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Primary Care: Efficiencies from Implementing Sustainable TEC Best Practice in Primary Care with Florence

Florence Overview

Non-compliance to health care guidance has always been a significant challenge in healthcare, particularly long-term condition management. Our healthcare system was not designed to be patient-centric with a legacy of minimal emphasis on empowering patients to take responsibility for their conditions resulting in cohorts of patients who can become fairly passive and non-compliant.

Acknowledging this and, the significant impact that activating our patients can have on their own health outcomes, Flo provides an opportunity to educate and enable patients by focusing on improving their adherence to clinical guidance, and consequently clinical outcomes improve, faster.

The clinician clearly retains responsibility yet with an effective mechanism of motivating patients towards behaviour changes impacting on condition, the patient becomes an active participant adding a value that often only they can.

Florence (or Flo to her friends) was designed by looking at motivation and what motivates patients to increase their quality of care in between face-to-face contacts as part of a shared management plan. Using Flo's unique persona to her best advantage is an important component in motivating patients to take an active role.

Flo is not condition or purpose specific. Flo focuses on helping patients to help themselves and dependent upon the original local purpose of using Flo, Flo's interactions and pathways will vary as designed by clinical teams. Existing pathways and best practice are willingly shared amongst organisations using Flo via the Simple Telehealth Community of Practice.

Rationale for use of Florence

- *Reduction in avoidable non-value added face-to-face contact, healthcare usage, crisis episodes and side effects of non-compliance (e.g. attendance at GP surgery, Out of Hours, Community Nursing or A&E)*
- *Support clinician and patient adherence to agreed best practice care and shared management plans*
- *Empowering patients to take responsibility for their adherence to agreed advice, increasing engagement with their health and improving their self-care capability*
- *Supporting prioritisation of care - releasing capacity, enabling appropriate and timely care to be delivered to patients based on clinical need.*
- *Promotion of appropriate routes of access into services as clinically indicated due to patient's increased understanding of clinical indicators, appropriate routes of access and improved compliance to clinical guidance.*
- *Reduced patient anxiety with the opportunity to self-monitor reinforced by timely feedback developing an increased understanding of their condition and what it means for them*
- *Improve the patients' freedom to manage their own condition with reinforced patient education - permits increased or decreased clinical support as required..*

Florence has been recently cited in independent publications as an exemplar innovation. The King's Fund publication "Florence: telehealth for long-term conditions" highlights Flo amongst eight examples of successful innovation. The Innovation Unit and The Health Foundation came together in the "Against the Odds" research project to identify 10 UK innovations which have demonstrated "successful scaling", one of which is Florence. From these case studies, they were able to highlight eight key enablers for scalability of new innovations within the NHS.

Focus: Primary Care

It is widely acknowledged that more people are living longer, with more complex conditions, costs are increasing whilst NHS funding remains flat with a rising expectation of the quality of care received.

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In 2016, The King's Fund reported that overall contacts have increased by 15% from 2010/11 to 2014/15.

There is now a significant opportunity to integrate evidence-based technology-enabled care services into routine healthcare delivery, moving towards clinical pathways that represent safe, efficient healthcare that is popular with patients and carers alike

Clinicians in primary care have embraced Flo as a tool to deliver sustained improvement in; both clinical and efficiency outcomes. Indeed, primary care associated clinical cohorts accounted for almost half of Flo use in the first half of 2017.

"It fits within and can be adapted for existing work processes rather than requiring substantial redesign. It doesn't require staff to develop new skills or very different ways of working."

The King's Fund – "Florence: telehealth for long-term conditions"

Condition Index:

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Example Pathway: COPD and Asthma

Benefits:

1. To establish, and sustain, **better habits around inhaler use.**
2. To support appropriateness of treatment with **correct medication dosage,** and type, as applicable.
3. To actively promote and encourage **sustained behaviour change.**
4. **Reduce avoidable healthcare usage** and crisis episodes, (e.g. attendance at GP surgery, Out of Hours, Walk-in Centres or A&E) resulting from a poorly controlled asthma or COPD.
5. **Supporting recognition** of signs and symptoms of exacerbation **empowering patients to initiate rescue medication** as directed by their care plan.
6. **Educating** patients with a diagnosis of COPD and/or asthma to **improve confidence** with **self-management** of their condition.

Pat's Story
Ann Hughes, a Practice Nurse in Stoke-on-Trent, introduced Flo to her patient, Pat:
Pat has severe COPD with reduced lung function causing anxiety and impacting on her day to day life, activities and healthcare usage. In a 3 month period, Pat had attended A&E twice via 999 and had two hospital admissions despite being supported by hospital at home.

Since being introduced to Flo, Pat feels reassured and has become confident in managing and recognising her symptoms. This has allowed her to return to activities she previously enjoyed and even take up some new hobbies. Since using Flo Pat has not had any further hospital admissions or visits to A&E.

Pat comments:
"I know now, if I can't keep up revolutions on my bike there's something wrong."

Examples of further case studies
"The visits to the doctor have been halved, if not better, I don't have to go down there when I don't feel well because I know that I'm alright if I'm answering the questions that Flo is asking."
Jim McCabe, patient at Roundwood Surgery. For more see here.

"We've found at the surgery its reduced the doctors' visits by round about 75% in patients who are on Flo."
Practice Nurse Maggie Whitmore at Furlong Medical Centre. For more see here.

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Example Pathway: Hypertension

Benefits (Hypertension diagnosis / exclusion):

1. Blood pressure readings taken at home result in **less face-to-face consultation time** in practice and are taken in real time (avoidance of white-coat symptoms).
2. Improved access to real-time blood pressure readings to **improve clinical decision making.**
3. **Patient safety increased** with real-time advice including guidance of what to do if their condition worsens or support needs increasing as per their management plan.
4. Capture of data on which **decision made to diagnose/exclude.**
5. **Improved timeliness** of diagnosis or exclusion where capacity constraints for ambulatory monitoring exist, or where patients are required to have face-to-face blood pressure readings taken due to lack of alternative.
6. **Avoids inappropriate diagnosis** of hypertension (thus avoiding follow-up and medication).

Benefits (Improving control of hypertension):

1. An **alternative to patients having to attend the practice for blood pressure readings** and hypertension management.
2. Opportunity to **titrate medication remotely** based on increased real-time readings.
3. Opportunity to **intervene earlier** with medication changes or if the patient's condition worsens.
4. An opportunity to support patients understanding of **lifestyle improvements** that support controlling their hypertension.
5. An increase in **patient engagement and awareness of their blood pressure** with motivation and support in adopting a healthier lifestyle.

NHS Lanarkshire undertook a rapid improvement study aimed at understanding the efficiencies that could be gained by integrating Flo into the pathway for hypertension diagnosis. The study involved 115 patients over 90 days across 14 practices.

As an overview:

- An average of 4.4 clinical appointments per patient, with a **total saving of 416 appointments.**
- 100% of 103 clinicians asked responded that Flo acted as an **aid to their clinical decision making** as well as generating **faster clinical outcomes.**
- Patients overwhelmingly reported a positive experience; **83% of patients agreed that Flo helped a lot.**
- In January 2018, 45/105 practices in Lanarkshire were using Flo to monitor patient's blood pressure with the estimated number of **clinical contacts saved being 4,756**
- NHS Lanarkshire have recently (June 2018) reported **recruitment of over 2000 patients**, an updated summary of their outcomes is available on request.

NHS Ayrshire and Arran implemented Flo for hypertension in GP practices, using diagnosis/exclusion protocols, as well as monitoring/titration protocols:

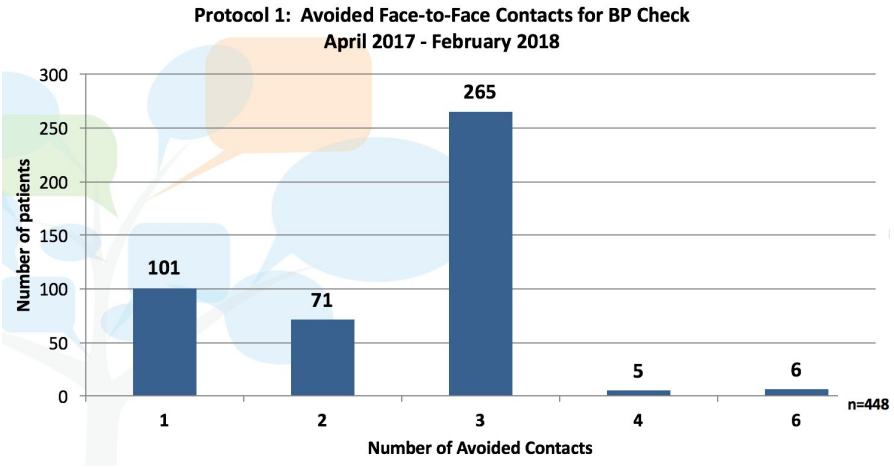
- Senior Information Analysts calculated that the **diagnosis protocol saved 110 hours of clinical time** over 448 patients (graph 1), **while the medication titration protocol saved 20 hours** over 67 patients (graph 2).
- Waiting time for ambulatory monitoring also decreased following the introduction of Flo.

Case Studies

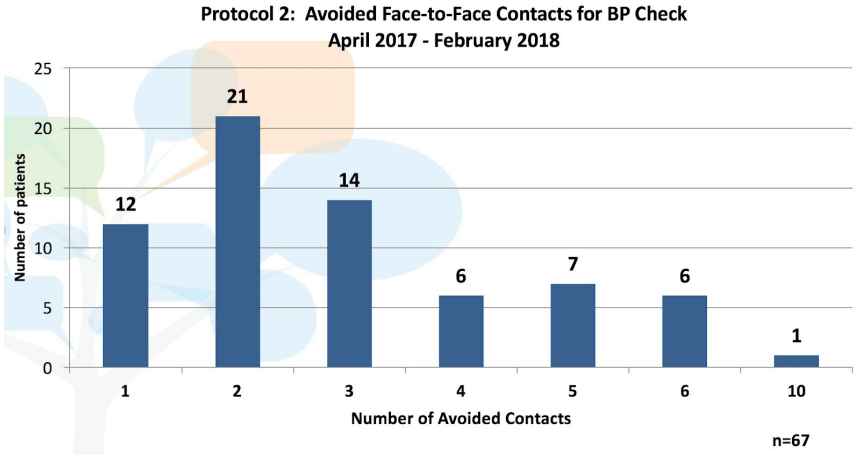
52 year old Female: Anxious Patient, reluctant to engage with Surgery. Flo reduced anxiety associated with practice visits, supported patient in reaching a diagnosis, leading to increased engagement with surgery and acceptance of advice.

68 year old Male: Full time Carer for his wife. On a 3 month waiting list for surgery. Hospital requested daily BP readings pre surgery. Flo allowed him to remain at home with his wife, avoided inconvenient appointments and provided accurate results to share with hospital.

39 year old Female: 2 weeks post natal. Irregular high readings were continuing... Suspicion of White Coat Syndrome. Flo supported patient, avoided inconvenient appointments and allowed pharmacist to monitor patient closely to alleviate concern and reduce medication safely.



Graph 1 – NHS Ayrshire & Arran - number of avoided contacts using diagnosis protocol



Graph 2 – NHS Ayrshire & Arran – number of avoided contacts using monitoring protocol

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Example Pathway: Medication Concordance

Benefits:

1. To **establish**, and **sustain, better habits** around prescribed medication.
2. To **reduce side effects** associated with **non-compliance.**
3. To actively promote and encourage **sustained behaviour change.**
4. **Reduce avoidable healthcare usage** and crisis episodes, (e.g. attendance at GP surgery, Out of Hours, Walk-in Centres or A&E).
5. **Faster and sustained** achievement of clinical outcomes through patient's improved concordance.
6. Maximises patient **familiarisation with technology** as a precursor for any requirement for step-up monitoring with Flo.
7. Help to **reduce missed appointments**, **increase capacity**, and **reduce costs associated with missed appointments**.

Castle Street Medical Centre in Derbyshire used Flo to address issues arising from incompatibility between medication regimes and their appointment scheduling systems. Patients weren't able to book at the time they presented for treatment and would often forget to call to schedule a suitable appointment to maintain their 12 weekly schedules.

The case studies below demonstrate where Flo was able to bridge the gap improving adherence to treatment, reduce missed appointments and mitigate the associated costs.

Case study one:
A gentleman on Warfarin had a **DNA rate of 50%**, having missed 6 appointments over a 12 month period. The patient was introduced to Flo by his clinician; Flo would send him reminders about his upcoming appointments. In the following year he **attended all of his appointments.**

Case study two:
A patient was prescribed **vitamin B12 injections** every 12 weeks but regularly forgot to contact the surgery to make future appointments. As a result she **only received 2 doses of vitamin B12 over the course of a year**, increasing her risk of illness. Her clinician suggested using Flo, following sign up the patient **booked and attended** all scheduled appointments **improving compliance** to treatment and **reducing** associated risks.

Case study three:
A lady with learning disabilities used **Depo Provera injections** as a form of contraception, but **missed her appointments regularly**. This not only created the need for additional appointments, but required her to take pregnancy tests at the surgery. Since using Flo, she has **attended 100% of scheduled appointments.**

Figure 3 below demonstrates the breakdown of cost savings that were made for these three patients. To read the full story, please click here.

Nurse Appointment - 10 minutes	£ 13.50

Nurse Admin time - 10 minutes	£ 13.50
Paper, envelope and printing	£ 0.15
1st Class Royal Mail postage	£ 0.63
Total admin cost	£ 14.28

Total admin Cost	£ 14.28
Pregnacy test	£ 3.99
Total cost	£ 18.27

Wasted Appoints.	11
Money Wasted - Appointments	£ 148.50
Money Wasted - Admin/Actions	£ 165.06
Money Wasted - Total	£ 313.56

Patient		Date added to Flo	Start	Finish	Scheduled appoints.	Attended appoints.	Missed appoints.	Cost of missing appoint. (£)	No. of actions (e.g. Letters sent, pregnacy Test) as a result of missed appoints.	Total Cost of additional Admin (£)	Total added cost of missed appoints. (£)
Patient 1	PB	12/03/15	Mar-14	Mar-15	12	12	6	81.00	6	85.68	166.68
			Apr-15	Nov-15	8	8	0	0.00	0	0.00	0.00
Patient 2	AJ	28/01/15	Jan-14	Jan-15	5	2	3	40.50	3	42.84	83.34
			Feb-15	Nov-15	3	3	0	0.00	0	0.00	0.00
Patient 3	SW	19/01/15	Jan-14	Jan-15	5	3	2	27.00	2	36.54	63.54
			Feb-15	Nov-15	3	3	0	0.00	0	0.00	0.00

Appointment Cost: https://www.england.nhs.uk/2014/03/05/missed-appts/

Patient 1	PB	Patient has cost the practice more than originally forecasted Clinical time, equivalent to another 6 appointments, has been used for administration
Patient 2	AJ	Waiting lists increase as appointments are lost Patients runs a higher risk of anemia complications
Patient 3	SW	Waiting lists increase as appointments are lost Patient required additional patient safety measures to continue treatment

Figure 3: cost breakdown using Flo for appointment reminders

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Further Resources:

Flo Saving Calculator:
Recently, AHSN Networks have led an independent economic evaluation around the use of Flo (hypertension) in primary care using evidence from across England; the tool "Flo Savings Calculator" has been developed and can be adapted for local use allowing CCGs to forecast confidently cost savings as a result of Flo's implementation.

Target population	2768
Cost of licence (in £)	£8,000

Costs savings to the NHS (in four years), in £. Costs of stroke/TIA and MI included (using Framingham equations)

Scenario	Cost savings due to hypertension complications avoided (per patient)	Cost of intervention (per patient)	Cost savings due to implementing Flo
Base case	£13.53	£2.89	£29,449
Optimistic scenario 1	£18.88	£2.89	£44,254
Optimistic scenario 2	£24.40	£2.89	£59,548
Pessimistic scenario 1	£7.99	£2.89	£14,108
Pessimistic scenario 2	£2.79	£2.89	-£277

For further information please contact Dr Fiona Kilpatrick, Project Manager East Midlands Academic Health Science Network who is happy to answer any questions Fiona.Kilpatrick@nottingham.ac.uk

The AHSN Network

CQC Reports:

- Roundwood Surgery, Mansfield, was **rated as Outstanding** and the report cited Flo:
  "External engagement was used to drive improvement within the practice and the practice embraced change and innovation. For example, the practice was a pilot site for FLO (telehealth) and won an award for their work in this area."
  Roundwood Surgery CQC Report, September 2015. For the full report, see here.

- Bay Medical Group (formerly Coastal Medical Group) were also **rated as Outstanding**, the report also commenting that:
  "The practice's use of the 'Florence' system demonstrated their continuous commitment to involving the patient in their care plans, encouraging them to self-manage where possible and ensuring they were fully supported."
  Coastal Medical Group CQC Report, October 2015. For the full report, see here.

Example Journal Publications

2012: BMJ Open - 2012;2:e001391 Elizabeth Cottrell, Ruth Chambers, Phil O'Connell; Using simple telehealth in primary care to reduce blood pressure: a service evaluation

2012: BMJ Open 2012;2:e001392 Elizabeth Cottrell, Kate McMillan, Ruth Chambers ; A cross-sectional survey and service evaluation of simple telehealth in primary care: what do patients think?

2014: Dove Press - 10.2147/NRR.S72791 Audrey Cund, Jayne L Birch-Jones, Martin Kay, Patricia Connolly; Self-management: keeping it simple with "Flo"

2015: BMJ Open - 2015;5:e007270 Elizabeth Cottrell, Tracey Cox, Phil O'Connell, Ruth Chambers; Patient and professional user experiences of simple telehealth for hypertension, medication reminders and smoking cessation: a service evaluation

2015: Gastrointestinal Nursing - 10.12968/gasn.2014.12.Sup1 Mark Holmes, Sian Clark; TECHNOLOGY-ENABLED CARE SERVICES: NOVEL METHOD OF MANAGING LIVER DISEASE

2015: BMC Family Practice 2015, 16:83 doi:10.1186/s12875-015-0301-2, Elizabeth Cottrell, Tracey Cox, Phil O'Connell, Ruth Chambers; Implementation of simple telehealth to manage hypertension in general practice: a service evaluation 2016: British Journal of Healthcare Management 10.12968/bjhc.2016.22.1.23 Lisa Taylor, Jane Birch-Jones; Implementing a technology enabled care service

2016: (RCNi) Primary Health Care, 2016, 26(7):24-30 http://dx.doi.org/10.7748/phc.2016.e1137 Caroline Poole, Janice Maslen, Lisa Joanne Taylor; Enabling Supported Self-Management of Wound Care in the Community Setting to Increase Quality and Efficiency of Service Delivery" Primary Health Care

2016: Journal of Nursing & Healthcare, 2016 Vol. 1 Issue 2; Parijat De , Susan Irwin, Jagjit Kaur, Karen Moore; Use of an Innovative Technology Enabled Care Services (Tecs) "Florence" To Empower Patients and Enhance Adherence to Treatments in Diabetes

2018: Cork T, Sanzeri D, Chambers R, Chambers C. Can pharmacists promote self-care using digital technology? Prescriber February 2018 http://www.prescriber.co.uk/article/can-pharmacists-promote-self-care-using-digital-technology/