

Integrating technology into the management of Parkinson's

Suma Surendranath

Professional Engagement Programme Manager

WIN Annual Conference 2016

PARKINSON'S^{UK}
CHANGE ATTITUDES.
FIND A CURE.
JOIN US.

What is Parkinson's?

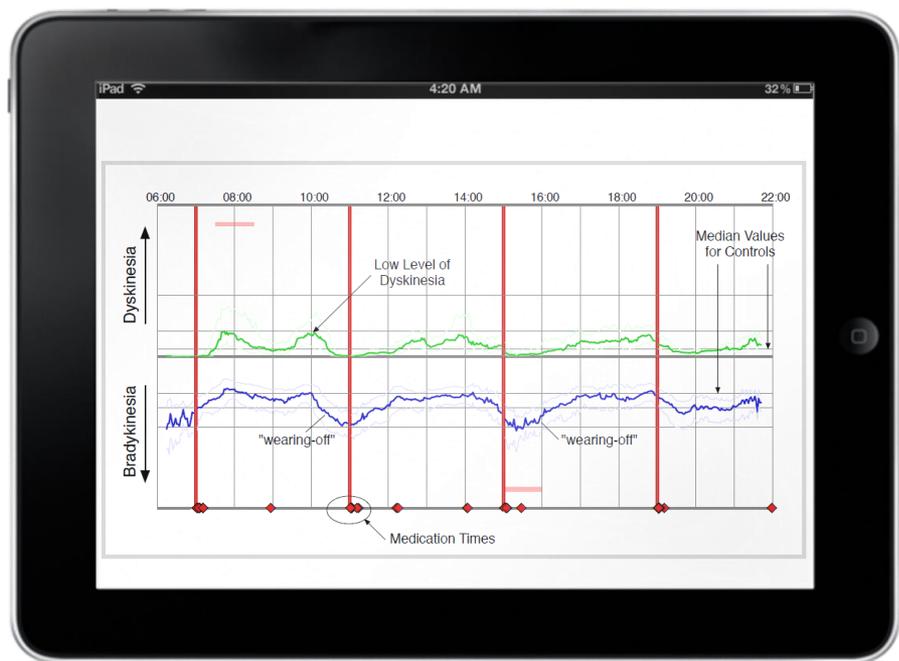
- Currently affects 127,000 people in the UK
- A progressive neurological condition caused by loss of dopamine-producing cells in the brain
- Typically affects movement but also causes non-motor symptoms
- Currently there is no cure
- Diagnosis and decisions on treatment based on clinical examination
(no definitive objective tests)

How could technology support more effective management in Parkinson's?

- Aid swift and accurate diagnosis?
- Enable more informed consideration of treatment options
- Indicate when changes in treatment are required?
- Improve communication between professional and person with Parkinson's?
- Enable people with Parkinson's to take control of their condition?

Parkinson's Kineti-Graph (PKG)

A service that enhances clinical decision making



- Proprietary mathematical algorithms.
- Translate raw movement data.
- Shows Parkinson's patients' movement disorder symptoms in relation to controls (non-Parkinson's patients) and medication times.



Collected
by PKG
Data
Logger

- Uses a precision digital accelerometer to collect movement data.
- Includes a vibration based levodopa dose reminder.

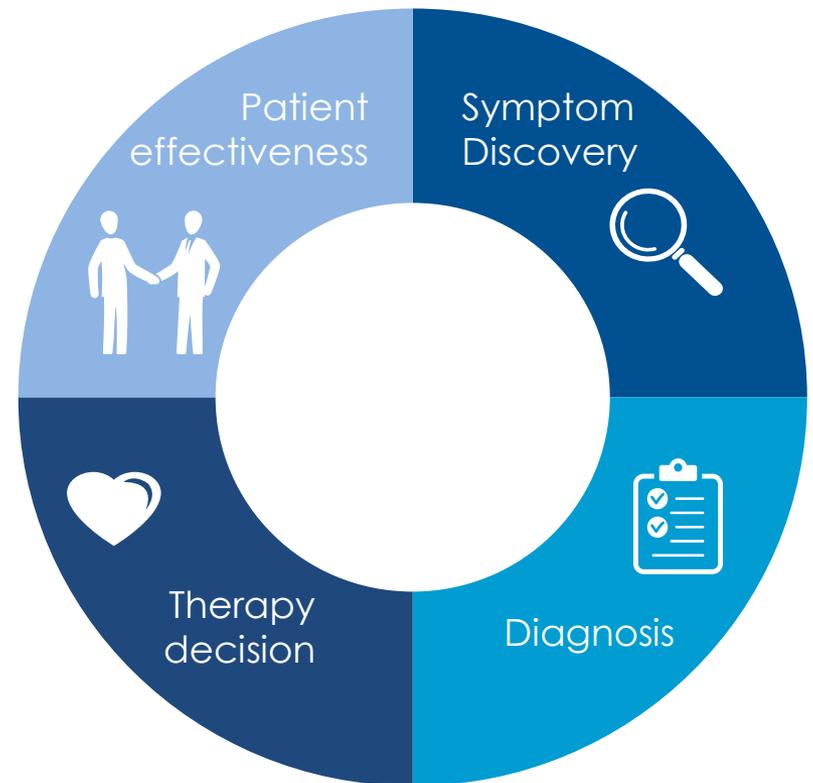
TGA Registered

CE Mark (MHRA registered)

FDA Cleared

How is the PKG being used in clinic?

- Symptom discovery
 - Unreported, dose related and unpredictable 'Off' periods bradykinesia (BK).
 - Unreported, dose related and unpredictable 'On' with dyskinesia (DK).
 - Fluctuation severity.
 - Daytime sleep.
 - Impulse control disorders.
- Therapy effectiveness Was my intervention successful?
 - Is a further intervention required?
 - Is change of oral therapy needed?
 - Is oral therapy optimised?
 - Is an advanced therapy required?
- Patient discovery
 - Record of self reported Levodopa compliance;
 - Visual record that provides a "common language" to describe symptoms.
 - Is patient's complaint Parkinson's related?



What impact would the PKG have on

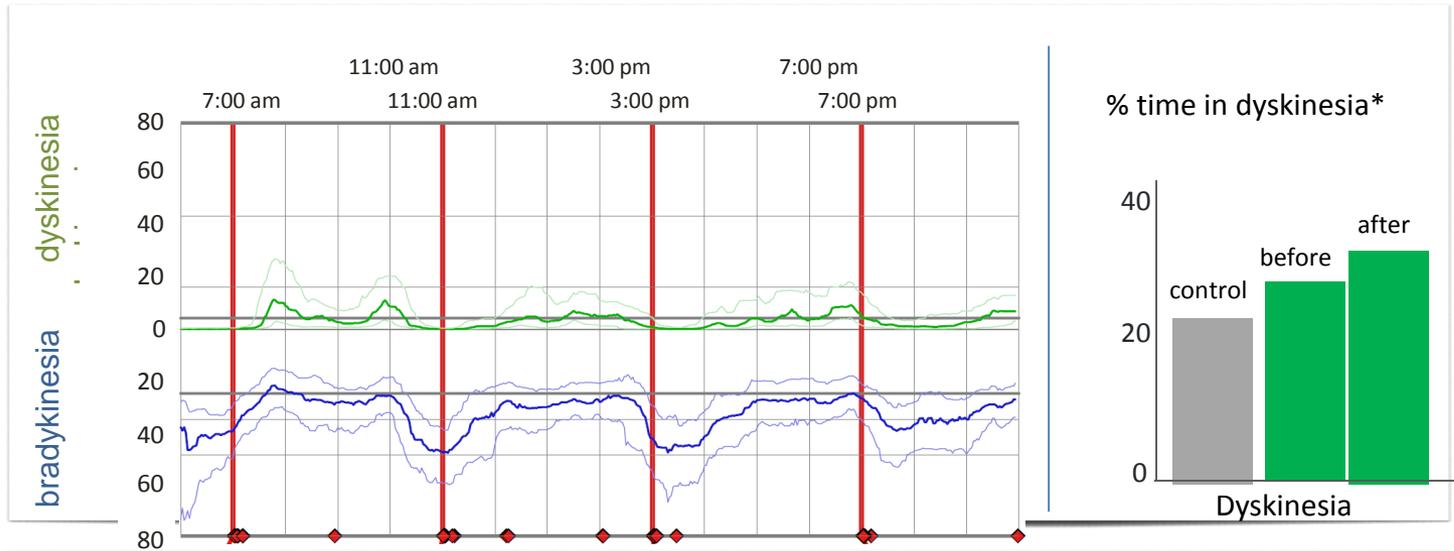
- Control of symptoms?
- Experience of people affected by Parkinson's?
- Efficiencies of service provision?

Service evaluation project

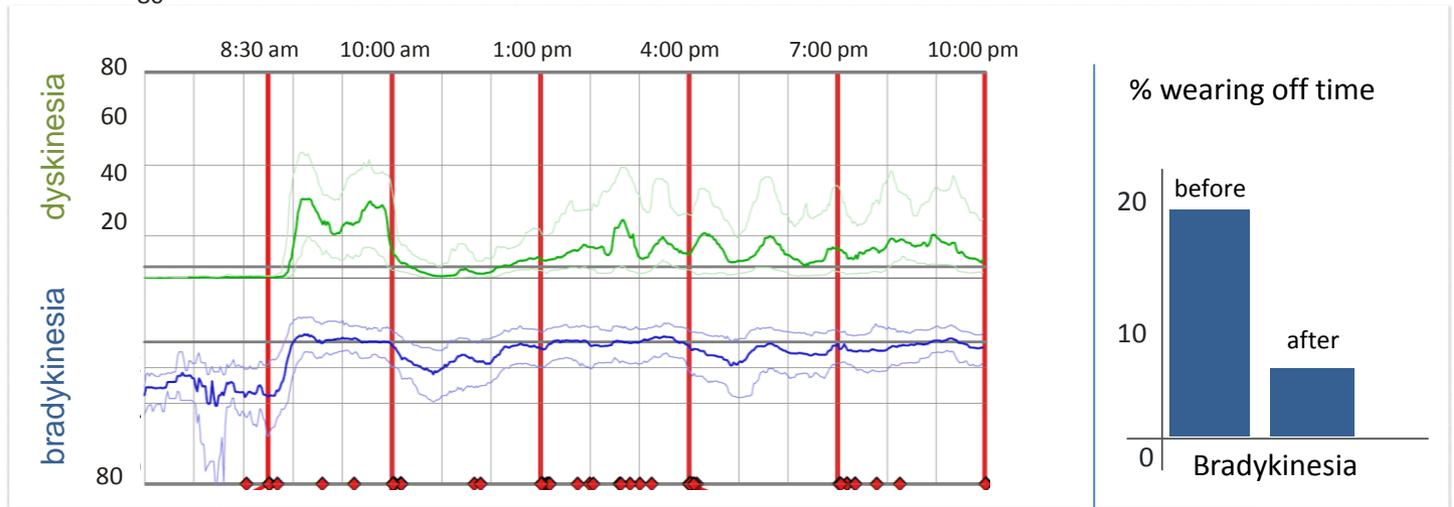
- 
- Recruitment and training of ten project services
 - Development of service evaluation template
 - Use of PKG and service evaluation template in clinical practice

What has been seen so far – control of symptoms?

BEFORE
4 doses per day



AFTER
6 doses per day
at reduced
interval



* Percentage time spent in DK Severity Level III+IV. Non-PD controls spend 25% of time at this level

What has been seen so far – experience of people affected by Parkinson's?

- Direct change to treatment attributed in part to being involved in project
- Overall the device was useful and was liked, but mainly confirmed what the wearer (and the clinician in their opinion) already knew
- Majority felt well informed and confident about using the device
- Mixed opinions about the practicality of the device but overall simple to use
- Medication reminder function was a popular feature
- Several expressed a desire to discuss their results further
- Technology needs to be kept simple to truly benefit people with Parkinson's

What has been seen so far – efficiencies of service provision?

- Technology can be used to confirm diagnosis AND accelerate or delay appointments
- Early efficiencies are being highlighted in ensuring clinicians have a full picture pre appointment
- *More details to follow with the service evaluation*

Lessons learnt so far

- Importance of stakeholder involvement
- Project management of new technology introduction is required
- Identify the champion!
 - Who is the person that really wants to drive this?
- Technology has practicalities to think about
 - Who will talk to the patient?
 - How will they identify patients for technological intervention?

What's to come?

- Continuation of data collation from service evaluations and people affected by Parkinson's (June 2016)
- Analysis of data
- Publication of best practice guidance on implementation of technology in clinical practice in Parkinson's (scheduled September 2016)

Any questions?

Suma Surendranath

Parkinson's UK

ssurendranath@parkinsons.org.uk

With thanks to:

Andrew Mumford

Global Kinetics Corporation