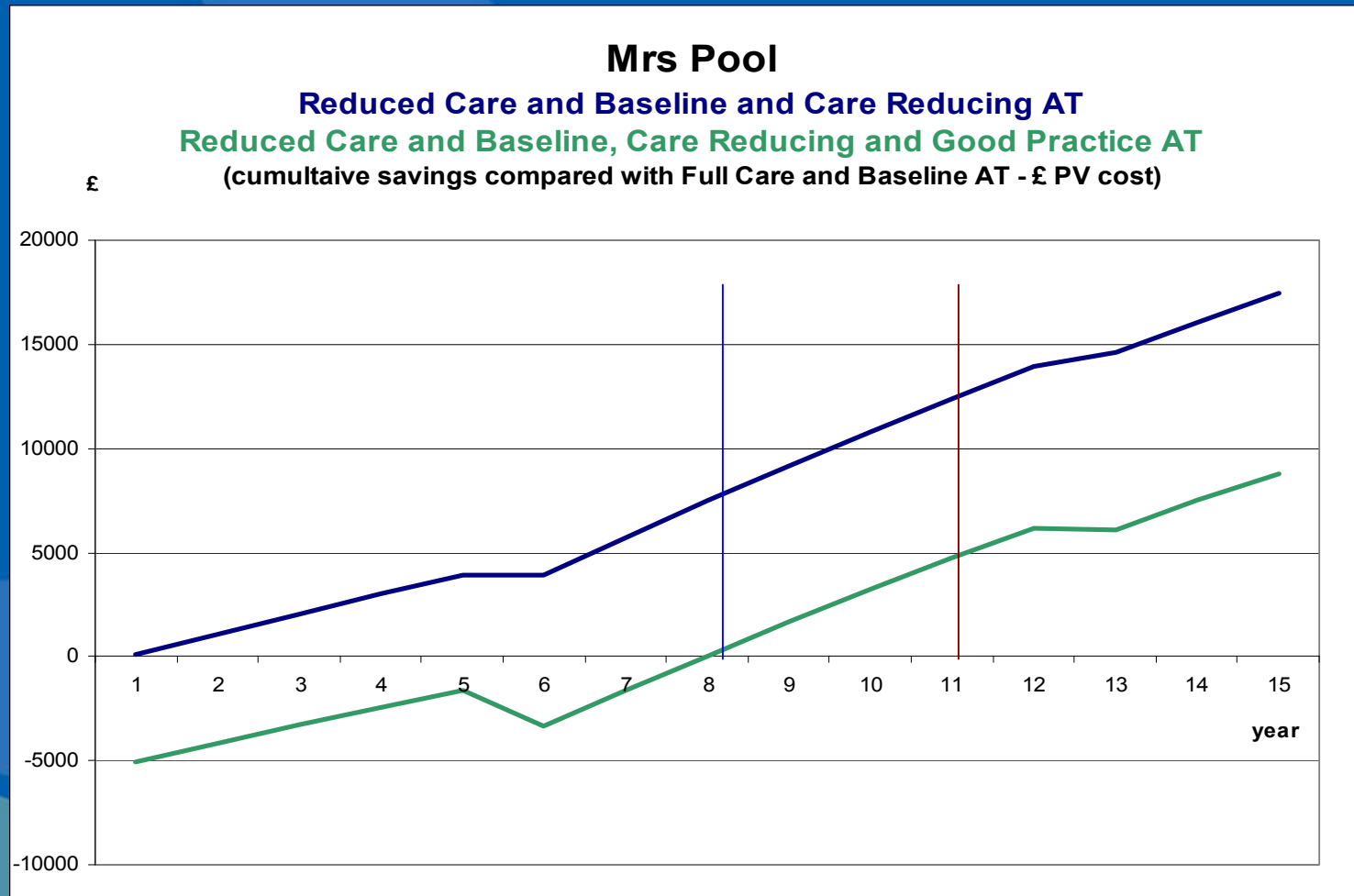
7. Life Time Cost of Adaptations, AT and Care Estimated for different combinations of Care and AT and Length of Use

How the Costs are incurred

PV costs 3.5% discount rate



What are the savings and shortfalls?



Reduced Life Expectancy – 8.7 years, Life Expectancy – 11.6 years

Findings

- Importance of User's views, experience and "felt need"
- Importance of OTs and others in designing appropriate packages
- Cost of conventional adaptations and AT far outweigh that of novel AT
- Reduction in Formal Care costs can fund AT with plenty of money left over
- Very considerable savings but also large variations depending on property

More Findings

- **Major challenges for:**
 - infrastructure of agencies, multi-professional working, funding of AT
 - linking research to sharp end of practice
- **Research needs:**
 - more financial and economic analysis linked to population disability information and housing stock, especially for secondary benefits (for example, reduction in admissions)
 - integrating high technology and traditional technology in field research

EPSRC EQUAL Research Network

Maintaining Momentum

EQUAL Research Network Activities

- Research Workshops
- **Encouraging** New People into Ageing Research
- **Linking** National and International Activities
- **Interfacing** with Charities, Government, other networks etc
- **Lobbying** Policy Makers, MPs, Ministers
- Lobbying Journal Editors

- Web site as a source of research information and dissemination

Research Workshops

- Full day National events in different locations
- Presentations
 - Researchers - Practitioners
 - Older and Disabled People
- Organisation
 - No charge to participants and no expenses paid to presenters
 - Host pays for refreshments and organises facilities
 - Coordinator does much of the administration
- Attendance rising above 80 and with waiting lists

EQUAL Workshops - 2002

- **Vision and Deafness in the Built Environment**
 - *Reading, March 2002*
- **Bio-engineering and Mobility**
 - *Strathclyde, April 2002*
- **Wayfinding and Navigation**
 - *Newcastle, July 2002*
- **Design for Frailty and Dementia**
 - *Loughborough, September 2002*
- **Design of the Home**
 - *Ascot, CIOB, December 2002*

EQUAL Workshops - 2003

- **Design of Accessible Interfaces**
 - *Reading, February 2003*
- **Assistive Technology**
 - *Preston, June 2003 (with PPP Foundation support)*
- **Transport**
 - *London, DfT, November 2003*
- **Sensory Impairment**
 - *London, JMU, December 2003 (proposed)*
- **Methodology** (researchers' workshop)
 - *London, Autumn 2003 (proposed)*

Integrated approaches to the development, selection and supply of assistive technologies for older and disabled people

25th June 2003

- Outcome measures in AT
- Evaluation of mainstream products used by consumers with disabilities
- Design innovation for inclusion through user involvement
- The role of Disabled Living Centres in equipment services at individual and policy level
- Introducing AT into the homes of older people
- New dimension in Telecare

Are the Workshops successful?

- **“Leading-edge of research meets sharp-end of practice tempered by the realities of ageing and disability”**
 - a good formula

Some Reflections

- **Considerable demand for information**
- **Scientific content not a barrier**

Conclusion - 1

- **EQUAL**

- new activity

- exciting
- high standards
- valuable contribution
- but very complex
- community is small

- those at the sharp end

- understand aspirations of older people
- can identify opportunities for effective application of science
- can bring together skills and resources
- **have super stories to tell**

Conclusion - 2

- **Assistive Technology**
 - plenty of activity across wide range of fields
 - positive reaction from users and intermediaries
 - largely novel technology
 - little economic or policy-orientated research concerned with basic provision yet that is where the need is greatest

The Ultimate Aim

