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## Effectiveness of Telehealth and Telecare: The Whole Systems Demonstrator Project

Tuesday 11<sup>th</sup> June 2013

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on behalf of the WSD Evaluation Team

Health Services Research and Management Division  
School of Health Sciences - City University London



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### content:

assistive technology topology

overview of the wsd project

patient reported outcomes

lessons and challenges

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## technological advances



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## the vision – tele assistive devices



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## terminology for technology enabled practice

TC telecare

TH telehealth

TM telemedicine

key:  
remote delivery of services and remote exchange of info

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## tele-care

- TC passive monitoring (reduce technophobia?)
- TC synchronous monitoring (24-7)

functional


security

environmental

stand-alone


via needs assessment

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## tele-health

- TH active monitoring (take measures, react to)
- TH synchronous (24-7) or asynchronous (s&f)
- TH stepped care responses




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## tele-medicine

- TM remote consultations (inc. access to service)
- TM pre-prepared packages of therapy
- TM real-time therapy (most extreme robotics)



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### envisaged benefits

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### evidence of benefits


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## DH - whole systems demonstrator

- aim to provide a comprehensive evaluation of the addition of **telecare** and **telehealth** to whole systems re-design
- plan to assess up to 6,000 individuals and up to 660 carers with a variety of methods and levels of analysis

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## wsd evaluation

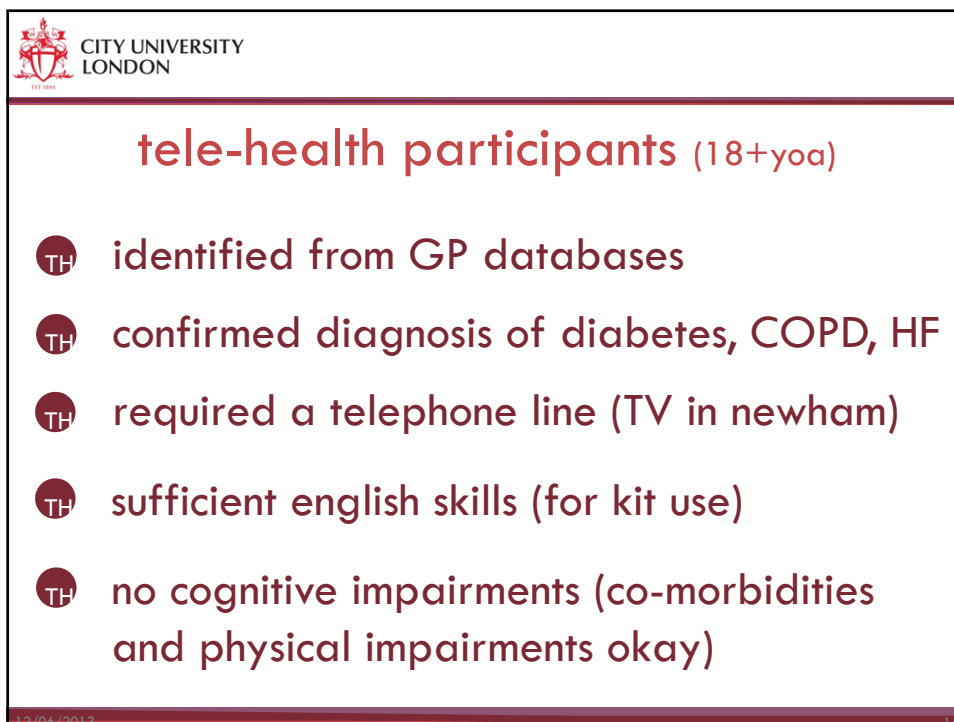
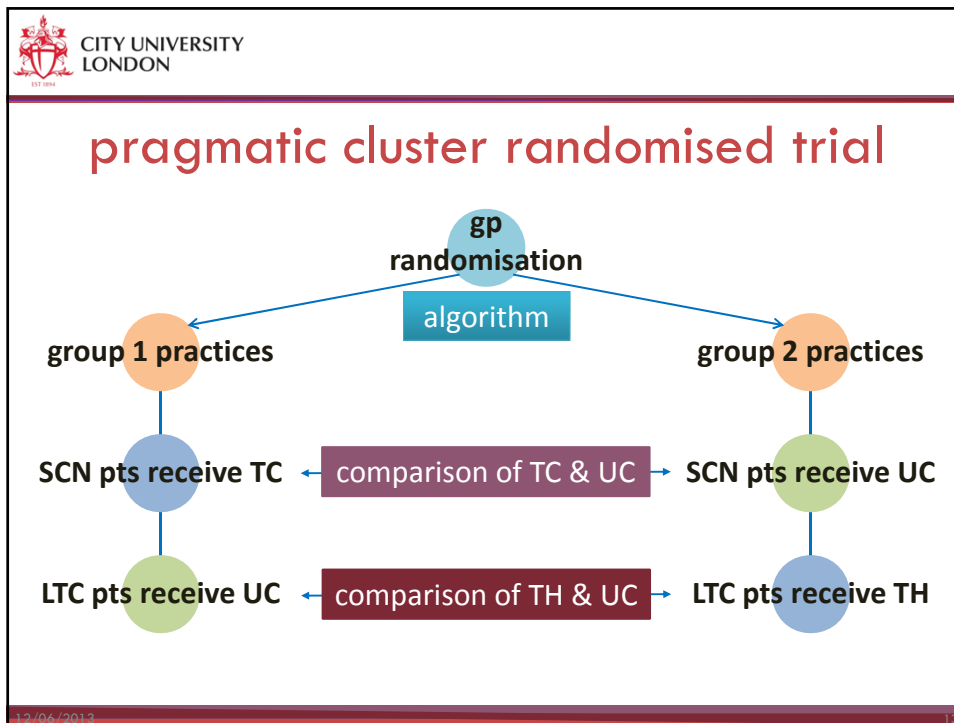
kent newham cornwall

TC patients with social care needs

patients with long-term conditions TH

diabetes heart failure copd

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## tele-health service

TH site differences between services, however all had a focus on **monitoring vital signs, symptoms** and **self-management behaviour**

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## tele-care participants (18+yoa)

TC individuals with social care needs (scn), identified via databases or lists of service users with known need

TC receiving:

- (i) night sitting
- (ii) 10+ hrs/week home care
- (iii) 1+ days/week of care
- (iv) mobility difficulties
- (v) risk of fall
- (vi) cognitive impairment
- (vii) live-in/nearby carer facing difficulty

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## tele-care participants (18+yoa)

- TC appropriate power supplies and telephone
- TC no existing 'connected' telecare

- functional
- security
- environmental
- stand-alone
- via needs assessment

- TC fewer site differences in service provision

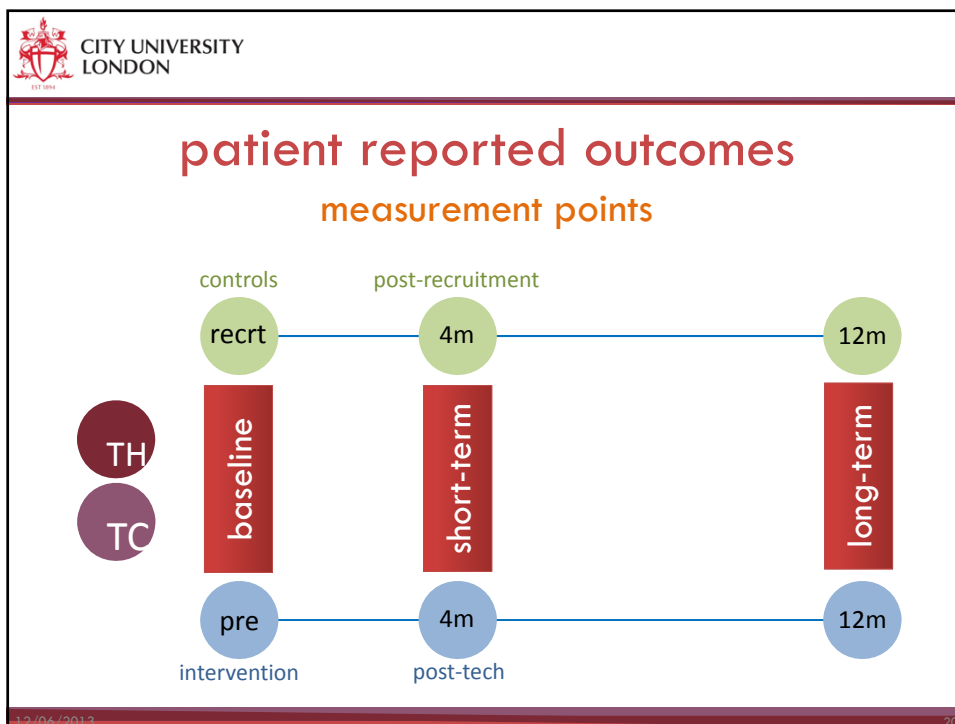
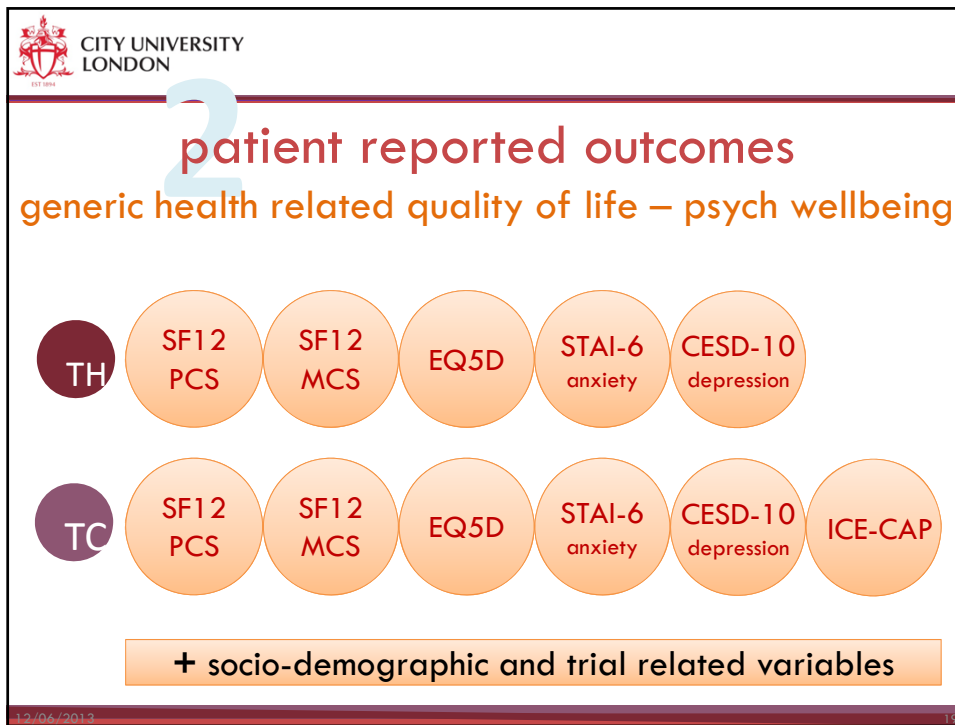
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## wsd evaluation

- 1 service utilisation  
quantitative
- 2 patient reported outcomes  
quantitative
- 3 cost effectiveness  
quantitative
- 4 patient & professional experience  
qualitative
- 5 service delivery & organisation  
qualitative

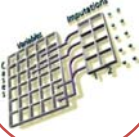
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## analyses

- TH & TC datasets were treated independently




linear  
mixed models  
-nested data

ITT with  
covariates

PCS  
MCS  
EQ5-D  
STAI-6...

- covariates were slightly different for the two datasets, reflecting the different contexts – both included baseline scores of outcome
- key effects: trial arm, time & trial arm\*time

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## tele-health participants

3230 participants in the TH trial (238 GPs)

1573 (49%) participated in the TH questionnaire study (154 GPs)

986 (63%) – complete ST FU      974 (62%) – complete LT FU

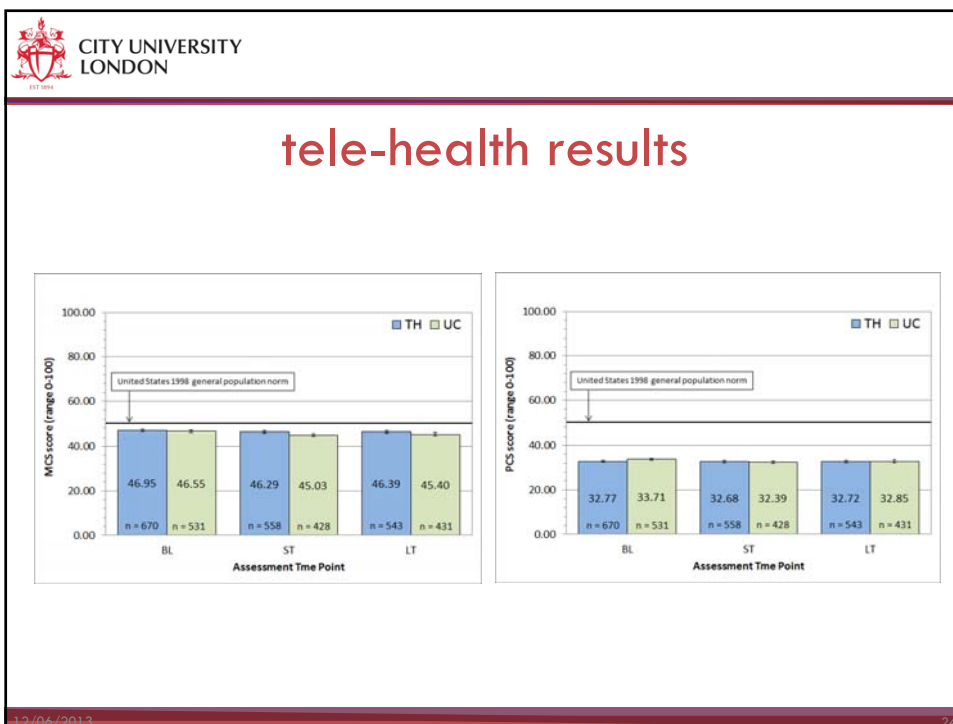
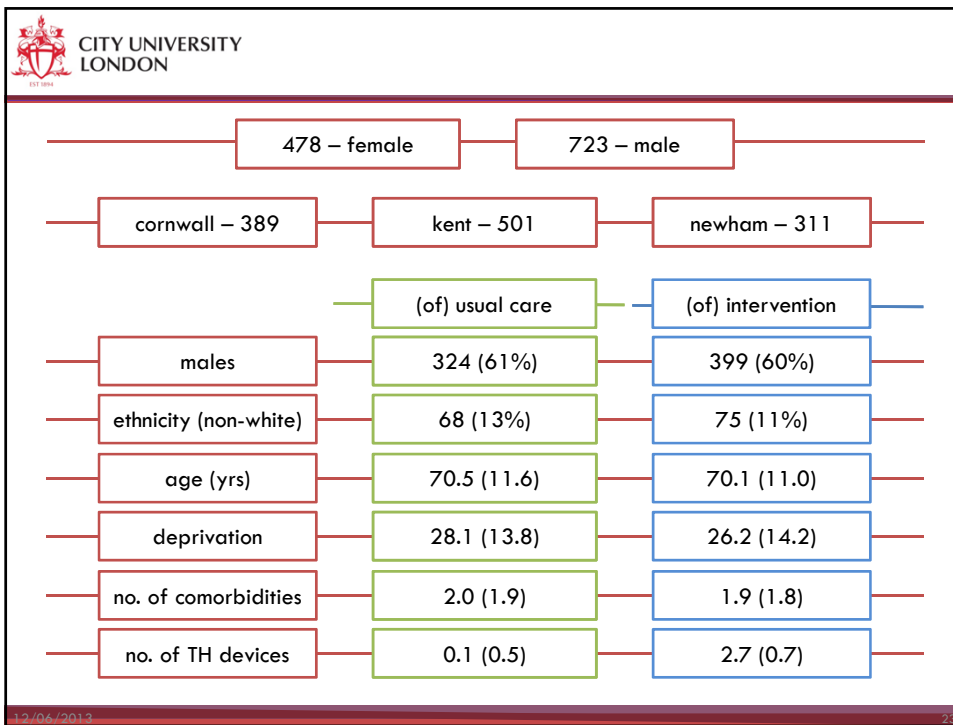
1201 (76%) completed baseline plus one follow-up questionnaire

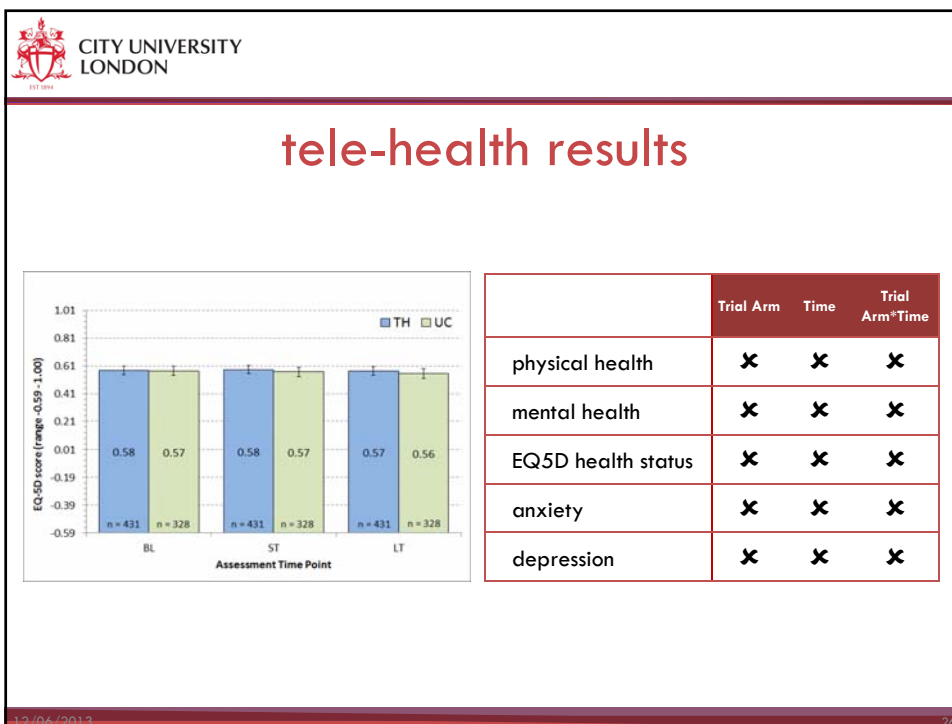
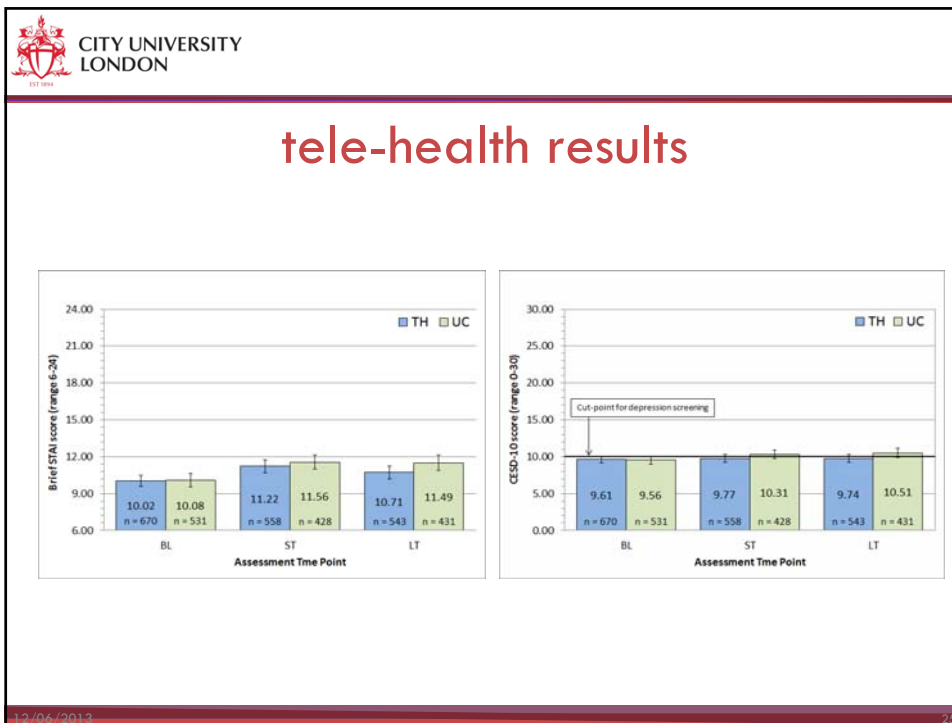
participants for available case cohort – intention to treat analyses

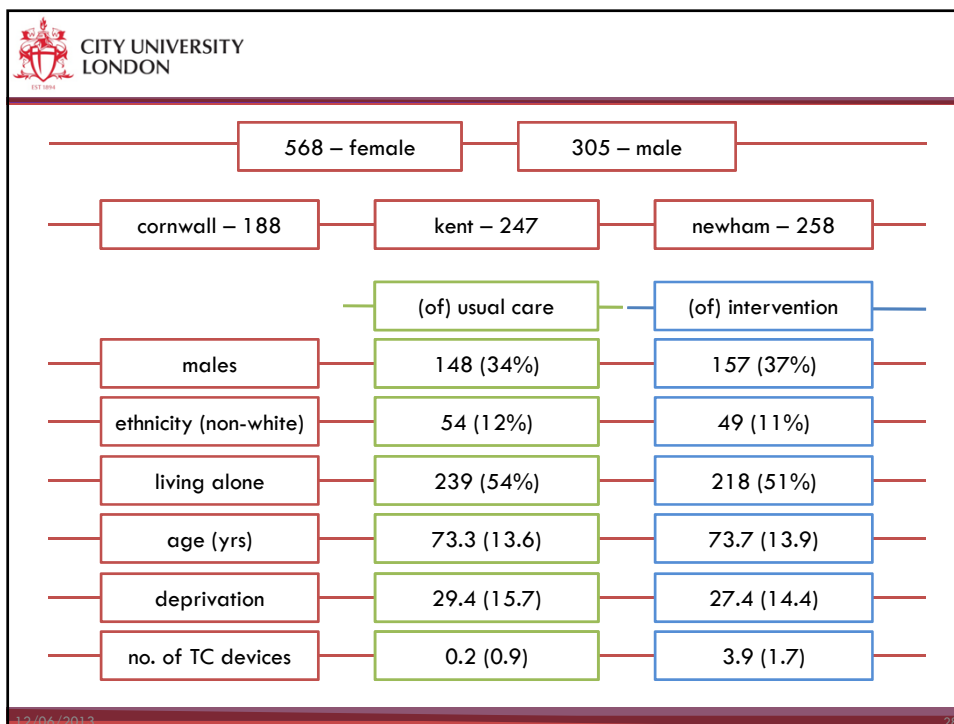
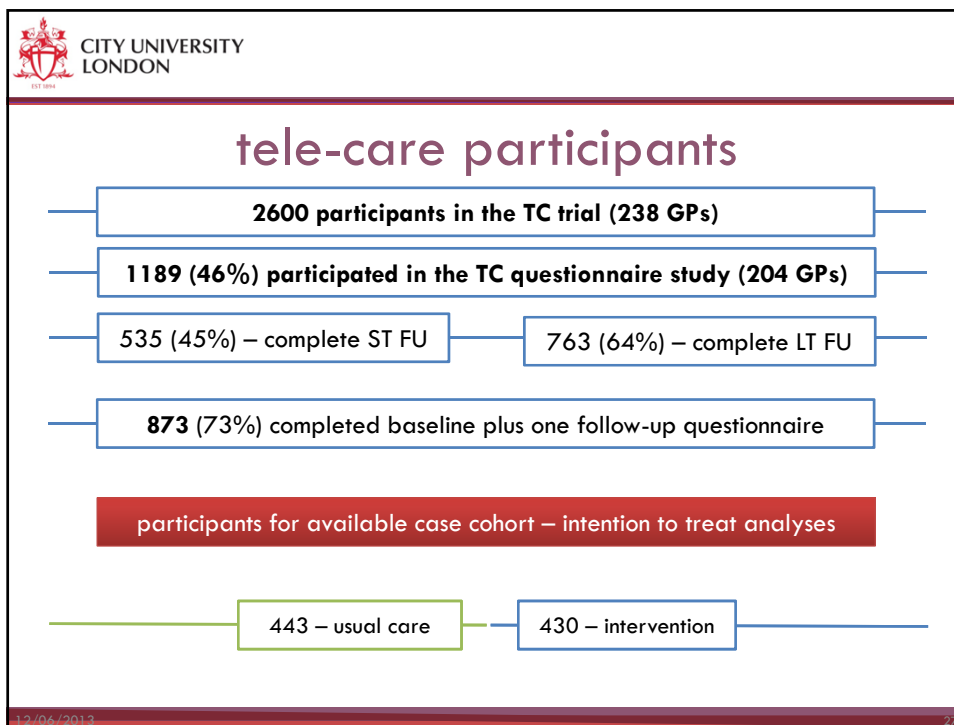
531 – usual care      670 – intervention

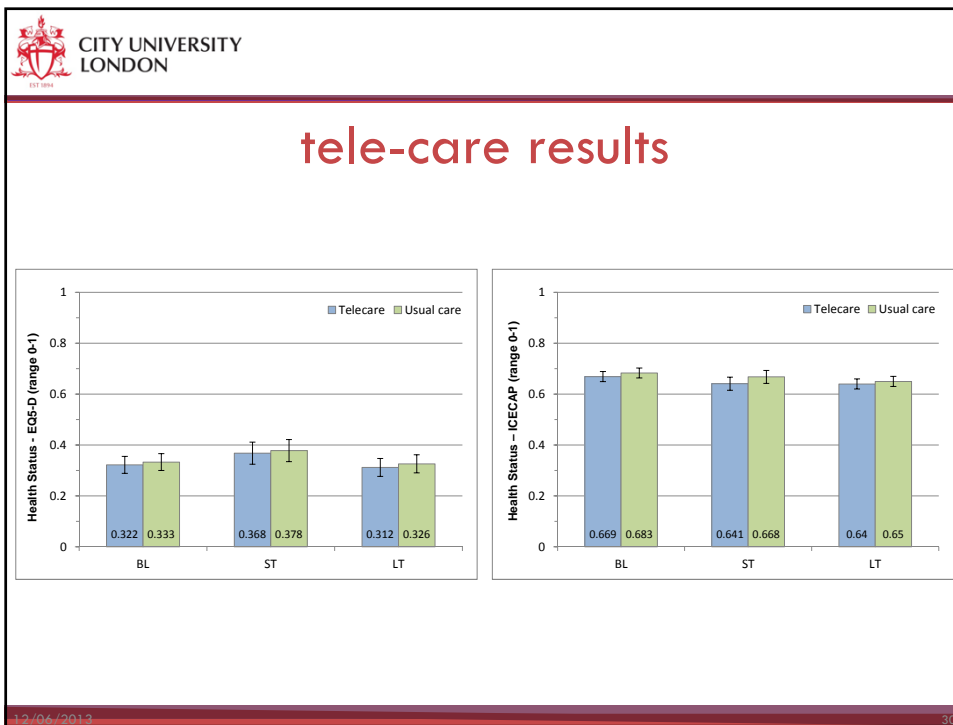
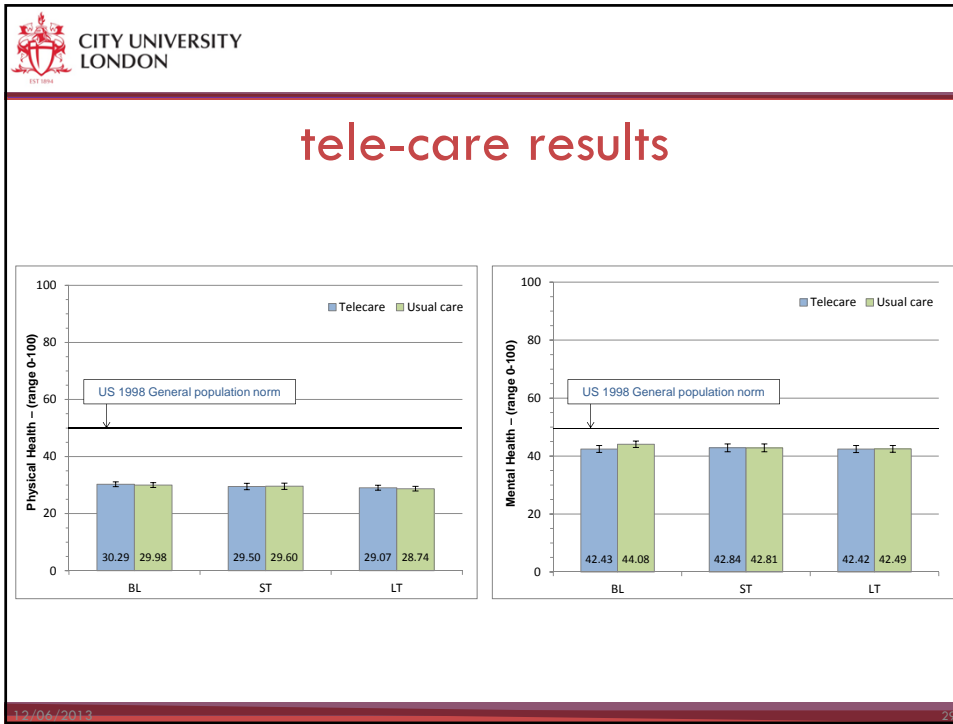
copd – 576      diabetes – 488      heart failure – 532

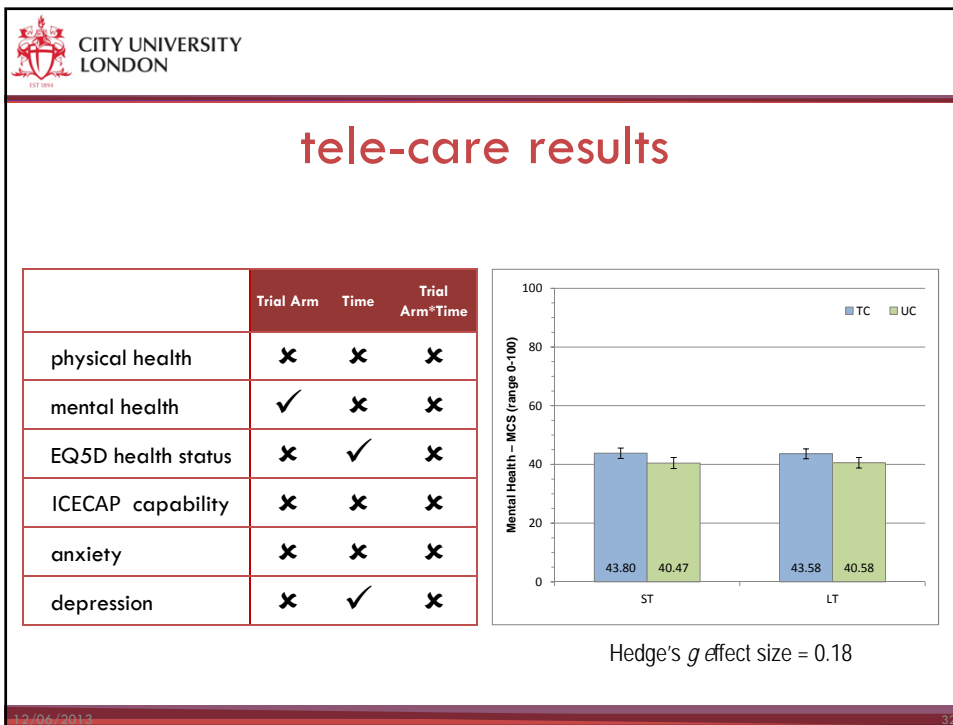
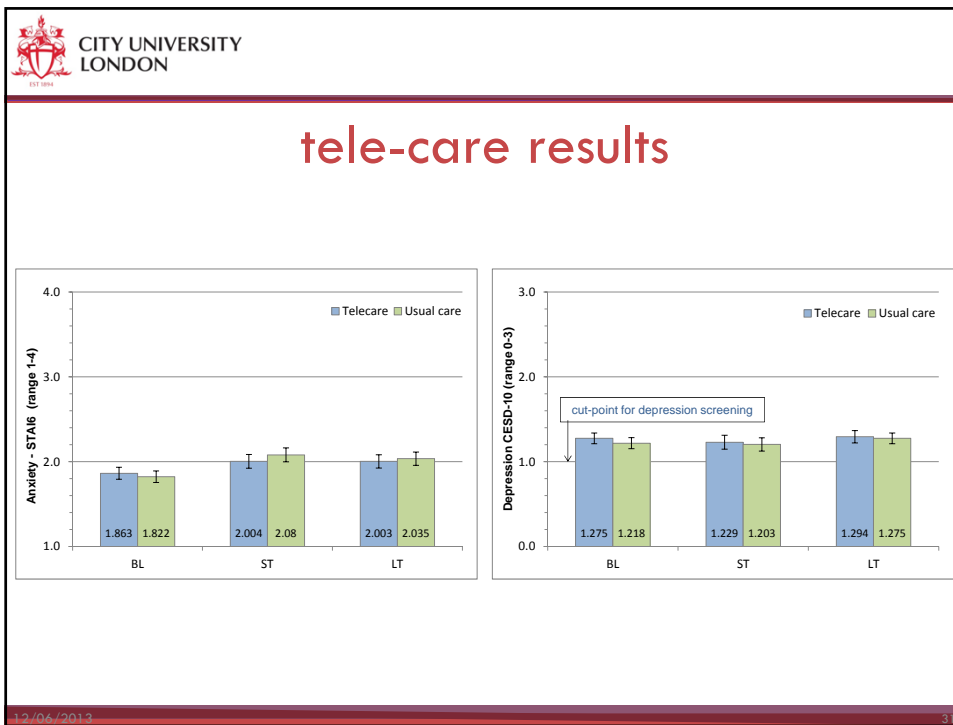
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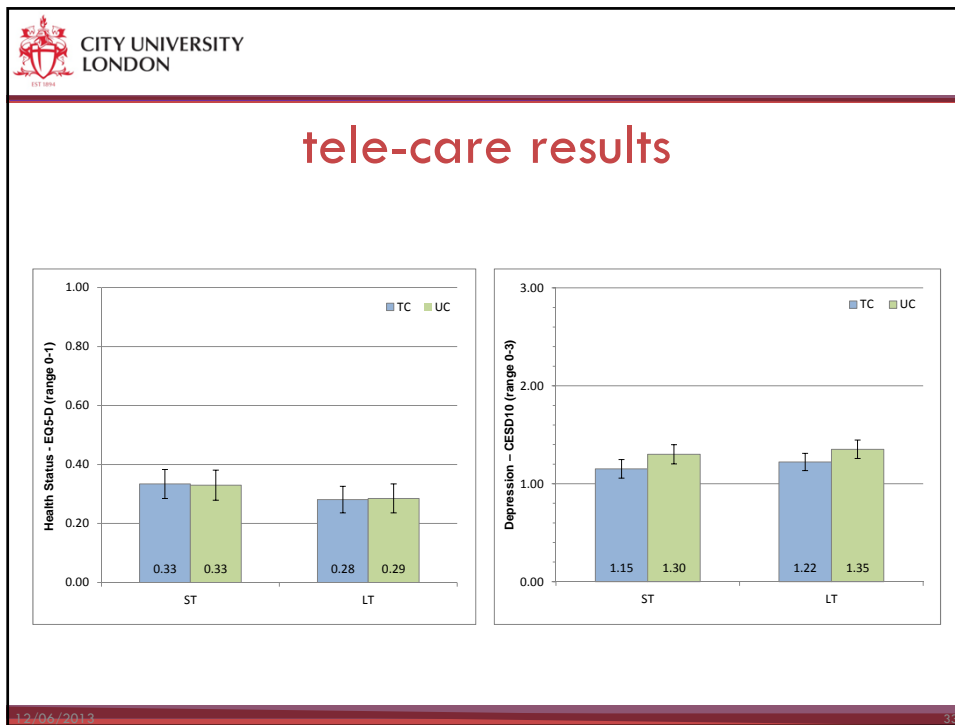










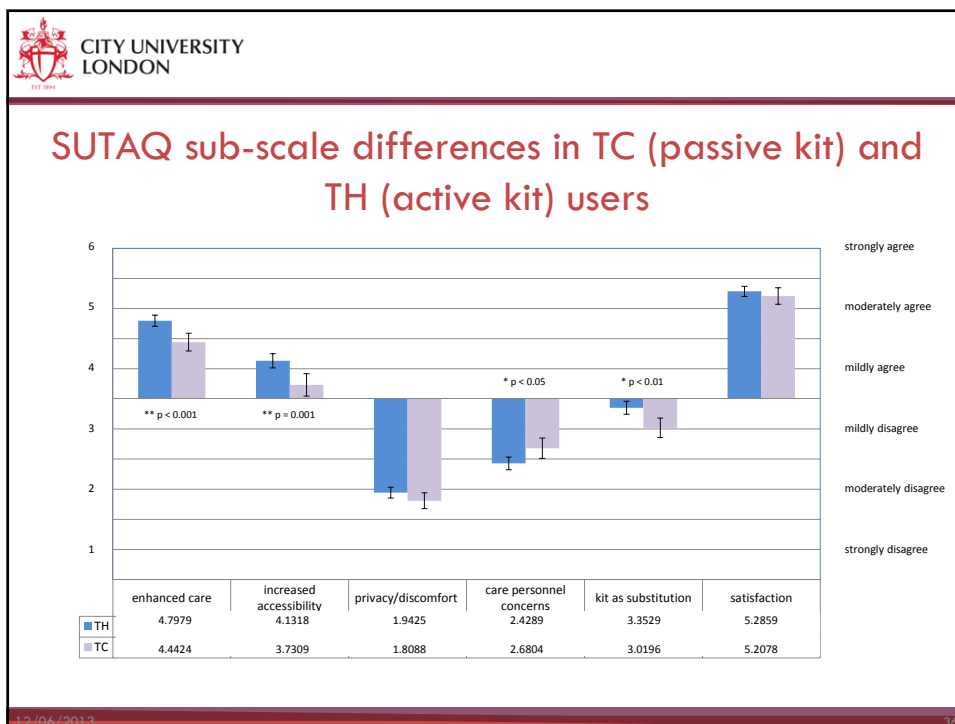
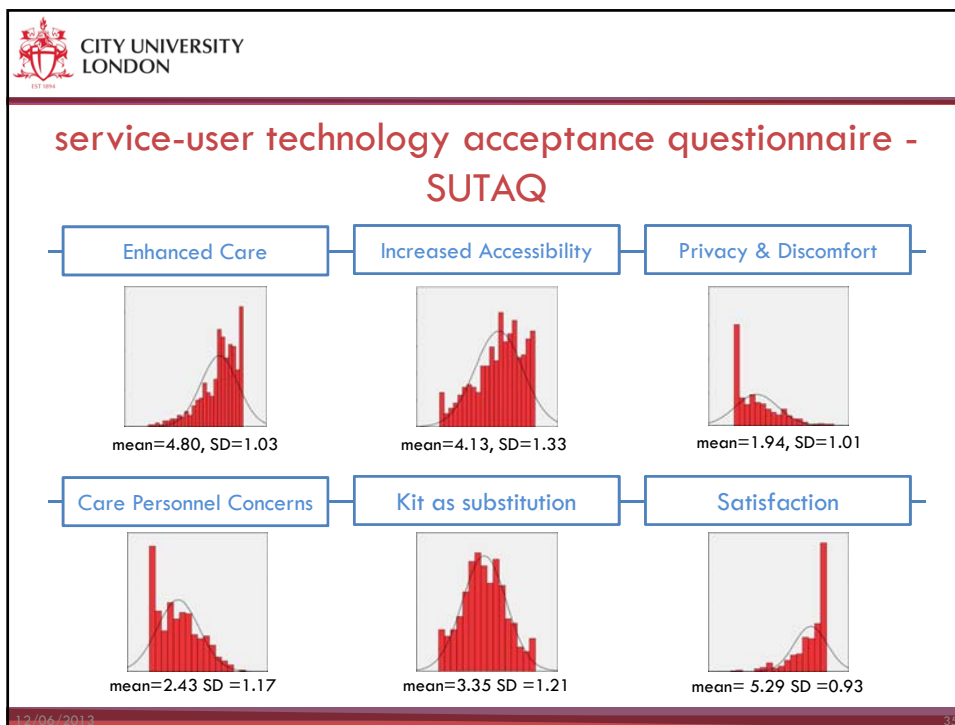


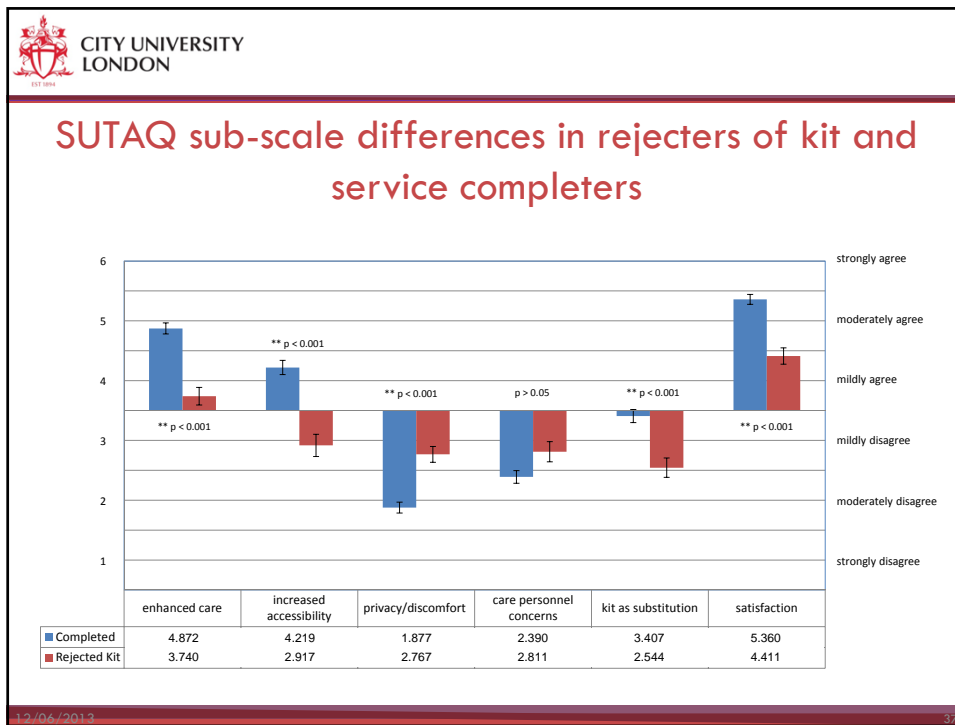
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## what have we learnt? what are the challenges?

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### what have we learnt? what are the challenges?

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thank you

questions?

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