



“Connected Health” from O2

How patients and care providers’ lives will be transformed by wireless connectivity

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Summary

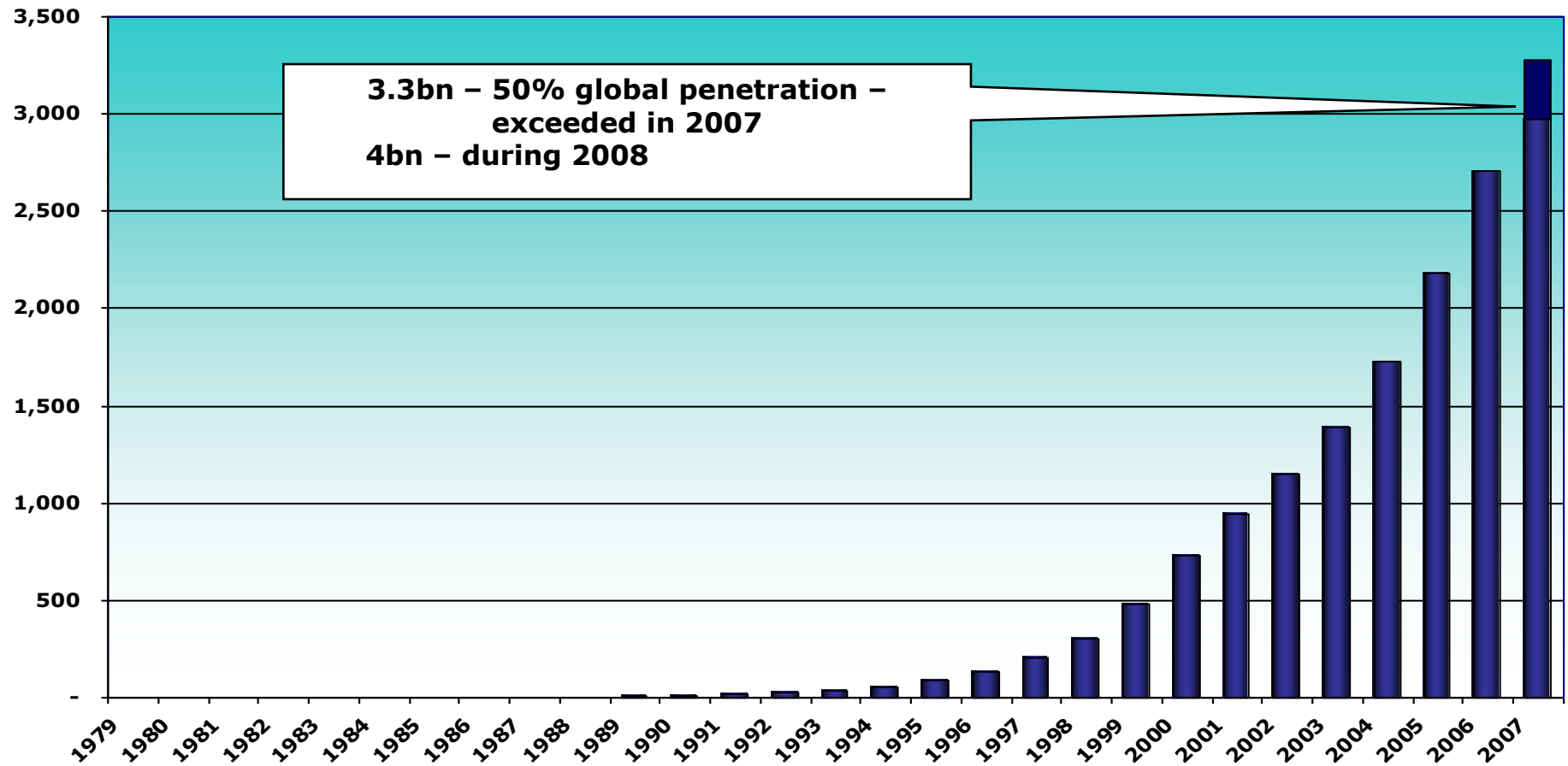
- **Socio demographic trends placing pressure on Healthcare**
- **Government focus on prevention, rather than cure**
- **e-Health services and wireless connectivity are already shaping the future of healthcare globally**
- **EU has projected exponential growth in e-Health services over next 2 years**
- **O2 & Telefónica are well placed to support these developments**

Health market growth & mobile/ICT opportunity

The health market is growing with potential for future mobile/ICT engagement despite some barriers

- e-social care for the elderly and families - to delay/prevent the need for residential care and provide comfort and reassurance through home health care
- e-healthcare for patients with chronic diseases - to prevent and better inform with personalised monitoring and treatment
- e-wellbeing and lifestyle for everyone to prevent future health risks

Why Mobile? - The Mobile World's Customer Base 1979-2007 (m)



Source: The Mobile World





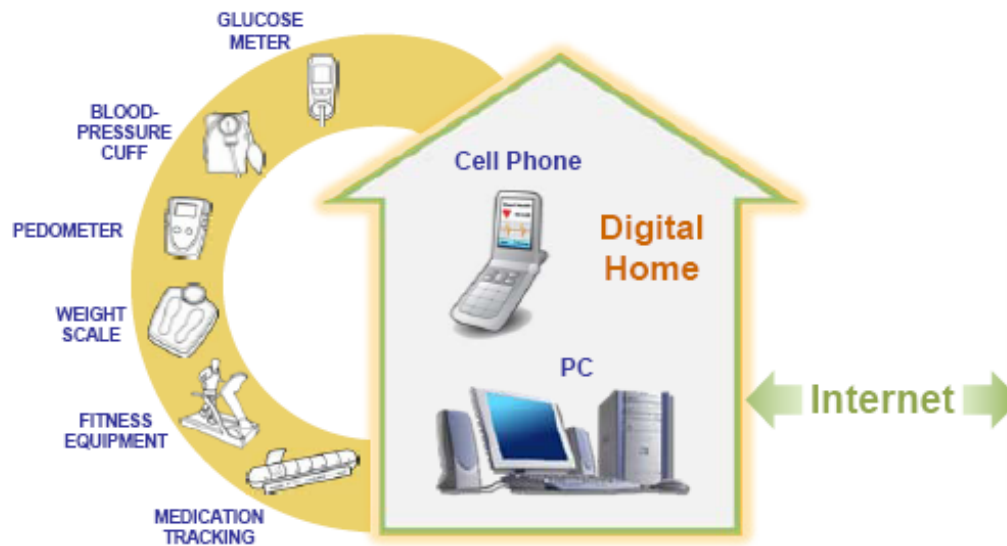
Healthy Family

Health & Wellness

- Weight loss
- Fitness
- “Worried Well” vital sign monitoring:
 - Weight
 - Blood pressure
 - Glucose
 - Cholesterol
 - Activity level
- Personal Health Records
- Appointment scheduling

In the future...

- Extension of healthcare system into the home
- Initial triage of non-emergency conditions
 - Vital signs
 - Images
 - Email / chat / video



Continua member companies help people live healthier, more active lives by connecting them to their health and wellness team through a more efficient exchange of their personal fitness information.



Weight loss and fitness coaching



Healthcare Professionals



Personal Health Record



Disease Management

860 million chronic disease patients world wide



- Chronic disease
- Post trauma
- Pre-op

Disease Management

- Vital sign monitoring (Remote Patient Monitoring)
- Medication reminders and compliance
- Utilize home network to locate devices in logical places:
 - Scale in bathroom
 - Pill minder in kitchen
 - Blood Pressure cuff in living room
- Trend analysis and alerts
- Email, chat, video
- Appointment scheduling



Continua member companies help people with chronic conditions live healthier lives by connecting them to their care team through a more efficient exchange of personal health information.

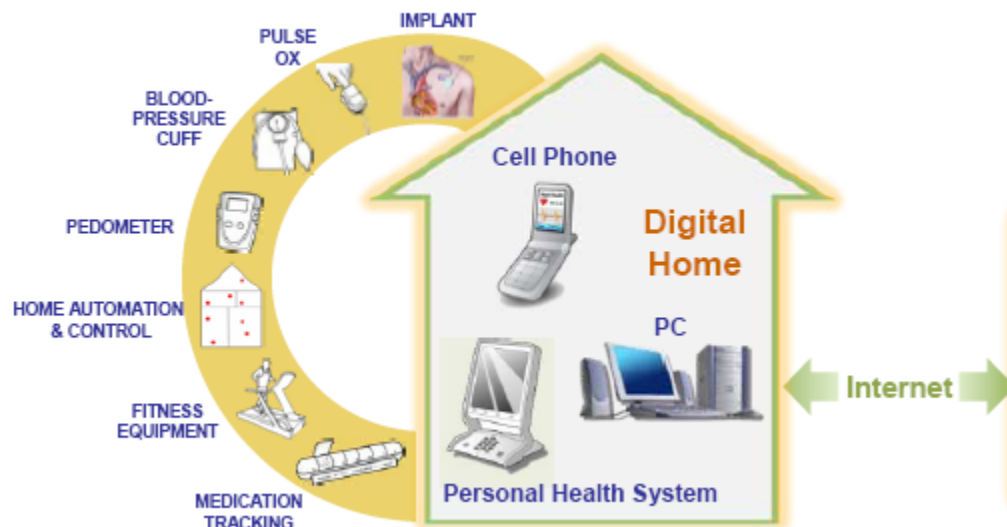




- Independent living
- Chronic disease

Aging Independently

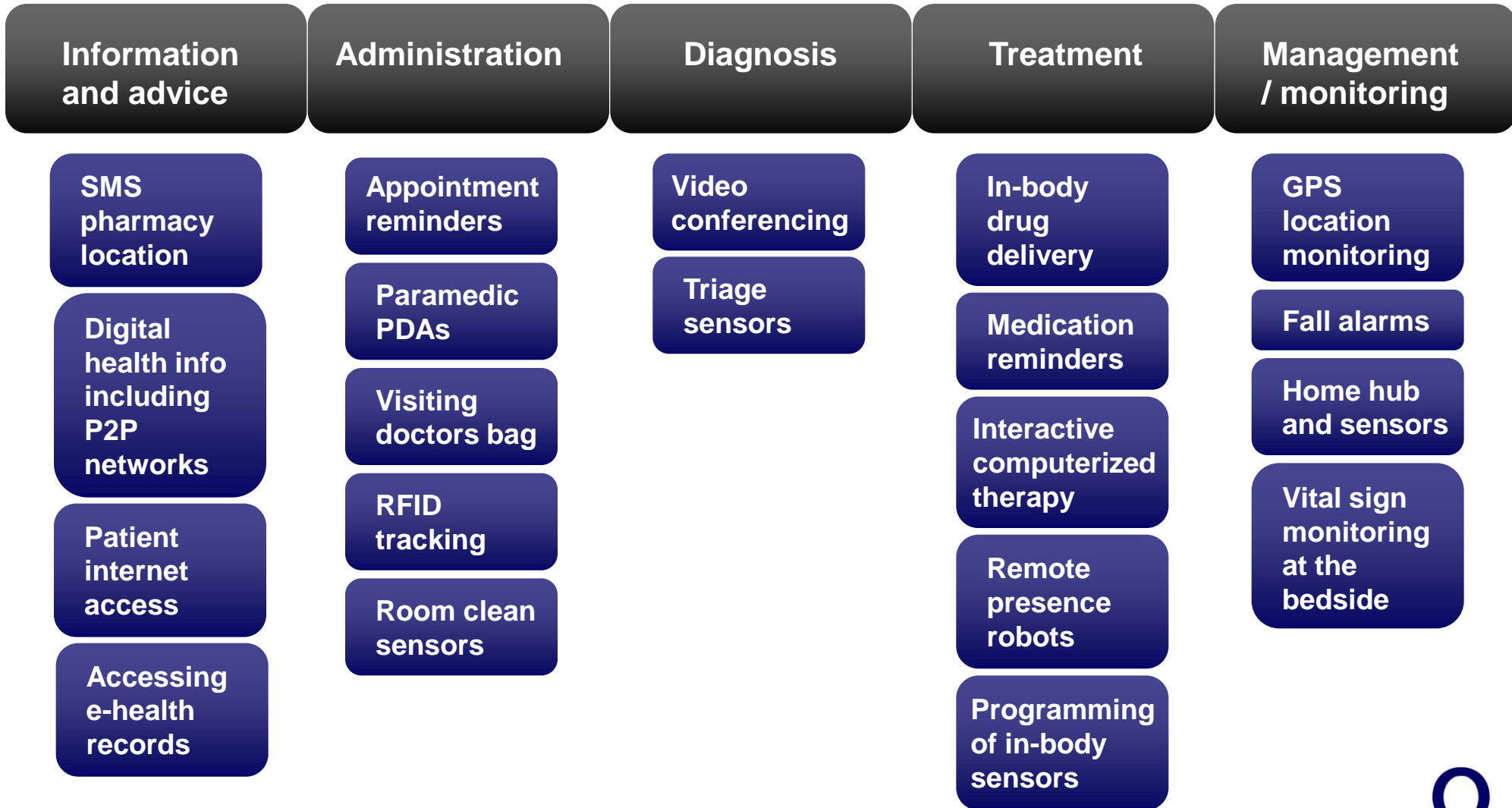
- An adult child helping their elderly parents age gracefully in their own home
- Basic life monitoring as appropriate (ADL):
 - Bed pressure (sleep)
 - Bathroom sensor
 - Gas / water sensor
 - Emergency sensor
- Vital sign monitoring (RPM)
- Medication reminders and compliance
- Trend analysis and alerts
- Email, chat, video
- Appointment scheduling



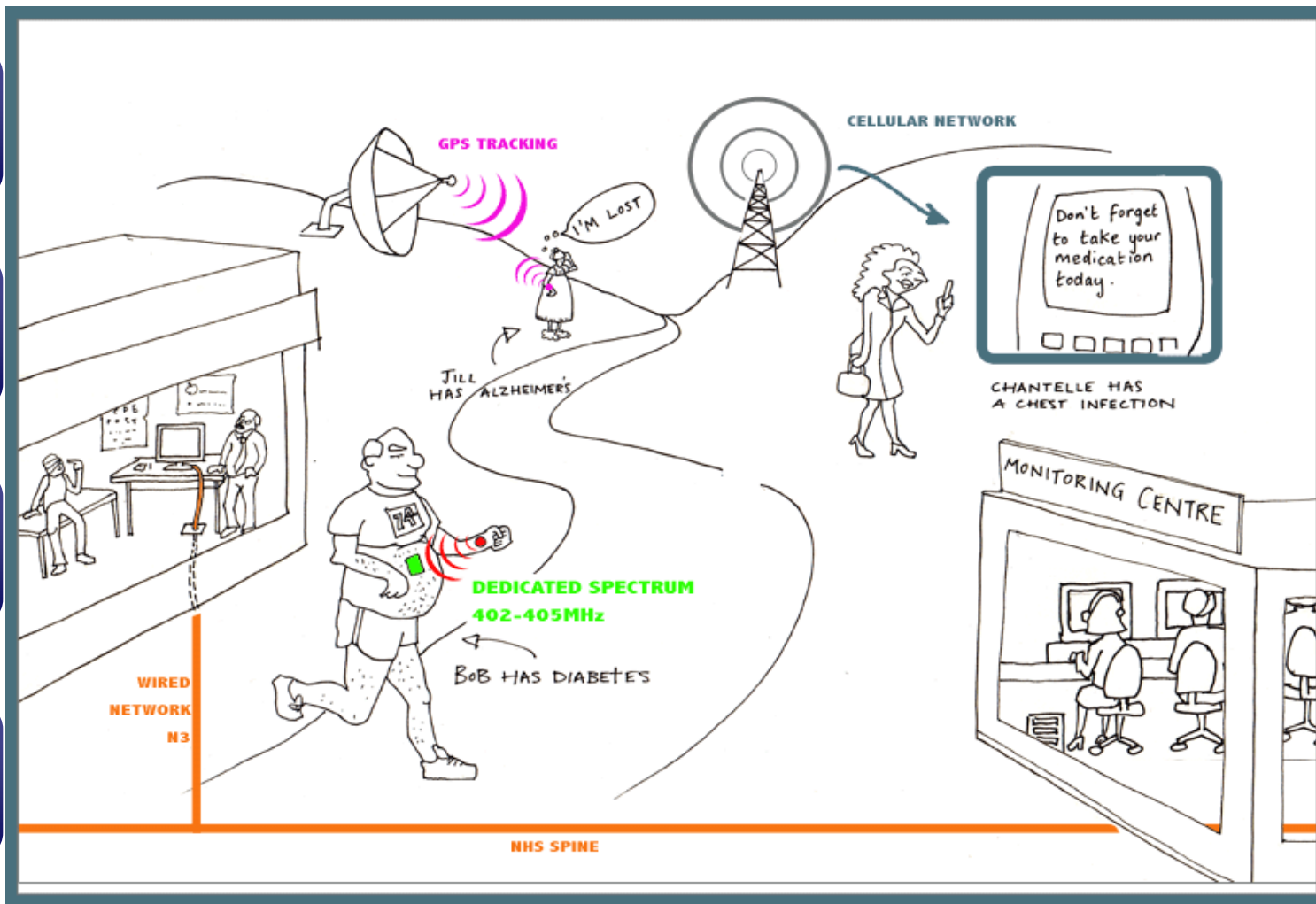
Continua member companies help the elderly age independently, with dignity and security, through the efficient exchange of personal health and safety information that connects them to their family and care team.

Future Potential of e-Health:

Examples categorised according to the patient need



Applications related to the individual, located everywhere



GPS location monitoring

E-health record access

In-body drug delivery

SMS pharmacy location

Appointment reminders

Medication reminders

Digital health info including P2P networks

Fall alarms

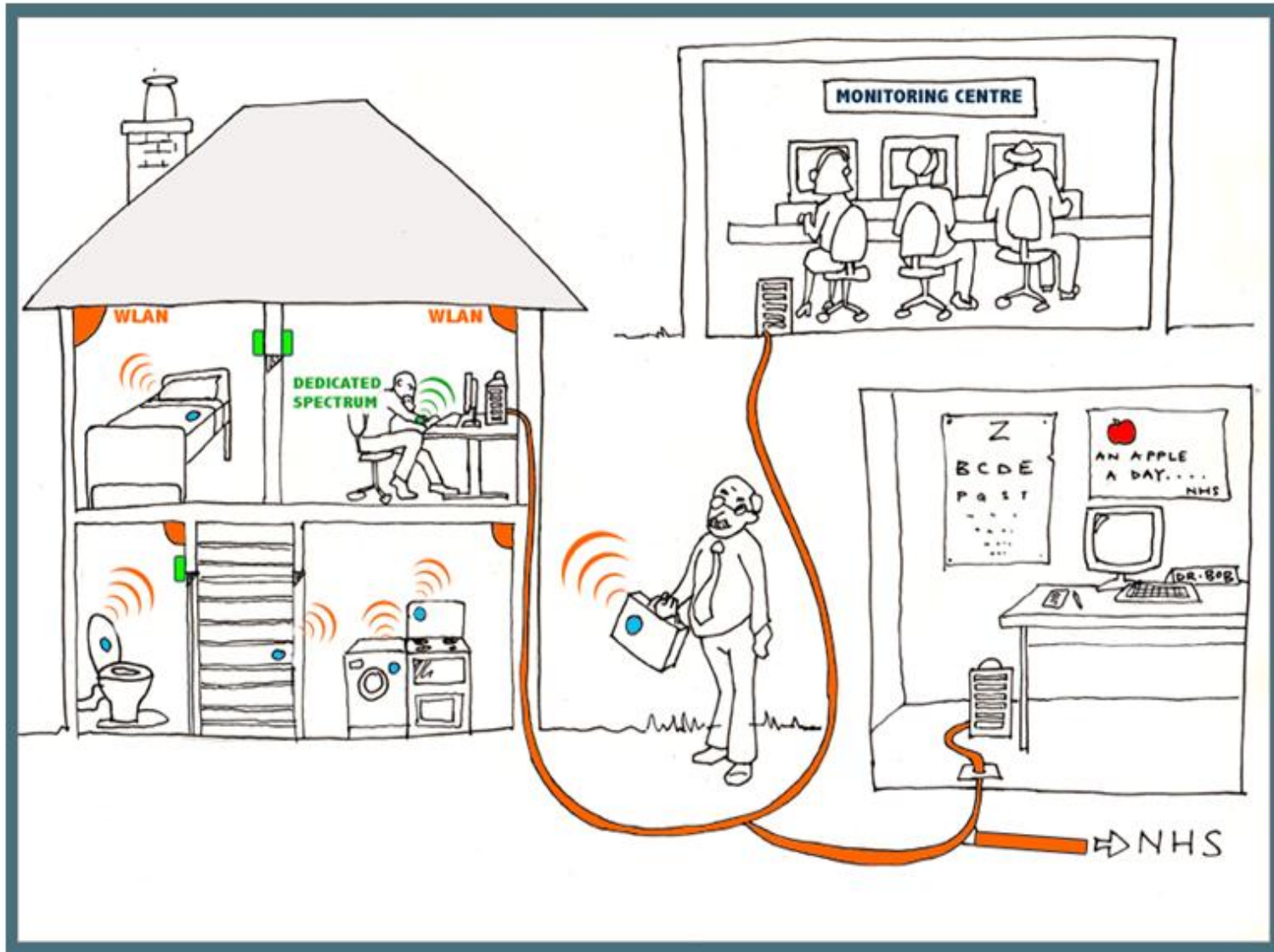
Applications in the home setting

Home hub
and sensors

Visiting
doctors bag

Interactive
computerized
therapy

Video
conferencing



Health Priorities

Reduce costs (& improve process efficiency through the deployment of IT services)

Reduce waiting times:

- Maximum of 18 week waiting time from GP referral to 1st appointment

Help people to live longer (with particular focus on the management of LTC)

Move care away from emergency & intensive care; drive effective community & primary care:

Build a Healthcare system to meet future demand

Why O2?

More people choose O2

- UK's largest mobile operator with 20 millions customers
- Preferential call rates within the O2 community, which includes NHS patients

Our customers are happier

- Customer satisfaction is our business priority
- We have a 6% lead over the competition, O2 and competitor surveys conducted by TNS
- Sunday Times '5th Best Large Company to work for'

Best network

- First network to offer 99% coverage of UK population
- Awarded 'Best Network of the Decade' by the Mobile Data Association
- EDGE deployed; widest Wi-Fi coverage; HSDPA coverage for 72% of UK population

Exclusive devices and support

- XDA range and iPhone
- Device customisation & managed services

Exclusive partnership with N3

- A total solution for fixed and mobile services

Part of the Telefonica family

- A heritage in the provision of healthcare services
- Making significant investments in health R&D

O2 with Telefónica is now the benchmark for the global Telco sector...



245 million accesses (as of June '08)

✓ **1st** International integrated Telco operator by customer base



Revenues (2007): € 56.4 bn

Net Income* (2007): € 8.9 bn

✓ **1st** European integrated Telco operator by market capitalisation



Integrated ICT solutions
provider for all its customers' needs

✓ Among the **50** largest companies in the world by market cap



About 250,000 professionals**

✓ Among the **100** largest companies in the world by revenues

* Figure includes capital gains from disposals (€ 1.3 bn from Airwave in 2Q07 and € 1.37 bn from Endemol in 3Q07) and several provisions accounted in 4Q07.

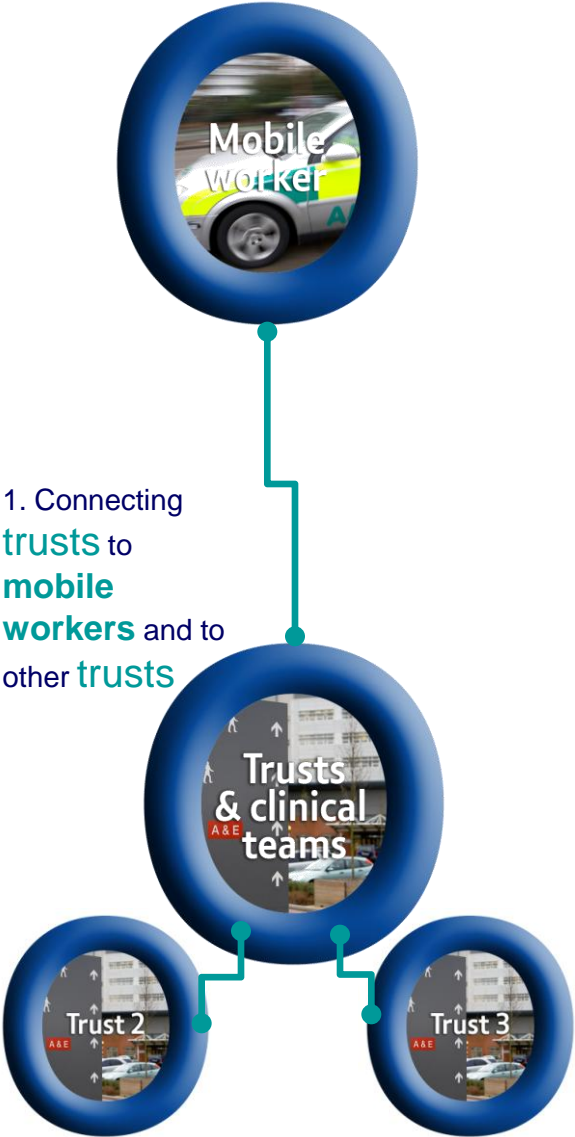
** Average staff as of December 2007.

Telefónica's I+D Centre in Granada

- **Telefónica's I+D centre in Granada** - an agreement and an association with the Andalusian Government.
- It has been agreed that the I+D Centre will be located on the New Healthcare Science Park in Granada, as the focus of our centre is Healthcare and will later be expanded to cover Teleassistance and Social care.
- Close collaboration with Andalusian Local government (Ministry of Science Innovation & Employment) and also with the Ministry of Health, for the initial launch of the centre, as well as the definition of its activity and development.

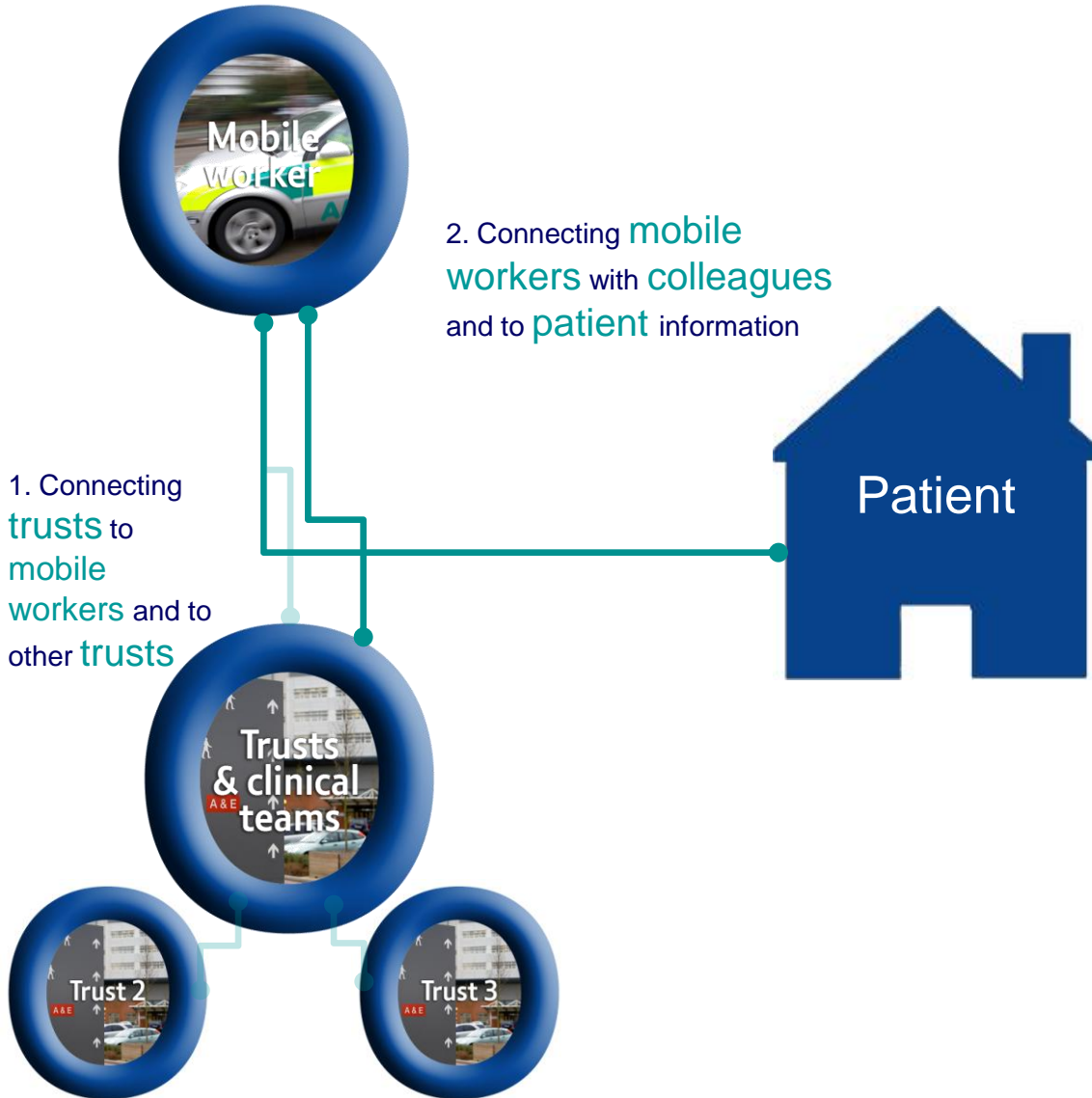


Vision: connected health

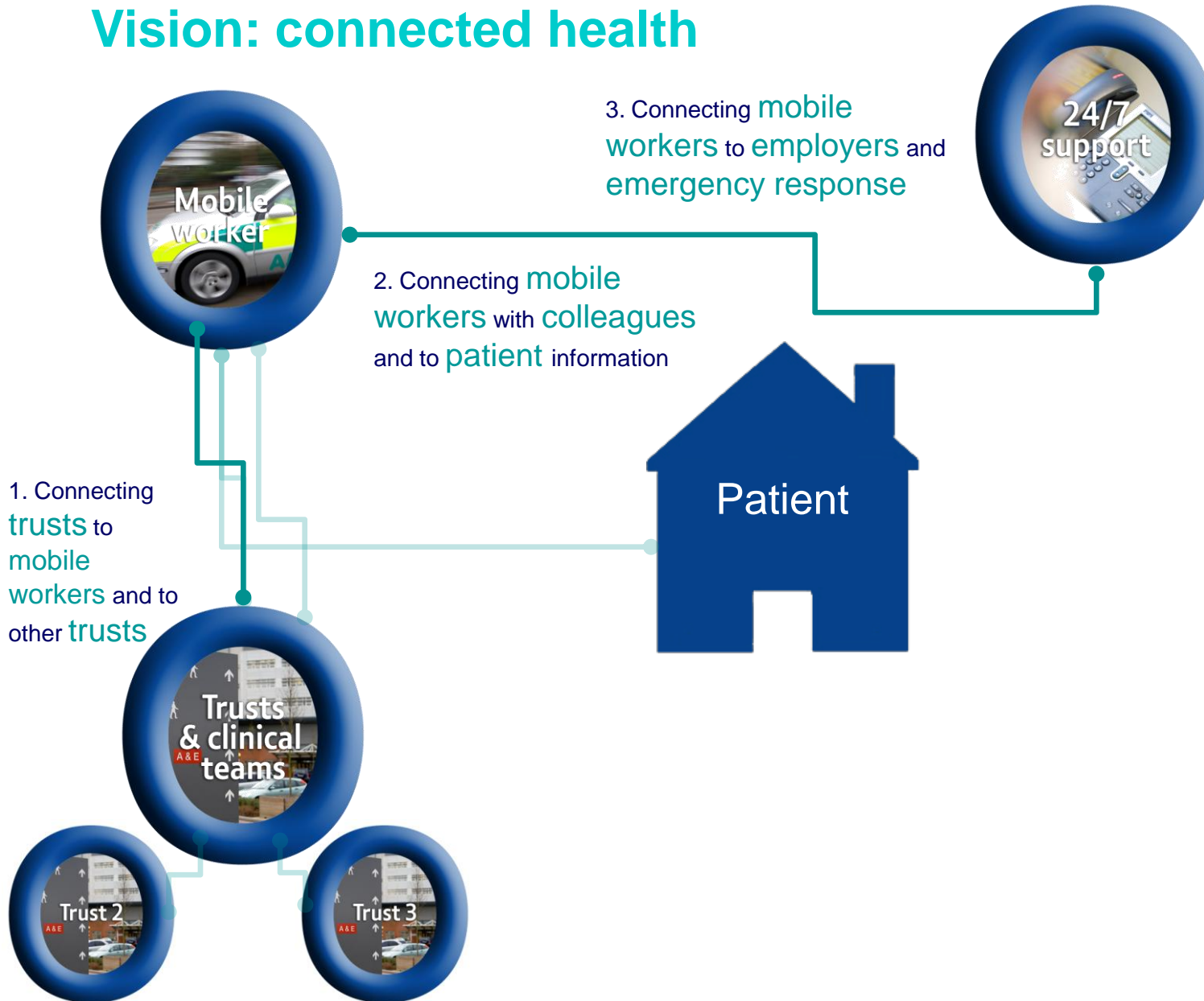


Vision: connected health

- 1. Mobile & Fixed Integration Solutions
- 2. Mobile worker solutions

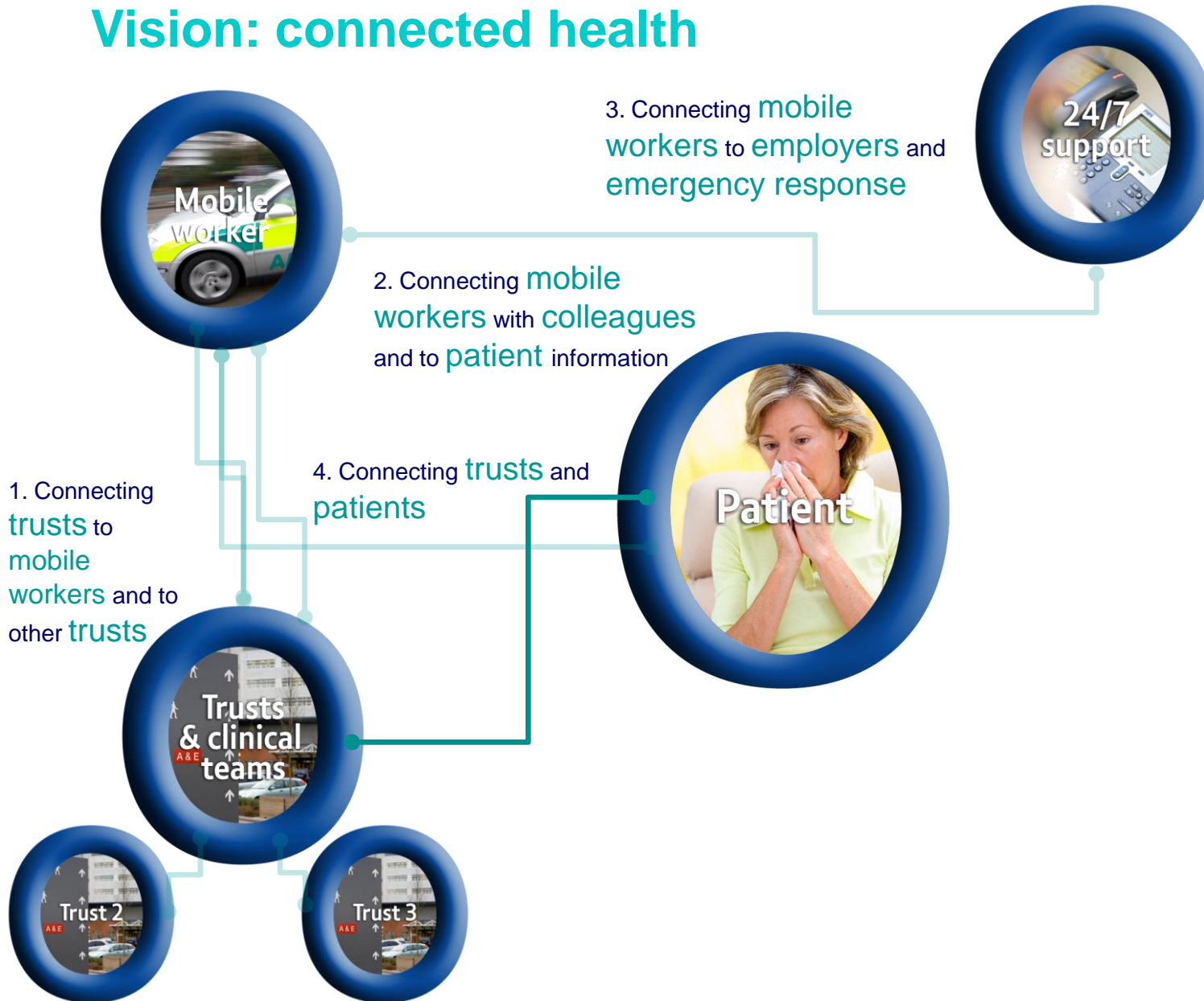


Vision: connected health



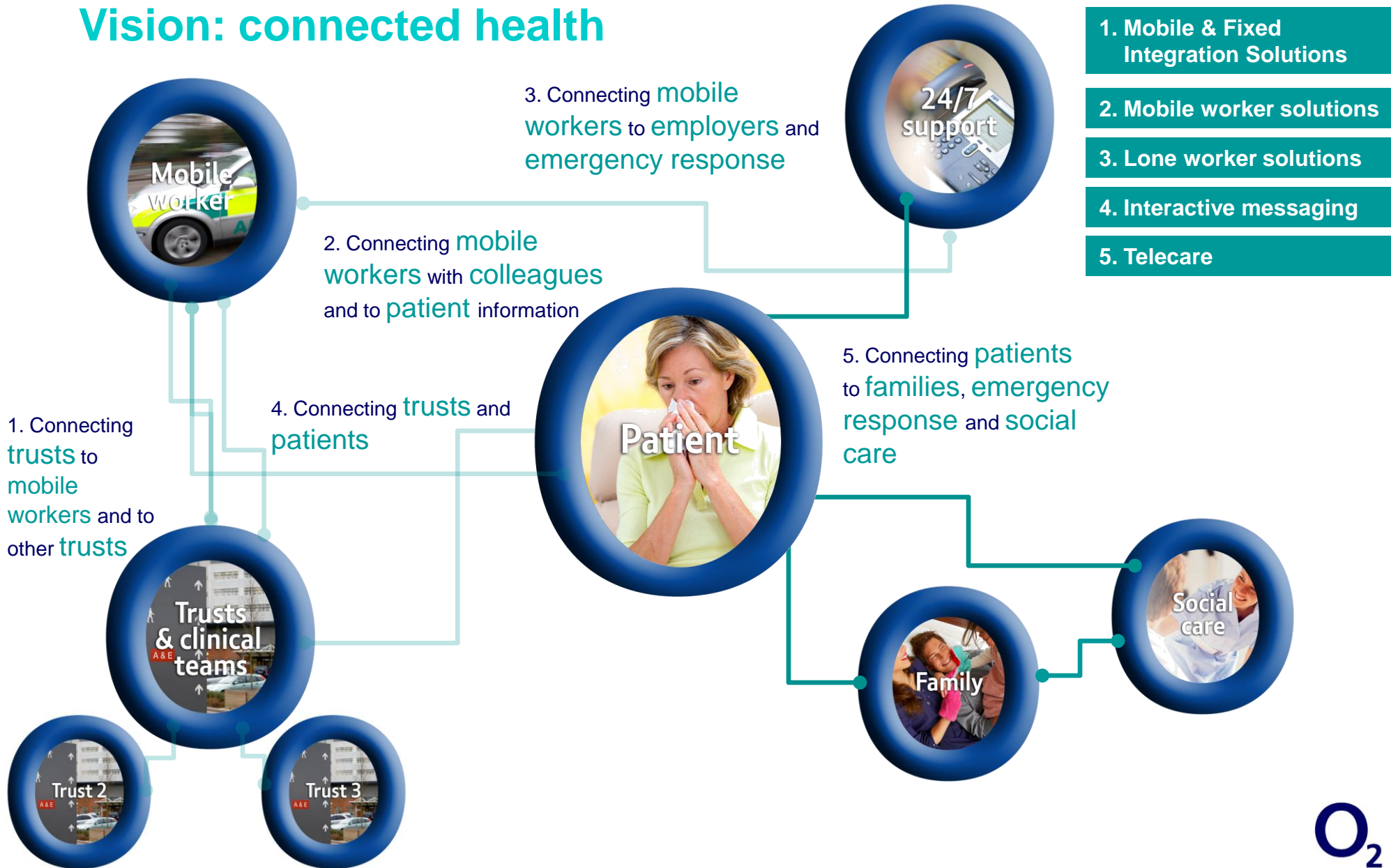
- 1. Mobile & Fixed Integration Solutions
- 2. Mobile worker solutions
- 3. Lone worker solutions

Vision: connected health

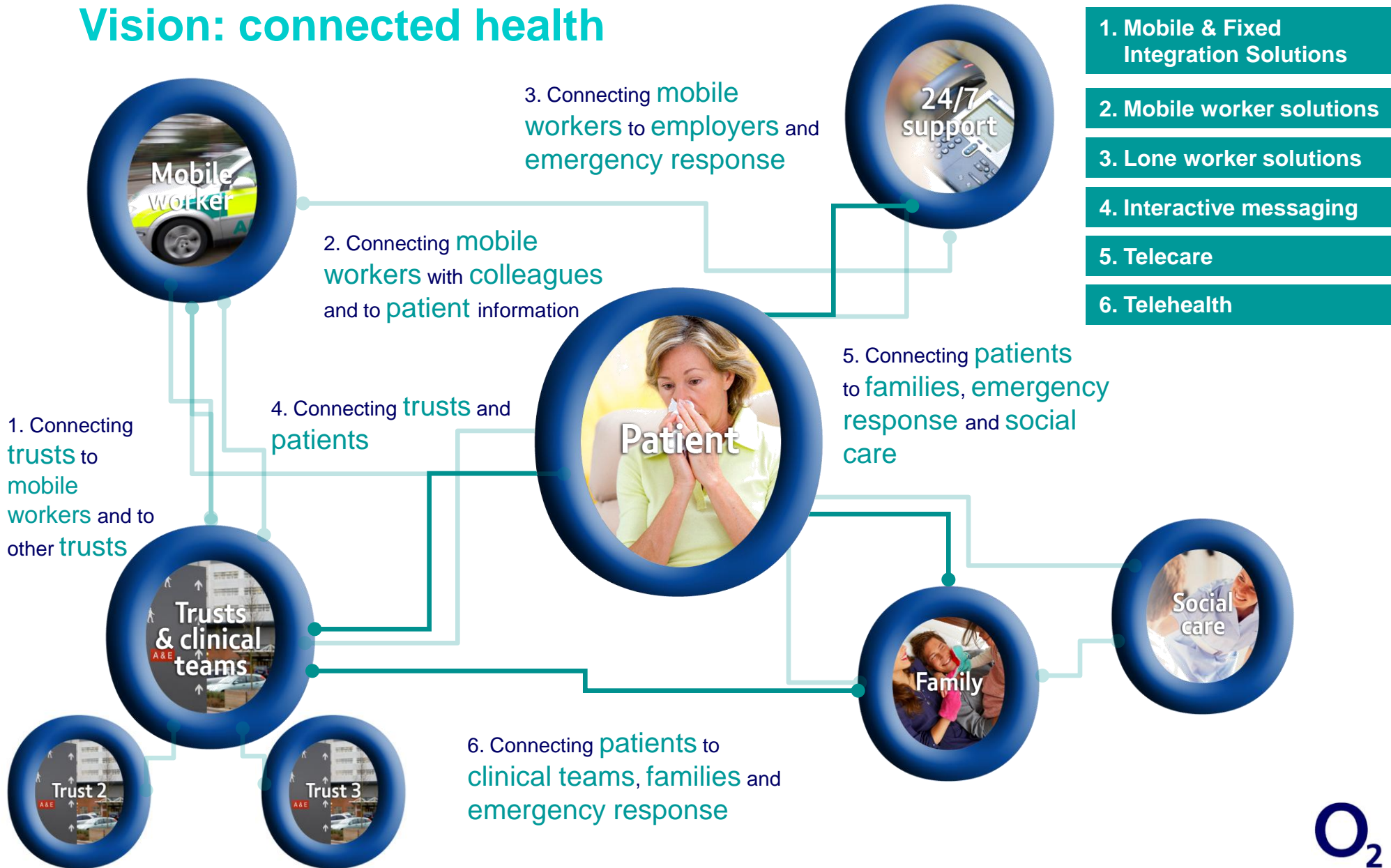


- 1. Mobile & Fixed Integration Solutions
- 2. Mobile worker solutions
- 3. Lone worker solutions
- 4. Interactive messaging

Vision: connected health



Vision: connected health



Life enhancing – improving the quality of the patient/staff experience

Lone Worker

What:

Lone Worker is a range of solutions for organisations with staff working alone or in vulnerable situations

Proactive management tool

- Track staff locations using GPS
- Set times for staff visits
- Set parameters for appropriate responses

Covert emergency alarm

- Linked to 24/7 monitoring and response services



Why:

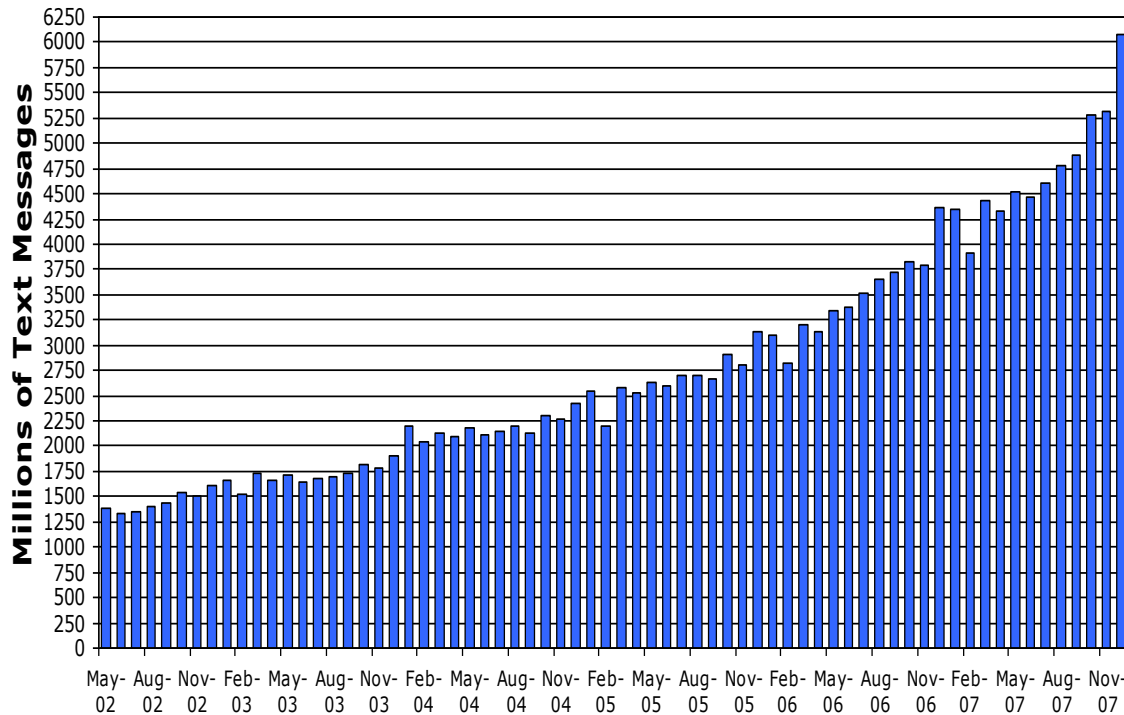
An essential tool to support increased levels of care in the community

- Address staff safety concerns – 81% of lone workers are concerned about violent aggression*
- Helps employers meet their duty of care obligations, providing a risk, incident and compliance solution
- Avoids costly HSE physical assault investigations (estimated at £17 -19k per case)

*Suzy Lamplugh trust survey

Mobile Market Overview - SMS

- There is now **115%** mobile penetration in the UK – around **69 million** handsets!
- **57 billion SMS** messages sent in 2007 – **290 million** on New Years Eve!
- SMS continues to grow – from **5.3 billion** (Nov '07) to **6 billion** (Dec '07)
- There has **never** been a better to time to engage with your customers via their mobile!



Uses for messaging in health:

- Appointment Reminders
- Patient services communications
- Communications to staff
- Medication Reminders

Source: MOBILE DATA ASSOCIATION

Wait Reduction – reducing waiting times and lists

What:

Appointment Reminders is a text based solution for reminding patients about appointments, aimed at primary and secondary care organisations

- A means of communicating directly with patients, en masse or automatically
- A two-way communication tool – a mechanism for obtaining feedback from patients
- Messages are initiated from a desk top and sent to patients' mobile phones

Why:

Missed appointments cost the NHS £614 million pa*

- Reminder services have been seen to significantly reduce 'missed appointments'+
- The tools are in place now – the majority of people have a mobile phone and 12 million people in UK, aged over 55, have mobile phones
- Improved service for patients – opening up channels of communication
- Requires no significant change to working culture; reduces inbound calls
- An easy low-cost solution - text cost less than a stamp

* Department of Health (Imperial College suggests this is as high as £789 million)

+ Imperial College has suggested NHS could save £240-£370 million pa by implementing a Nationwide text-based reminder service

e-Wellbeing & Lifestyle for everyone to prevent future health risk

Obesity and physical inactivity is another pressing healthcare issue

- ▶ More than 1 billion people in the world are overweight, and at least 300 million of those are clinically obese.
- ▶ Every year, more than 2 million deaths worldwide are attributable to physical inactivity.
- ▶ In 2005, the World Health Organization reported that it expects more than 2.3 billion to be overweight by 2015

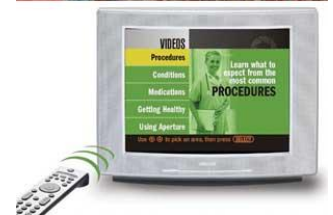


- ▶ Preventing future health risks by engaging citizens in a healthy and balanced lifestyle through challenging self-health management and fitness solutions

Potential e-Wellbeing value proposition (selected examples)

Customise virtual coaching experience for each patient and deliver personalized, engaging media-rich content:

- ▶ **Personalised educational material** delivered as video-on-demand, with topics relevant to the patient's well-being needs.
- ▶ **Reminder applications** to exercise
- ▶ **Wellbeing signs** measurements, monitoring and feedback management to help patients track progress toward personal goals.
- ▶ **Motivational messages** applications from caregivers to help encourage healthy lifestyle choices for diet, exercise, stop smoking...
- ▶ **Stress relief coaching communicating devices and applications**



Conclusions

- **Mobile technology will support change and growth**
- **Messaging & Lone Worker solutions, followed by Telecare/Telehealth Solutions**
- **Services will help care provider address growing pressures & meet targets**