An iterative co-creation approach to workforce transformation in primary care: education for integration of GPA's and ARRS into a clinical firm practice model

Julia Kowalczyk[1,2], Bruce Hoghton[1,2], Lindsey Cherry[1,3], Joseph Bagley[1,4], Phil Aubrey-Harris[1,2], Mead Mathews[1,2]

1. Southampton Central Primary Care Network

2. St Mary's Surgery

3. University of Southampton

Supported by TVW PCTH project funding: "Co-creation of an educational protocol to support a novel 'clinical firm' approach to workforce development for person-centred care"

Date: 28/03/24

Version number: 5

Executive summary

Background and rationale: The Fuller Stocktake report[1] recommends primary care provides multi-professional, personalised care to people with complex needs. There is however continued reduction in GP workforce. Within our inner-city practice, covering a highly multicultural region of socioeconomic deprivation, we have experienced significant change in GP list size; prior to 2020 list size was 1000-1500 patients per salaried GP, in 2023 this was 3300, rising to 4300 patients in 2024. There is a limit to the workload GP's and partners can safely carry and limit in ability to provide continuity of care. As such, new ways of working need to be sought. Workforce transformation has added new PCN ARRS roles[2]. The mechanism for ARRS integration and how they could contribute to the workforce challenge not dictated. Therefore, we proposed the co-creation of an educational protocol to support a novel 'clinical firm' approach to workforce development; where a GP-led multi-professional team works collaboratively to share list-holding, to identify and address unmet educational need. The **main project aim was to undertake iterative co-creation to develop and implement educational resource to support a new clinical firm model of practice.**

Methods: An iterative co-creation process was adopted to develop, pilot, refine, and implement the clinical firm model of clinical practice. An adapted Simulation Based Learning framework is applied to explain the underpinning educational approach. A qualitative approach, grounded in an inductive approach to thematic analysis, was used to explore stakeholder views about the model safety, effectiveness and educational framework.

Findings: Overall, all stages of work were completed leading to the implementation of a functioning (safe and effective) innovative model for clinical practice. Key milestones included completion of a literature review to identify underpinning evidence to support/inform creation and refinement of the clinical firm multidisciplinary team and model, educational protocol topic prioritisation, creation of an example clinical protocol (anaemia), and evaluation of process and learning.

The key findings are summarised as follows:

1. The clinical firm model is well received, safe and clinically effective
2. the clinical firm model creates opportunity for continuity of care, for people with complex health and social care needs, in the context of an increasing GP list size
3. The relationship between a GPA and GP are critical the success of the model
4. GPA education is needed and welcomed, but should not be constrained to a single mode of delivery or time restricted
5. the philosophical framework, underlying educational approach, and processes for implementation can be taught and shared with other practices for adoption at scale; however, continued tailoring to place and people is needed

Impact: The valued learning and personal experience shared through written reflection of a GPA provided valuable insight into how to continue supporting new GPA roles within the firm model. The process of written reflection was an educational and developmental activity of value. Overall, the model has enabled continued delivery of safe and high-quality clinical care against a backdrop of increasing GP list size of over 3500 patients per GP.

Future recommendations: There is a clear need for future research concerning the clinical and cost-effectiveness of the clinical firm model of practice. Evaluation of the longer-term impact of this model, to offset the inverse care law, and redress issues relating to workforce capacity, staff burnout, and ability to continue delivery high quality clinical care to our populations is needed.

1. Background & project rationale

The Fuller Stocktake report[1] recommends primary care provides multi-professional, personalised care to people with complex needs. Emphasised in the recently revised operational priorities for NHS England[3] is the importance of reducing health inequalities and addressing wider health determinants, as part of the NHS Long Term plan[4]. There is however continued relative reduction in English GP workforce and evidence of a complex relationship between safe staff levels, patient safety[5] and patient experience[6]. There is also continued evidence of the inverse care law, with ongoing difficulty recruiting GPs in areas of socioeconomic deprivation and high unmet clinical need[7].

Additional to the overall application of the inverse care law, is the requirement for continuity of care. This meaning that those people living with complex, often intersecting, health and social care needs carry high treatment burden and benefit from developing meaningful, continued relationships with their care team. Whilst there is evidence that locum GP performance is equitable to that of permanent staff[8], this effect is only evidenced across general populations[9]. However, the ability to provide continuity of care is contingent on safe staffing levels.

Within our inner-city practice, covering a highly multicultural region of socioeconomic deprivation, we have experienced significant change in the size of list held by each GP; prior to 2020 there was low locum use and relatively small list size of 100-1500 patient per salaried GP compared in 2023 with 3300, rising to 4300 in 2024. The change is in large part due to one partner and several salaried GPs leaving practice due to work-based burnout and low ability to train, recruit or retain new staff. There is a limit to the workload which existing salaried GP's and partners can safely carry and complete destabilization of traditional methods for maintaining continuity of care. As such, new ways of safe working needed to be urgently sought and implemented.

Workforce transformation has added new roles, in the form of Primary Care Network (PCN) additional role reimbursement scheme (ARRS) staff, intended to support general practice by recruiting 26,000 staff by 2024, improving access and easing workload[2]. The mechanism for ARRS staff integration and how new roles could contribute to the challenge outlined above was not dictated. Our PCN from the offset focused on a direct employment and supervision model, rather than subcontracting of ARRS via other providers. However, our experience consistent with that of others[10], was that whilst adding value the ARRS teams still felt like separate entities to the GP staff and continuity of care was not easy. Therefore, **we proposed the co-creation of an educational protocol to support a novel 'clinical firm' approach to workforce development**; where a GP-led multi-professional team works collaboratively to share list-holding, to identify and address unmet educational need for the purpose of improved continuity and safety of care.

To sustain the new model of practice, high levels of clinical supervision are warranted. Currently the learning needs are unclear and protocols to support educational development and clinical practice are required. Once identified, sustainable protocols for learning and supervision could be embedded and adopted at scale. Multi-professional supervision and collaborative development of a common learning environment is essential to achieving safe and sustainable development of primary care workforce. The **main aim of the project was to undertake iterative co-creation to develop and implement educational resource to support a new clinical firm model of practice.**

2. Application of the 'clinical firm' concept to primary care

2.1 Gap analysis & solution finding (500w, overview of contextual challenges, approaches considered/ taken to solution finding inc. who was involved in decision-making, and collaborative approach to next steps)

St Marys serves some of the most diverse communities in South England. Approximately 40% of our patients do not speak English as a first language and 20% require a translator. We serve a highly deprived neighbourhood; the Golden Grove Estate opposite our surgery is 388th most deprived LSOA nationally (of 32844). Local and national population health data shows higher levels of disease, lower life expectancy and overall levels of health inequality. Cumulatively, this could result in a high number of patients requiring complex health and social care support, simultaneously creating increased clinical supervisor demand and learning opportunity.

The initial proposal for the clinical firm was for an MDT, led by a one GP, to manage a patient list of approximately 4000. The MDT may consist of:

- GP (adopted)
- Care coordinator (role evolved to GPA)
- Mental health nurse (not adopted as not enough of them)
- Pharmacist (adopted)
- Advanced Nurse practitioner (not adopted)

The conceptual model was that the clinical firm would collectively share responsibility for continuity of care, meeting patient needs yet preserving GP contribution for where it is most applicable. Over time, we expected that patients will become familiar with their team and, as with GP interactions, a level of trust develops.

The care coordinator role was pivotal to evolution of the clinical firm concept, transitioning into a General Practitioner Assistant role, working in a similar way as a PA supporting a company executive. There was no expectation that a GPA would have pre-requisite clinical training but would have good organisation and communication skill.

3. Workforce transformation

3.1 Methods & data

We undertook an iterative approach to development and implementation of the clinical firm. Initially working with one, then two partners, a clinical firm workforce model was established around them. We used established administrative and secretarial workflow to complement the model, e.g., all workflow/ reports go to administrators before GPs and only those needing a clinician get passed to a GPA. The aim was for the GPA to work on what sat with GPs and be able to move work to other firm members, departments and directly speak to patients if/when needed to aid information gathering or sharing. Alongside this we planned to develop additional clinical pathways/protocols to improve the efficiency of how pathology actions and conditions were managed. The aim was for the GPA to help direct patients along the pre-agreed care pathways.

2.2 Iterative refinement of the conceptual model

The clinical firm GP created a list of jobs whilst undertaking their routine practice/ paperwork, trying to identify activities that could be done by someone else (see appendix one). A possible workflow model was then created, as shown in figure one.

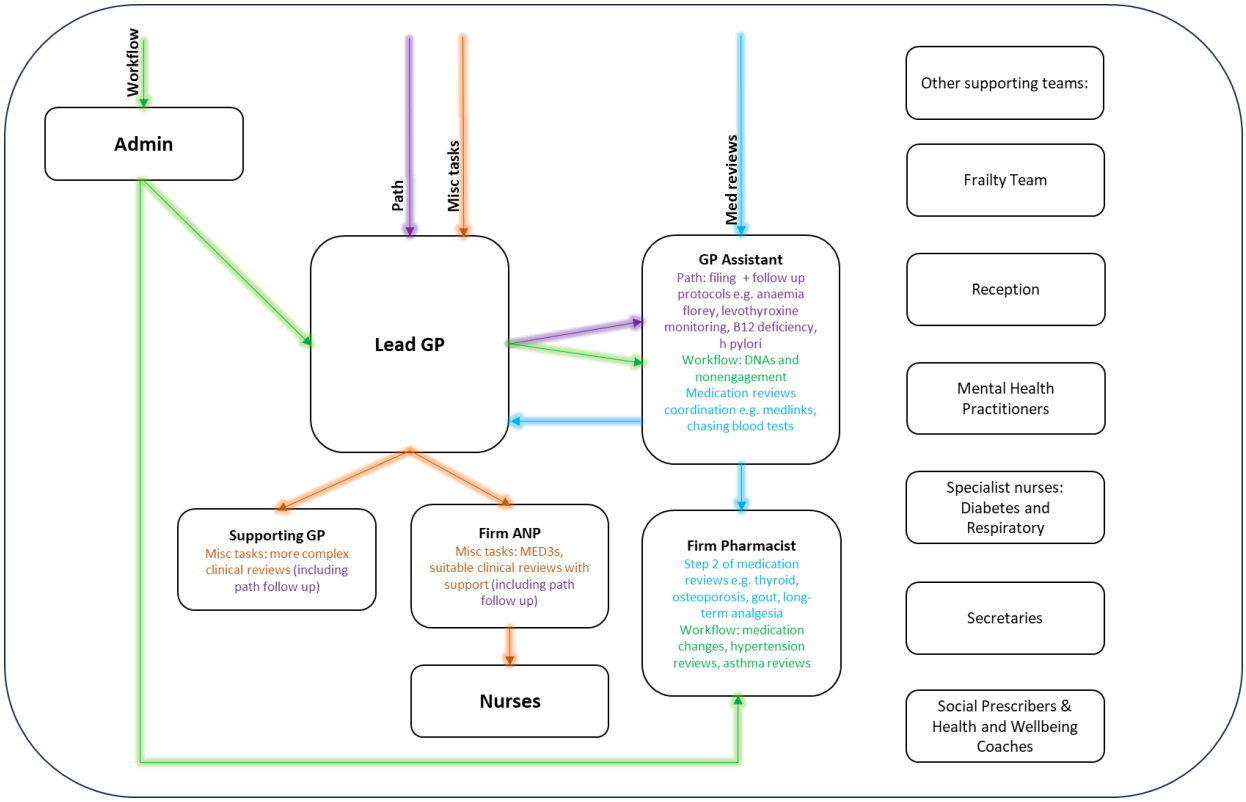


Figure one: clinical firm workflow model

Pharmacy hours were then transferred into clinical firm time. This included two pharmacist clinics per week, bookable by the GPAs. Guidance and in-house training were created/delivered for other GP partners about what was appropriate use of the pharmacist clinical firm role and time.

The inclusion of Advanced Nurse Practitioners within the clinical firm model was trialled but not adopted. The team agreed that the ANP skill set was better utilised elsewhere within the PCN and therefore this role was continued within the model. Work relating to sick notes was reallocated to nursing staff.

In an iterative development of the model, the GPAs took over pathology related administration and the complexity of what was asked of them within the role extended, although stayed within the agreed framework for safe practice. A GPA job description was developed and used to support recruitment into new GPA posts (see attachment one). Pre-set text templates for safe and efficient patient communication were developed and agreed (see appendix two).

The list of clinical protocols that may need creating was agreed, and a modified Delphi-process for consensus ranking of protocols to be created was completed (see appendix three). Additional resources were collated to support the developed protocols. An example protocol is shown in appendix four. Regular clinical firm meetings were established to aid communication and opportunity for discussion, problem-solving, or education.

4. Educational innovation

4.1 Iterative co-creation method

There are no conceptual frameworks to guide the design of applied GPA education in the context of primary care. Therefore, the proposed model was based upon an iterative co-design process, synthesizing learning and simulation or rehearsed scenario theory (informed by the conceptual framework for simulated clinical placement) and perspectives of the GPA's, wider clinical firm members and GP partners.

Simulation Based Learning (SBL) is used to act as a transition from academic learning to clinical practice[11]. SBL is typically high fidelity, complex scenario recreation. However, the SBL model requires *a priori* definition of learner outcomes, a controlled simulated narrative, with pre-defined end points against which the students learning progression can be evaluated[12]. The Simulation Model for Improving Learner and Health Outcomes (SMILHO) includes three concepts: 1. Learner event, 2. Activity engagement, 3. De-briefing[13]. In an adapted application to the clinical firm model, the GPA (considered the student) was required to 1. Regularly reflect upon and consider their learning outcomes throughout the iterative clinical firm pilot, relative to their preferred learning style, 2. Participate in the iterative development and conduct of the clinical firm, 3. Complete regular participation in de-brief and reflection (see appendix five for an example GPA reflective blog). Previous researchers have demonstrated the value of adapting this model for novel scenario's[14], and in this instance, the adapted SBL theory enabled application of an educational framework that could be reflexive to the potentially changing needs of the student, scenario, or most appropriate learning mode.

Regular training sessions were established for the GPA team facilitated and led by a GP. The meeting frequency iteratively varied but approximately happen at a fortnightly or monthly frequency. The sessions included two parts; 1. open question and answer, 2. more formalised training about a clinical protocol or topic.

Supplementing the GPA sessions, regular ad-hoc discussion between the GPA and their GP was encouraged. Short interactions to facilitate problem-based learning led to quick upskilling and minimal significant diary disruption for the GP (e.g., avoiding the need to block large amounts of time for GAP education). The model of problem-based real-time learning was well received by both the GP and GPA. The learning approach also enabled quick feedback from the GPA to the GP about task assignment which was later felt to be inappropriate. For example, the GPAs were asked to follow-up people with depression and a recorded non-response to contact, however this resulted in the GPA reporting challenging discussions with patient and ultimately this task was retained as a GP action.

Following completion of the clinical firm pilot, resources were developed by the lead GP to support education of others in the knowledge, skill and behaviours needed to adopt the model within their practice/ at scale (see appendix six for the education session plan, appendix seven for the education supporting Power Point).

4.2 Findings: learner and supervisor experience of creating an educational culture

A qualitive evaluation of process and outcome was completed. Semi-structured interview guides were used to explore the views of three people involved in the creation, delivery or educational support of the clinical firm model. Included participants represent GP and GPA professional backgrounds. The data were thematically analysed, using an inductive framework approach, to generate new understanding about the educational value, impact and limitations of the clinical firm model.

Overall, all participants reported that they enjoyed working with the model, felt supported, safe and effective in their role. All participants advocated for the uptake of the clinical firm model, citing this as meeting both their needs and those of the patient population.

The ability to mix educational approach was seen as critical to the success of the model, e.g., use of written protocols, facilitated learning touch points, and 'open door' or 'ad-hoc' access to education. There was also agreement across participants about the iterative and adaptive learning journey that had been undertaken, with frequent reference to the tailoring of activities and education to the bespoke needs of the people involved.

There was some divergence between participants when considering the later possible development of training content for new GPA's entering the clinical firm model. Whilst some participants noted the need for common training (e.g., concerning operational processes, how to interpret and follow protocols, administration and communication skills training), there was also concern that training needed to remain bespoke to those involved, iterative and progressive, and not seen as something that could be learnt via completion of a single day's training or course.

There was an underlying theme of both partners (GP and GPA) sharing the decision making about educational need and this being used to inform wider learning activities. The developing relationship and trust between the GP and GPA were also frequently cited as important to the safe and effective partnership. The opportunity to explore limits of understanding and renegotiate role boundaries based upon the perspective of either partner involved was valued.

The iterative revision of the model was referenced in some way by all participants. The 'testing out' of roles within the model was noted (e.g., *"we tried ANP, it just wasn't the right fit"),* as was exploring of role boundaries (e.g., "*the GPAs were really excellent at completing the med reviews, but there were just too many of them, so they couldn't keep up… it didn't seem like a good use of their time in the end… there's a balance*" and "*in the beginning they [the GPAs] weren't full, but now they are so we are already having to think again about what tasks they do*").

There remain several unknown boundaries to practice for all roles within the clinical model. Areas of uncertainty relate to appropriate tasking (e.g., *"how much should GPA's keep attempting to contact non-responders… this is saturating them"*), boundaries of role scope, and how to build or maintain trust and confidence in and between firm workers. Having enough workforce capacity, despite not being problematic to start with, has reemerged as an ongoing threat to model (e.g., "not cracked… having enough pharmacist hours"). Finally, adoption of the model works, if all practice members follow the workflow model, the new approach can be undermined if this is not adopted and competing/ overlapping workflow systems are in use (e.g., *"[everyone] needs to use the task boxes [appropriately] and not revert to tasking GPs directly"*).

4.3 Service evaluation of GPA activity

To supplement our understanding of the current use of the GPA role and identify potential unmet training need, an in-service evaluation of activity was undertaken. Two GPAs logged their activity (where possible) over a one-week period. A summary of activities is shown in table one. Overall, the GPAs completed an average of 67 tasks from one of the categories shown in table one, which took an average of 4.7 hours per day.

Table one: 'Snapshot' record of daily GPA activity

Area	Task	Average Number per day	Ave Time per day (mins)
Pathology	Complex pathology follow-up – e.g., Anaemia protocol	3.4	30.21
	Phoning the lab for add on results	0.4	1.20
	coding TTG results	0.2	0.20
	Archiving path	24.7	85.50
Secondary care liaison	Chasing clinic letters / results / Discharge summaries	1.3	7.02
	Bouncing inappropriate requests back to secondary care	0.0	0.00
	Completion of referral forms	0.2	1.30
Engagement	Ensuring patients not lost to follow up – e.g. by scheduled task	12.6	31.25
	Non-engagement / DNA	3.8	22.91
	Reviewing how patients are getting on	3.0	19.14
	Welfare checks	0.4	1.80
	Booking appts/ calls	3.0	17.40
QOF	Housebound QOF	0.1	3.00
	Med / Annual reviews	9.8	46.01
	QOF chasing	0.9	3.38
	QOF coding	0.4	1.30
Notes	Antenatal note check	0.0	0.00
	Coroners' reports	0.1	0.00
Diary	Diary management	0.3	4.50
	Systemone slot management	1.4	6.89
Communication	Texts on behalf of GP	1.0	0.00

5. Key findings and next steps

5.1 Key findings

The key findings are summarised as follows:

6. The clinical firm model is well received, safe and clinically effective
7. the clinical firm model creates opportunity for continuity of care, for people with complex health and social care needs, in the context of an increasing GP list size
8. The relationship between a GPA and GP are critical the success of the model
9. GPA education is needed and welcomed, but should not be constrained to a single mode of delivery or time restricted
10. the philosophical framework, underlying educational approach, and processes for implementation can be taught and shared with other practices for adoption at scale; however, continued tailoring to place and people is needed

5.2 Next steps

We are in the process of merging with another surgery and will launch the clinical firm model there. The new surgery does not have many of the processes we already had before we introduced the model e.g., administrative help with pathology. We have therefore developed a training package/ approach to support implementation of the clinical firm model, including:

- GPAs being included in pathology workflow,
- New GPAs shadowing existing GPAs
- GP training (see appendix six)

There is a clear need for future research concerning the clinical and cost-effectiveness of the clinical firm model of practice. Evaluation of the longer-term impact of this model, to offset the inverse care law, and redress issues relating to workforce capacity, staff burnout, and ability to continue delivery high quality clinical care to our populations is needed.

6. References

1. NHS England, *Next steps for integrating primary care: Fuller stocktake report*, D.f.H.a.S. Care, Editor. 2022.
2. Bramwell, D., et al., *Implementing the Additional Roles Reimbursement Scheme in 7 English PCNs: a qualitative study.* Br J Gen Pract, 2023.
3. NHS England, *2023/24 priorities and operational planning guidance.* NHS England, 2023.
4. NHS England, *The NHS Long Term Plan*, D.f.H.a.S. Care, Editor. 2019.
5. Zigmond, D., *The expansion of physician associates in primary care risks alienating an already ailing GP workforce.* Bmj, 2024. **384**: p. q325.
6. Salant, N., et al., *Does workforce explain the relationship between funding and patient experience? A mediation analysis of primary care data in England.* BMJ Open, 2024. **14**(2): p. e072498.
7. Armstrong, M.J., J.M. Wildman, and S. Sowden, *Addressing the inverse care law: how can we increase GP recruitment in areas of socioeconomic deprivation? A qualitative study of GP trainee views and experiences in the UK.* BJGP Open, 2023.
8. Grigoroglou, C., et al., *Comparing the clinical practice and prescribing safety of locum and permanent doctors: observational study of primary care consultations in England.* BMC Med, 2024. **22**(1): p. 126.
9. Lindemann, C.H., et al., *Personalized, interdisciplinary patient pathway for cross-sector care of multimorbid patients (eliPfad trial): study protocol for a randomized controlled trial.* Trials, 2024. **25**(1): p. 177.
10. Hutchinson, J., et al., *How new clinical roles in primary care impact on equitable distribution of workforce: a retrospective study.* Br J Gen Pract, 2023. **73**(734): p. e659-e666.
11. Ben Ahmed, H. and C. Dziri, *History of medical simulation.* Tunis Med, 2020. **98**(12): p. 892-894.
12. Tuttle, N. and S.A. Horan, *The effect of replacing 1 week of content teaching with an intensive simulation-based learning activity on physiotherapy student clinical placement performance.* Adv Simul (Lond), 2019. **4**(Suppl 1): p. 14.
13. Aebersold, M. and M.G. Titler, *A simulation model for improving learner and health outcomes.* Nurs Clin North Am, 2014. **49**(3): p. 431-9.
14. Chu, E.M.Y., et al., *Placement replacement: A conceptual framework for designing simulated clinical placement in occupational therapy.* Nurs Health Sci, 2019. **21**(1): p. 4-13.

Appendix list

1. Example of job mapping to inform GPA activity
2. Pre-set text templates
3. Ranked list of potential clinical protocols
4. Anaemia protocol
5. GPA reflective blog
6. Clinical firm education PowerPoint slide deck (attachment)

Appendix 1: Example of job mapping to inform clinical firm/ GPA activity

Path work we don't have process for	**Role/activity comment**
Liver	Bloods, once elf back elf letter / scan ref – care coordinator, GPA
Anaemia	First bloods – B12, folate, ferritin Needs question series to inform
B12 injections	Needs formalising
Positive swabs e.g., BV/thrush	Prescription and text – preset exists but Dr does prescription currently – other prescribing role?
Workflow related	**Role**
Medication changes	Pharmacist
Safeguarding meetings	Does this need to be GP?
Speciality asking us to review a condition they can't deal with, e.g., analgesia / headaches	Depends upon condition; could be pharmacist, ANP, GP

Task type	**Role**
Medication review	Sometimes this involves sending medlinks; Pharmacist? GPA if trained as first step?
Acute prescription request	Pharmacist
Scheduled reviews, e.g., follow-up after GP has completed in-depth review, treatment planning, and initiated care	ANP, pharmacist,
Non-engagement	Care co-ordinator, GPA
Sick notes	Nurse
Reception as you to call/ see a patient	Should be appointment but… Frailty specialist team? Mental health team? ANP?
Admin written document checking	?

Appendix 2: Pre-set text templates

Topic	Instruction	ACCURX message - As of June 2023	AccuRx Template Name	Comments / Actions by Admin
1 Blood test	blds for primary care liver screen	The Doctor would like you to have a fasting blood test, so nothing to eat or drink except plenty of water for 12 hours before your appointment. This can be done at Southampton General Hospital. You can make an appointment by visiting:https://patientbooking.uhs.nhs.ukor by phoning the appointment line on 02381204877 between Monday - Friday 8am-6pm. Alternatively, you can contact the surgery on 02380333778 for this blood test.	**Blood Test - Liver Screen**	We don't chase these with the patients. We will put the request on ICE.
1 Blood test	bloods as per hospital request	We have received a letter from the hospital and the doctor would like you to have a blood test. This can be done at Southampton General Hospital. You can make an appointment by visiting:https://patientbooking.uhs.nhs.ukor by phoning the appointment line on 02381204877 between Monday - Friday 8am-6pm. Alternatively, you can contact the surgery on 02380333778 for this blood test.	**Blood test - Hospital Request**	
1 Blood test	check fasting lipids	The Doctor would like you to have a fasting blood test, so nothing to eat or drink except plenty of water for 12 hours before your appointment. This can be done at Southampton General Hospital. You can make an appointment by visiting:https://patientbooking.uhs.nhs.ukor by phoning the appointment line on 02381204877 between Monday - Friday 8am-6pm. Alternatively, you can contact the surgery on 02380333778 for this blood test.	**Blood Test - Fasting**	We will request on ICE.
1 Blood test	Repeat blds in ? Weeks	The doctor would like you to have a repeat blood test. This can be done at Southampton General Hospital. You can make an appointment by visiting:https://patientbooking.uhs.nhs.ukor by phoning the appointment line on 02381204877 between Monday - Friday 8am-6pm. Alternatively, you can contact the surgery on 02380333778 for this blood test.	**Blood Test - Repeat Test**	**Admin will put on ICE, please let us know what needs repeating & when eg 2 weeks etc we can either send the hospital one or surgery one, we usually use our common sense. Consider scheduled text** We don't chase these with the patients. We will put the request on ICE. Admin will add how many weeks into message
1 Blood test	repeat blds inadequate test	The doctor would like you to have a repeat blood test. This can be done at Southampton General Hospital. You can make an appointment by visiting:https://patientbooking.uhs.nhs.ukor by phoning the appointment line on 02381204877 between Monday - Friday 8am-6pm. Alternatively, you can contact the surgery on 02380333778 for this blood test.	**Blood Test - Repeat Test**	We don't chase these with the patients. We will put the request on ICE.
1 Blood test	borderline potassium-just out of range - adviec and rpt in xxxxxx days	Your recent blood test showed a low potassium level. This is common and should not be a cause for alarm. Please find below a link regarding this. You will need a repeat test in 2 weeks' time. This can be done at Southampton General Hospital. You can make an appointment by visiting:https://patientbooking.uhs.nhs.ukor by phoning the appointment line on 02381204877 between Monday - Friday 8am-6pm, or you can contact the surgery on 02380333778.	**Low Potassium Result**	Letter to attach to AccuRX message - Need to arrange rpt Renal function test in time frame given

ACR	please arrange lab ACR	Your recent urine sample that you tested needs to be repeated. Please provide a mid stream urine specimen (a first thing in the morning specimen is best) and bring it down to the surgery by 3.30pm on the same day between Monday and Friday. We will leave a bottle, form and label at St. Mary's Surgery.	**Healthy.io Repeat Urine ACR Test**	we will leave everything at reception for pt to collect and check if collected within 2 weeks
Action taken	I have spoken to patient	No text	**No text**	No action needed
Anaemia	Anaemia please ask pt to collect script for iron - I have excluded serious causes of anaemia	Your recent blood test shows that you have become anaemic, which is very common and not serious. It would help you to start taking iron tablets and the doctor has sent a prescription to your nominated pharmacy. Please let us know if you think you may be allergic to this medicine.	**Iron Deficiency**	
B12	Low vit B12 - I have initiated B12 loading dose and task to reception - please check	Your recent blood test showed a slightly low vitamin B12 level. This is a vitamin found in meat, dairy products, fish and some fortified cereals. You will be invited in for an appointment to discuss this with our nurse as you may need some treatment. More information on this link: https://www.nhs.uk/conditions/vitamin-b12-or-folate-deficiency-anaemia/	**Vitamin B12 deficiency - new**	GP to use the B12 deficiency template GP review page and press the loading dose button. Please check the script has been set up, and the appointment task sent.
Blood test	collect script EPS	Your recent test result has come back suggesting you need treatment. I have sent a prescription to your normal pharmacy for you to collect.	**Test result needs treatment EPS**	
Bloods	Please phone the lab and request that the following tests are added to the bloods done in the last 24 hours (sometimes 48)	No text		Phone the lab as requested
Bowel screening	bowel screening no response please send reminder	We have been notified that you did not complete your bowel screening. To complete your screening, please contact the service on 08007076060 to request a new testing kit. For further information, please go to:https://www.nhs.uk/conditions/bowel-cancer-screening/. If you have any concerns about bowel screening, please contact your GP to discuss this further.	**Bowel Screening DNA Message**	
Braest screening DNA	Breast sceening DNA	We have received a letter to day you did not complete your breast screening. To complete your screening, please contact the service on 02381204959. For further information regarding screening please use the website: https://bit.ly/3oAJHK3	**Breast Screening DNA Message**	DNA breast screening code added & text sent
Chest XR	Chest XR needed	The doctor would like you to have a chest x-ray taken. Please go to the Radiology Department at the Royal South Hants Hospital between 9am and 4pm Monday-Friday. This is a walk-in service, so you do not need to book an appointment or bring a form.	**Chest X-Rat at Hospital - Walk-In Service**	
Childrens Phlebotom	Blood test needed - child	..... needs to have a blood test taken. This needs to be done at the Butterfly Clinic at the Southampton General Hospital. Please contact the Butterfly Clinic on 02381202024 between 8.30am and 4.30pm Monday to Friday to arrange an appointment. The clinic will have access to the request.	**Butterfly Clinic Blood Test at Hospital**	to invite children

cholesterol	bordeline cholesterol	Your cholesterol result is slightly raised. It is not currently high enough to need treatment, but you should look at weight reduction and diet. Advice on this can be found at:https://patient.info/health/high-cholesterol	**Cholesterol Advice**	
diabetes	has appointment with diabetic nurse	No text		Archive
diabetes	IGGT- text , add to register	Your blood test shows that the sugar levels in your blood are slightly high. This is called 'pre-diabetes' but you DO NOT HAVE diabetes. You are at high risk of developing Type 2 Diabetes in the future. You will need a blood test in 12 months. Please find below a link to a letter regarding this:	**Pre-Diabetes Protocol**	We code as pre-diabetic then Lyndsey picks up in 12 months. Letter to patient attached to accurx with diet advice. *Might be helpful to review this letter*
diabetes	Not at target please discuss medication changes at diabetic review (patient will be contacted by diabetic team)	No text		we will task the diabetic nurse team for review
h pylori	please complete h pylori template	The results of your test shows that you have a mild stomach infection that can cause excess acid. The doctor has sent a prescription to your nominated pharmacy and additional information can be found in the link below:	**H. Pylori Positive Protocol**	Admin complete template, including medication & letter explaining. Script then sits in GP to sign box. Admin let pt know when script is signed & ready to collect.
hospital script	hospital requested script ~~TH/SM/~~ EPS	We have received a letter from the hospital where you attended. The Doctor you saw suggested starting a new medication. A prescription has been sent to your nominated pharmacy. If you have any questions or think you may be allergic to it, please contact the surgery before starting to take them.	**Prescription Ready (Hospital Letters)**	
hospital tests	ordered by hospital please forward results for their attention - if concerned / high risk results - otherwise SGH will view routinely.	No text		Admin to arrange for results to be sent back to requesting hosp doctor - liaise with Secs

Infection	Grp b strep information	Your recent swab shows that you are a carrier of Group B Streptococcus. This is a completely benign condition and does not require any treatment. For further information visithttps://www.rcog.org.uk/globalassets/documents/patients/patient-information-leaflets/pregnancy/pi-gbs-pregnancy-newborn.pdf	**Swab Result - Strep B**	
Inpatient	Currently an INPATIENT - for tests we have ordered only.	No text		If this is a test we have ordered - please arrange for it to be sent to the hosp.
Liver pathway	Liver pathway - Please complete the following on the liver pathway: xxxxxxx	No text		Complete liver pathway sections as requested. Eg code as Fibrosis, set up ELF in 3 yrs, etc.
NHS Health check results	done as part of NHS health check - NS will follow up	No text		Archive
Pregnancy	Folic acid script needed	It is recommended that you take Folic Acid in your pregnancy. A prescription will be sent to your nominated pharmacy in 3-4 working days' time. If you have any questions or think that you maybe allergic to the medication, then please contact the surgery.	**Folic Acid for Pregnancy**	
Tests	FIT test - please repeat	Your recent stool test needs to be repeated. Please provide another stool sample and bring it down to the surgery by 3.30pm on the same day between Monday and Friday. We will leave a blue-topped bottle, form and label at St. Mary's Surgery for you to collect. Please ensure you attach the label to the sample.	**Repeat Stool Test**	we will leave everything at reception for pt and check in 2 weeks if it has been collected, we will chase if not collected.
Tests	Sputum repeat test	Your recent sputum test needs to be repeated. Please provide another sputum sample and bring it down to the surgery by 3.30pm on the same day between Monday and Friday. We will leave a bottle, form and label at St. Mary's Surgery for you to collect. Please ensure you attach the label to the sample.	**Repeat Sputum Test**	we will leave everything at reception for pt and check in 2 weeks if it has been collected, we will chase if not collected. We also have rpt swab/urine/stool etc
urine	uncertain urine result text	Your recent urine test needs to be repeated. Please provide another mid stream urine sample (a first thing in the morning sample is best) and bring it down to the surgery by 3.30pm on the same day between Monday and Friday. We will leave a bottle, form and label at St. Mary's Surgery for you to collect. Please ensure you attach the label to the sample.	**Repeat Urine Test**	Admin will put on ICE, please be clear which test. We will print form & label & leave at reception. Admin will check in 2 weeks if its been collected, if not we will remin them. After this we will not chase further.

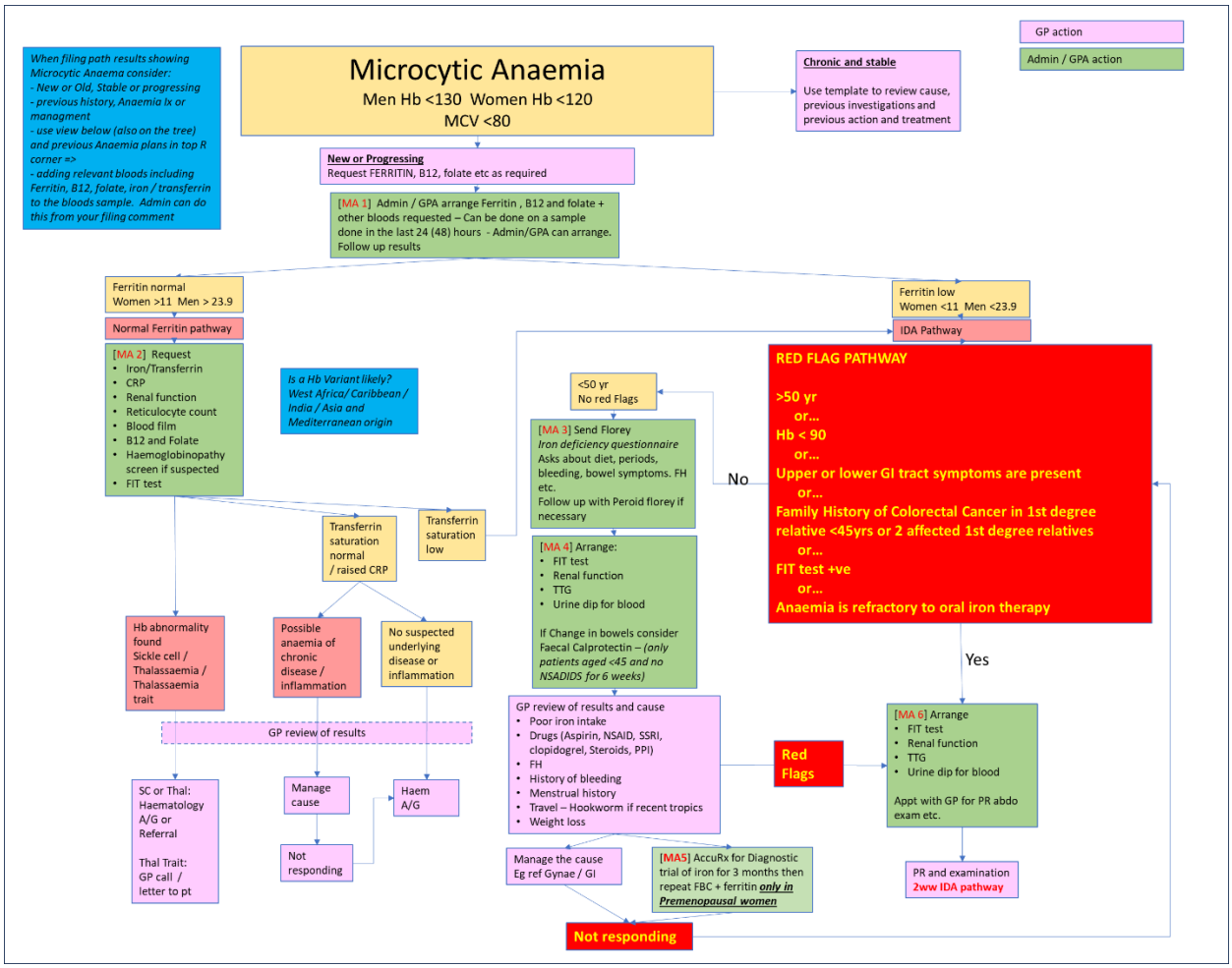
urine	urine infection on appropriate antibiotic	Your recent urine sample has shown an infection. The lab have confirmed that you are on the correct antibiotic to treat this. Please drink lots of clear fluids. If you are not improving or you develop blood in the urine or a very high fever and back pain please contact the surgery on 02380333778.	**Urine Result - Correct Treatment**	
urine	uti script EPS	Your recent urine sample has shown an infection. The doctor has sent a prescription to your nominated pharmacy. Please drink lots of clear fluids. If you are not improving or you develop blood in the urine or a very high fever and back pain please contact the surgery on 02380333778.	**Urine Result - New Treatment**	Let us know if you have already sent the text or if you want us to.
vit d	borderline vit d OTC supplement	Your Vitamin D level is slightly low. It is advisable to buy some low dose Vitamin D supplements from a pharmacy of your choice. Advice about Vitamin D deficiency can be found at:https://patient.info/health/osteoporosis-leaflet/vitamin-d-deficiency	**Vitamin D OTC Treatment**	
vit d	low vit d daily tx please complete template	The results of your blood test shows that your Vitamin D level is low. A prescription has been sent to your nominated pharmacy for you to collect and additional information can be found in the link below:	**Vitamin D Protocol Treatment**	Admin will use the protocol template this enables us to log the result, prescribe the meds, add an ICE request for follow up blood test after 6 weeks & produce letter for pt sent via Accurx. The script will be sat in EPS ready for GP to sign.
womens health	anaemia in pregancy , script EPS	Your recent blood test shows that you have become anaemic as result of being pregnant. This is very common and not serious but it would help you to start taking iron tablets. The doctor has sent a prescription to your nominated pharmacy for you to collect. Please discuss with your Midwife how long you should continue to take the tablets. Please let us know if you think you may be allergic to this medicine.	**Iron Deficiency in Pegnancy**	
womens health	bacterial vaginosis script at EPS	Your recent swab showed a slight infection. The doctor has sent a prescription to your nominated pharmacy. If you are allergic to this medication, please let the surgery know as soon as possible. If you have any questions about this, please contact the surgery or the pharmacy.	**Swab Result - New Treatment**	Admin will attach BV letter to this AccuRX - would be useful to see letter please
womens health	**smear** repeat as per smear guidelines	No text		Carol O'Sullivan deals with ALL smear results. She will inform pt if repeats are needed and code smears done. She also sets all recalls.
womens health	swab positve for thrush script ~~TH/SM/~~ EPS	The result of your recent test showed an infection. The doctor has advised for you to speak to a local pharmacist for over-the-counter thrush treatment.	**Path Result - OTC Thrush Treatment**	We don't have a preset for "prescribed meds" only OTC. If you prescribe anything we can change it accordingly.

Folic acid	**Folic acid prescription - I have checked that B12 levels are normal**	Your recent blood tests show that your folic acid is low. This is a vitamin found in vegetables, beans and grains. Please collect a prescription for 4 months replacement tablets of Folic acid from your Pharmacy. After you've completed the replacement treatment you may continue to take a multivitamin supplement with folic acid from your pharmacy and eat foods with folic acid.https://www.bda.uk.com/resource/folic-acid.html	**Folic Acid prescription**	Admin will check that the B12 level has been checked in the last 3 months and is >160 before issuing a script and sending the AccuRx
Folic acid	**Folic acid in pregnancy**	It is recommended that you take Folic Acid in your pregnancy. A prescription will be sent to your nominated pharmacy in 3-4 working days' time. If you have any questions or think that you maybe allergic to the medication, then please contact the surgery.	**Folic Acid for pregnancy**	
Ultrasound	**US appt neded - pt to book - I have added the request to ICE**	The doctor would like you to have an Ultrasound scan taken. To make an appointment, please contact the Radiology Department at the hospital in 2 days' time on 02381205326.	**Hospital Ultrasound Invite**	
X-Ray invite	**XR appt needed - pt to book - I have added the request to ICE**	The doctor would like you to have an X-Ray taken. To make an appointment, please contact the Radiology Department at the hospital in 2 days' time on 02381204015.	**X-Ray invite**	
Anaemia	**Iron deficiency in pregnancy**	Your recent blood test shows that you have become anaemic as result of being pregnant. This is very common and not serious but it would help you to start taking iron tablets. The doctor has sent a prescription to your nominated pharmacy for you to collect. Please discuss with your Midwife how long you should continue to take the tablets. Please let us know if you think you may be allergic to this medicine.	**Iron Deficiency in Pregnancy**	
stool	**repeat stool sample - xxxx sample type**	Your recent stool test needs to be repeated. Please provide another stool sample and bring it down to the surgery by 3.30pm on the same day between Monday and Friday. We will leave a blue-topped bottle, form and label at St. Mary's Surgery for you to collect. Please ensure you attach the label to the sample.	**Repeat stool test**	
swab	**rpt swab - xxxx sample type**	Your recent swab test needs to be repeated. Please provide another swab sample and bring it down to the surgery by 3.30pm on the same day between Monday and Friday. We will leave a swab kit, form and label at St. Mary's Surgery for you to collect. Please ensure you attach the label to the sample.	**Repeat Swab test**	
Urine	**Repeat urine - xxxx sample type**	Your recent urine test needs to be repeated. Please provide another mid stream urine sample (a first thing in the morning sample is best) and bring it down to the surgery by 3.30pm on the same day between Monday and Friday. We will leave a bottle, form and label at St. Mary's Surgery for you to collect. Please ensure you attach the label to the sample.	**Repeat Urine test**	

Appendix 3: Ranked list of potential clinical protocols

Protocol header	Protocol key content	Rank
Haematology	Polycythaemia	10
	B12	2
	Raised platelets	
	Low platelets	
	Anaemia	1
	Neutropenia	
	Lymphocytosis	
	Lymphopenia	
	Cold Agglutinins	
	MGUS	
Biochemistry	Childhood low vitamin D	
	Low sodium	
	Managing potassium	
	Managing Magnesium levels	
	Thyroid	
Musculoskeletal/ rheumatology	Osteoporosis	
	Osteoarthritis	
	Inflammatory arthritis	
	Gout	
Respiratory	COPD	
Endocrinology	Diabetes	
	HRT	3
Prescribing	Opioid review	7
	Review of Z drugs and Benzo	8
	Follow up of patients not collecting MH depo	
	Supply issues – queries diverted to medicine managers	
	Dressing / feed requests etc diverted to medicine managers	
QOF	Training for GPA's	4
	Non-HDL cholesterol processes	
Workflow	Letters going direct to GPA's rather than GP's	
Pathology	Pathology filing pre-sets with standard requests to admin and GPA's	9
	Pathology result reviews by GPA's	
Medicine management	Medication / annual review by GPA's	
Tasks	Review of tasks / internal processes	
Sick notes	Sick notes going to Nurses	5
OOH reports	Out of hours reports going to nurses	6
Safeguarding	System developed for referral forms for adults – allowing GPA's to complete a referral based on template completed by GP	
Triage	New tool for finding appts	
Standard responses	Inappropriate requests from secondary care	
	Gender prescribing requests	

Appendix 4: Anaemia protocol



Appendix 5: GPA reflective blog

How I see my Care Coordinator role as adding value to personalised primary care

Julia Kowalczyk, December 2022

"The role of a Care coordinator is relatively new to the NHS and a very recent addition to St Mary's Surgery, Southampton. Nevertheless, through closer working between a GP and Care Coordinator, we have been able to make a noticeable difference to our quality of care thanks to the extra time and capacity to support our patients.

Many of our patients are hard to reach which is often a secondary problem to substance misuse and various socioeconomic factors prevalent in this area. To illustrate, I would cite an example of a patient with liver disease, low mood and accompanying self-neglect, and increased alcohol consumption. This patient's health had deteriorated significantly in the last 12 months and so had her engagement with health professionals. She was seen almost 6 months ago, at which point she admitted she had not been taking her liver medication and declined blood tests as well as referrals to counselling and hepatology (having previously missed an appointment). Subsequent telephone call attempts, text messages and letters yielded no results. In the end, I was able to contact the patient's friend, who has been involved in her care, and asked for his help to activate the patient. This led to a lengthy and difficult conversation as I was unable to reveal any information about the patient. The friend was quite frustrated with the healthcare system and lack of strong initiative from our side. Driven by emotions, he expected quite radical actions from us as healthcare providers, but I explained the difficulties we face in terms of working with individuals with full mental capacity who decline to engage with us. In the end, he persuaded the patient to agree to a face-to-face appointment with her doctor and accompanied her to it. During the GP session, the patient accepted referrals to counselling and hepatology, medication for liver treatment and nutritional shakes. We cannot yet say whether she will engage with the other teams she has been referred to or take the prescribed medication. Nevertheless, thanks to the extra time we were able to dedicate to this case, after months of unreturned calls and messages, a face-to-face appointment feels like tremendous progress.

IT illiteracy is another challenge we face in a world swiftly moving towards digitalisation, accelerated by the Covid-19 pandemic. Most of our appointments are booked based on eConsults, many reviews are now done online, and we rely heavily on text messaging and sharing various links. This is a necessary answer to a shrinking workforce and for many a welcome improvement but some of our patients struggle to adapt to this. The care coordinator role allows time to call patients who did not complete online reviews (e.g., with Depression, Asthma, HRT) despite numerous text messages and instead fill out the form with them over the phone. Many admit they prefer speaking to someone and/or find it difficult or impossible to access the online reviews. It also gives a chance to record additional comments and questions.

Similarly, another example of this could be flu vaccination bookings. Self-book links shared via text are convenient and used by many patients, but a large proportion of eligible individuals are over 65 and don't always have access to a smartphone. Our reception team are naturally inundated with phone calls from patients needing acute care and lines are often very busy. Individuals are not keen to wait in the queue to book their vaccination if they are otherwise well and don't need to discuss other health issues. By running specific searches based on Read Codes, could identify hard to reach patients whom I can call directly to offer and book a flu jab, therefore increasing uptake in a group who otherwise are not likely to come forward.

We have also been able to single out tasks that don't fit into the workloads of clerical teams but don't necessarily need to be completed by a clinician. A good example of these would be the development of our anaemia template. The questions around diet, menstruation, bowel problems etc., usually asked by a doctor

during a blood test results consultation, have been carefully transcribed into a script for a care coordinator. Using this template and training received from the doctor, I can confidently approach the patient and gather relevant information as well as signpost to dietary advice resources. Although this approach is a time saver for the clinician, it is important for a care coordinator to remain vigilant and record all answers so that they can be reviewed by a GP who can determine whether further treatment or action is needed. This was the case for example with a lady experiencing menopause who reported having blood in her stool which was appropriately flagged up and screened and actioned by the GP; subsequent positive Faecal Immunochemical Test resulted in a fast-track referral for suspected colorectal cancer.

We already know that patients benefit greatly from a continuous caring relationship with their healthcare provider. This is hard to achieve by the usual GP themselves, especially in a practice with 23,000+ patients. The care coordinator acts as a buffer, linking the patient with various teams within the surgery while nurturing a relationship and helping to build trust. Patients who engage actively in their care are happy to hear a familiar voice and thankful for the extra time devoted to them.

This is, of course, not the extent of the care coordinator role which is still evolving. We are trialling new protocols and looking for other ways to ease the burden on the strained GPs. It's an exciting opportunity to develop and shape our innovative 'clinical firm model' for being able to continue to provide personalised care to our community."

Julia Kowalczyk is part of Southampton Central PCN, an inner city PCN. Julia has been working in close partnership with Dr Mead Mathews and the wider PCN team to develop and pilot innovative approaches to enable continued personalised primary care.

Appendix 6: Clinical firm education PowerPoint slide deck (attached)