Development of the Prototype Concise Safe Systems Checklist Tool for General Practice

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Abstract

Background

We identified a need for a concise safe-systems checklist designed to address areas of patient safety which are under-represented in mandatory requirements and existing tools. The process of development is described from initial expert consensus of a long list of items suitable for inclusion on the checklist through their refinement following staff feedback to the nine items included on the prototype checklist. We then present the results of the pilot of the prototype checklist and a qualitative exploration of staff attitudes to its utility and usability.

Methods

An extensive narrative review and a survey of world-wide general practice organisations were used to identify existing primary care patient safety issues and tools. A RAND panel of international experts rated the resulting statements summarising the findings for importance and relevance. The checklist was created to include areas that are not part of established patient safety tools or mandatory and legal requirements. Four main themes were identified: information flow, practice safety information, prescribing and use of IT systems. A 13 item checklist was trialled in 16 practices resulting in a 9 item prototype tool, which was tested in 8 practices. Qualitative data on the utility and usability of the prototype checklist was collected with a series of semi-structured interviews.

Results

In testing the prototype 4 of 9 items on the checklist were achieved 100% of the time, 3 items 87% of the time and 2 items 75% of the time. Participants expressed concern about the utility and implementation of checklists in general. However, the prototype was praised for its brevity and its use as a learning tool and 'final check' on elements of safety that the practices considered important.

Conclusions

The concise patient safety checklist tool, specifically designed for general practice, has been made available as part of an online Patient Safety Toolkit hosted by the Royal College of General Practitioners. Practice managers/GP partners should find it a useful tool to monitor safety within the practice.

Background

The importance of patient safety continues to be recognised yet progress on improvement has been modest and patients everywhere continue to experience avoidable harm and substandard care [1]. One setting in the UK where patients experience increasing risk is primary care; where the diversity, scope and variation in infrastructure is combined with unprecedented demand from an ageing and chronically ill population [2]. To help meet this need the National Institute for Health Research School for Primary Care Research (UK) (NIHR-SPCR) funded the development of a multi-strand Patient Safety Toolkit comprising a number of tools that would equip practices to independently address a range of patient safety issues[3].

In secondary care patient safety has been improved in a range of specialities by using patient safety checklists, for example in surgery, haemodialysis, anaesthesiology and other highly protocol driven areas of medicine [4–7]. Limited attempts have been made to transfer the success of checklists to primary care. For example, the NHS Education for Scotland (NES) checklist [8] is a 78 item tool designed to encourage reflection amongst staff or those designed by UK indemnity organisations made available to general practices as part of a wider risk-assessment e.g. Clinical Risk Self-Assessment from the Medical Protection Society [9, 10]. However these existing examples are either lengthy [8], not specific to patient safety [8, 9] or require external facilitation [9].

An approach that had not yet been taken was the development of a concise or 'short-form' checklist, specific to patient safety within UK general practice and designed to be completed by practice staff without external support. Our aim was to produce such a checklist to complement the other instruments that made up the Patient Safety Toolkit [3]. The items included on the checklist were to be informed by international expert consensus [11], avoiding items on mandatory health and safety requirements already being met [12, 13] and complementing the content of other tools in the Patient Safety Toolkit for UK General Practices [11, 14, 15]. Here we

describe the development of the concise checklist, including the rationale of the final design and the quantitative and qualitative testing of our prototype within UK general practice.

Methods

The NIHR SPCR Patient Safety Toolkit for general practices involved multiple academic centres (Birmingham, Exeter, Keele, Manchester, Nottingham, Oxford and Southampton). We describe the methodology in two discreet phases; Phase One - Development, and Phase Two - Testing the prototype tool. In Phase One the development of the checklist was conducted in two parts by senior members of the research team BB, RS, AA and SC. In Phase Two the checklist was tested by practice staff at eight practices within North Staffordshire as part of the broader Patient Safety Toolkit project [3]. The overall study design is summarised in Figure 1.

Phase One: Development

The first part of the development phase consisted of the identification of items for the draft list and the second the refinement of the draft list using user feedback to produce the final prototype checklist.

In part 1 an extensive narrative review of tools for general practice patient safety was conducted by two of the authors (RS, SC) [16]and existing tools, ideas and items (for example a log of minor operations) suitable for inclusion in the broader toolkit, including the checklist, were extracted from the review (e.g. results, expert statements, questionnaire output, taxonomies). These items were considered by a RAND consensus panel of international experts [11] who produced a score relating to the priority of each of the items to be part of a Patient Safety Toolkit for general practice. The nascent checklist was formed from items deemed ‘high priority’. These were then compared to Care Quality Commission (CQC) requirements [12] and the Canadian Quality Book of Tools (CQBT) ‘safe theme’ [17] and items already included in these or other UK mandatory requirements [12, 13] were removed from the checklist. Finally the wording of the draft list of items was reviewed by the study team for clarity and precision and those judged to be similar in theme were combined.

In Part 2 of the checklist development we tested the 13-item checklist with an opportunistic sample of staff from practices recruited as part of the wider Patient Safety Toolkit (PST) project [3, 14]. Staff were invited to fill out the checklist and a questionnaire to explore their perspectives on the items of the checklist primarily relating to their utility. For example, staff were asked whether they felt individual items addressed important aspects of patient safety, whether they were already being routinely addressed within the practice, and whether they had made any changes to practice processes as a result of completing the checklist. Staff were also asked about the clarity of the items presented and if they were able to answer the questions posed as either ‘yes’ or ‘no’ as intended.

Phase Two: Testing of the prototype tool

The testing of the checklist involved the dissemination and testing of the prototype checklist tool. Convenience sampling [18] was used to recruit practices previously involved in the PST project to implement the prototype checklist numbering eight in total. Each participating practice completed the checklist and the summary statistics of their compliance with each item produced.

Semi-structured interviews [19] were then conducted with practice staff at the eight practices involved in the implementation of the checklist. The interviews were completed by an experienced member of the study team (KM) and digitally recorded before being transcribed verbatim. A sample of interviews were analysed thematically [20] by two of the authors working independently (IL & SG) with any discrepancies and the overall interpretation discussed before analysis of the remaining interviews.

Results

Phase One - Development

Part 1—Identification of the items for inclusion on the draft checklist

A total of 205 items were identified from the literature review of the RAND consensus panel of international experts [11]who considered 37 were of “high priority”. Following comparison with the CQC, CQBT and UK mandatory requirements and the review of the study team for repetition and clarity a total of 13 items were included on the draft checklist.

Part 2—Refinement of the draft checklist to produce the final prototype

A total of ten East Midlands (EM) and six Greater Manchester (GM) practices tested the draft checklist. Within these practices a total of 38 respondents (23 from EM and 15 from GM) completed the pilot version of the checklist and accompanying questionnaire (23 GPs, four nurses, nine practice managers, and two administrative staff). An additional 25 staff from participating practices were interviewed with regard to the applicability of the PST provided feedback on the checklist.

At this stage the checklist was divided into four sections (information flow, safety information about the practice, prescribing, and use of IT systems), each with an introductory statement that was taken directly from our project taxonomy of patient safety [16].

A summary of the results from the development of the prototype tool can be found in the following tables each relating to one of the domains. Within each we define the domain, present the draft items, the rationale and evidence for each, the changes made as a result of the feedback collated from the questionnaires and semi-structured interviews and the related item as it appeared on the prototype checklist which numbered nine in total.

Phase Two - Testing of the prototype checklist

Eight participating practices within North Staffordshire (NS) agreed to test the checklist. A representation of the characteristics of the practices participating in the toolkit project can be found in Table 2.

Quantitative data

Table 3 shows the percentage of practices which answered yes to final checklist items. Items with a response of ‘No’ indicate that the practice might need to make a change to its systems if they do not feel that they have addressed a checklist item. The two items with the lowest percentage of ‘Yes’ responses (a quarter of the staff members did not think their practices achieved these safety goals) were item 6 regarding the failure to monitor the non-collection of prescriptions and item 7 around checking vulnerable patients following discharge from hospital. Several items received scores of 100% including the appropriate handling of incoming clinical information and the timely follow-up of abnormal results.

Qualitative data

We identified two key themes relating to the characteristics of the intervention and the environmental context. Within each a series of sub-themes were identified (summarised in Table 4) and below we describe each of these alongside exemplar quotes.

Intervention characteristics

This included the overall design and content of the checklist and the intended user and the frequency of its use.

Relative advantage

This describes the stakeholder’s perception of the advantage of implementing the Concise Safe-Systems Checklist (SSC) as opposed to maintaining existing practice [31]. Any tool or instrument designed to improve safety of care can also improve aspects of care in other respects as patient safety and quality of care are so intrinsically linked. In terms of the advantages of using the SSC, staff described how they improved patient safety directly in terms of prescribing safety and enabling the review of existing systems, but also indirectly by using it to provide a framework to discuss patient safety with the broader practice team.

Prescribing safety

A number of participants commented on the benefits of using the tool to improve medication safety and one practice manager felt the section on medications was the most useful.

“The medication things I thought was probably the most useful section… they say the most errors in a general practice are made on medicines…” Practice Manager, P03

The other area that the SSC appeared to be effective was at highlighting the non-collection of repeat prescriptions. One GP acknowledged how this item had raised awareness of the issue and a practice manager how it had encouraged them to discuss the issue with other members of the team

“Non-collection of prescriptions, that’s the one that we found that we weren’t doing very well… because we’re moving to electronic prescribing in a couple of weeks’ time, we’ll look into that, that way…” GP, P02

“The non-collection of prescriptions was good and that did encourage me to talk to the dispensing team—”what did they do with those?” " Practice Manager, P07

Staff engagement

Participants described how using the SSC indirectly benefitted patient safety by helping engage a range of staff. Although the tool was designed to be used by a single individual frequently, its completion would or could rely on other members of the practice team, helping raise awareness of patient safety.

“So we found it on several levels a really useful tool and not least, of course, patient safety, but in terms of actually being another vehicle to encourage cross-team understanding within the practice, as well.” Practice Manager, P01

One Practice Manager felt that the document could be used to frame a discussion with GPs on whether policies and procedures were implemented as expected.

“…it’s quite straightforward, I’ll just run through everything with the GPs instead of saying ‘yes, we do this’… I mean you can have policy and procedure and no-one can follow it.” Practice Manager, P06

Review existing systems

It was noted, how as a whole, the SSC provided the opportunity to look again at the safety of existing systems that due to familiarity might otherwise be overlooked.

“Actually, it gives you the chance to reflect that some of the things [we do] are a system and to think, ‘Oh, yes!’ Something like mail-handling is, like so embedded …we take 500 letters in… every day, scan them in, pass them round and whatever - that, you know, you can almost forget that that is a safe system.” Practice Manager P03

Training staff

Another way in which the SSC may indirectly benefit patient safety is by its use as a training tool for clinicians in the early part of their career. One practice manager described how it presented a useful overview for inexperienced clinicians.

“One thing I thought it would be …a good training tool for, like, an overview…These things would be good for, like, GP registrars and things, like in training… it’s a good overview position.” Practice Manager, P03

High level approach

The benefits of the high level approach adapted by the checklist as a way of immunising specific items against local or sporadic change were described.

“I think one of the things that’s hard … with the checklist, is… keeping it up to date as things change so fast in practice, but a lot of your sentences are quite high-level, so it means that it lasts…” Practice Manager, P03

Adaptability

Adaptability describes the degree to which an intervention can be tailored, refined or reinvented to better meet local needs. The flexibility of the SSC in terms of how frequently it could be used was noted.

Frequency of use

There was no prescribed time interval in between using the SSC, meaning that practices could decide how often it could be used. One practice manager described how they might use the tool monthly and another how they would use it on an annual basis.

“…If you’re doing it monthly, you’re more aware of the questions in your head, aren’t you, so it’ll become more of a routine. So, yes, I think it would [be monthly], in the long term.” Practice Manager, P04

“I think once you’ve checked through it, it might be worth just going through it on an annual basis, just to make sure that you are doing these things….” Practice Manager, P06

“I would very much like to see this as an annual event, in practice.” Practice Manager, P01

Design Quality

The design quality describes the perceptions of users of the quality of its design. The primary design element which participants commented on was its ease of use.

Ease of use

The SSC was considered well structured and easy to follow, which meant that it was quick and easy to use.

“I think because it is quite brief it’s quite a useful thing, just a pointer to go through it and make sure that these things are still being done as they should.” Practice Manager, P06

Environmental context

The theme of environmental context relates to the influence of factors external to the design of the tool and the organisation, specifically the ability of the practice to meet the needs of their patients.

Lack of capacity

One factor that may inhibit its further use was the limited capacity, in terms of time and workload in primary care. Despite not knowing the length of time it would take to use the tool, a GP at one practice asked a part-time member of staff to be responsible for the tool because of concerns over their own lack of time.

“Because we were just totally snowed under, so I knew I wouldn’t have time to do this so I asked my colleague who only works part time and did that for me. So he’s… done the Safe Systems questionnaire.”—GP P02

One practice manager was positive towards the SSC but cautioned that its future implementation might depend on the ability of practices to meet the twin pressures of time and resource.

“As much as I am a big fan of this tool, I think the two key issues are finding time and, if it involves any resources, is actually finding support for those resources because that’s always challenging in this day and age.” Practice Manager, P01

Discussion

Main findings

We have described the creation of the SSC a new tool in patient safety which is included in the Royal College of General Practitioners hosted *Patient Safety Toolkit* [3]. The development involved the structured consensus of priority issues gathered from an international panel of experts. Each item was underpinned by published evidence and the checklist of nine items was selected and edited for clarity from an initial long list of 13 items based on the feedback of users. The final 9-item prototype was tested in general practice, and participating practices (self-reported) that performance was high for the majority of the items i.e. 7 out of 9 checklist items were answered ‘yes’ 87% of the time or more with only two items (follow-up of vulnerable patients after discharge and the non-collection of prescriptions) answered ‘no’ 25% of the time. The qualitative feedback on the usability and utility of the checklist favoured its brevity, apposite content, and its use for framing broader safety-based discussions across the practice team. The potential barriers to its wider implementation were the twin constraints of time and resource familiar across much of UK general practice.

Strengths and limitations

This instrument remains a prototype and has not been subject to full qualitative development (only 8 practices tested the final checklist) nor has it been validated by construct testing in practices due to restrictions on the funding of the patient safety toolkit project. We acknowledge that all of the practices testing this instrument were located in one geographical area (North Staffordshire); however their characteristics were reflective of national averages [https://fingertips.phe.org.uk/profile/general-practice]. Interviewees were nominated by their practices from a small pool of potential candidates that had used the checklist, in many cases the practice manager being the only suitable person to be interviewed, but this may have reduced response bias because almost everyone who used it was interviewed.

Checklist utility

There is a tendency to see checklists as a tick box exercise (in which a list of all ‘Yes’ answers is more important than any process of system maturation), yet checklists, like other quality or safety improvement interventions, can be used for summative or formative reasons [32, 33]: Staff may feel that they cannot answer ‘No’ if punitive measures will ensue in a summative external assessment. However developmental and supportive approaches will engage health professionals in its use, which incorporate but also move beyond conventional approaches to quality assessment (e.g. audit and incentives) to emphasise corporate and shared learning [34]. This is because successful quality improvement is facilitated by close team working within practices [35, 36] and by strategies that include the wider practice team [37], for example, ensuring practice staff have the time and resources to learn, work, and plan together with clear objectives [33]. In this context the SSC could be used as part of a formative learning and development exercises. These could involve senior practice staff (such as practice managers and senior clinicians) looking again at their existing systems, or supporting an audit that involves clinical and non-clinical staff for example communication of results or non-collection of prescriptions. Outcomes might include the redesign of practice systems or refresher training of staff. In essence, the checklist facilitates a participatory approach that does not require its implementation in a linear fashion, but instead takes the needs and experiences of each practice as the starting point [38].

In considering the scores produced by the checklist, the data show a clear ‘ceiling effect’ where a considerable number of items produced a maximum score, this means that the checklist would not be suitable to compare compliance between practices. This is a feature common amongst many self-assessment measures [39]. If as intended the aim of our checklist is used to help practice staff identify key issues and encourage safe practice then these high scores are a good indication of positive patient safety behaviours.

Comparison with other safety interventions

The other GP checklist tool in the public domain is the NES checklist, which consists of 78 items and designed with the goal of helping practices prepare for CQC or other similar inspections [40]. The concise safe systems checklist we have produced can also help raise awareness of previously undiscovered safety issues as can the NES. However, the SSC was consciously designed to be straightforward to use, requiring neither facilitation nor specialist training, and its items selected to highlight areas of safety that either existing mandatory requirements or instruments available within the NIHR Patient Safety Toolkit [3] would not detect.

Design of the checklist

The intention was to be as specific as possible with each checklist item so that practices could demonstrate how they achieve each item, and reduce any 'tick box' tendencies [39]. We did not include items on staff wellbeing, which was not part of our original safety taxonomy of the SCC's toolkit [16], and are also frequently omitted from checklists in high-risk industries [41]. Of the items featured that relating to the non-collection of repeat prescriptions was a significant component according to many of those we interviewed, who acknowledged they had no system in place to manage these.

Usability

Though suitable as a framework for wider practice discussion, the checklist does not require the practice team to meet simultaneously to be effective. Its usability may also be enhanced by creating a digital version. Though not arising as an issue amongst our participants who were only exposed to a paper-based version the potential to automate aspects of the checklists is viable. For instance, it would be possible to conduct an electronic search for discharged patients requiring review. Where electronic versions of other general practice tools have been produced and incorporated into practice systems, such as with prescribing safety indicators, it has resulted in enhanced utility [29].

Conclusions

It is difficult to take checklists from the highly ordered environments where they have been most successfully used such as the aviation industry or surgical safety [4]to the more chaotic and patient-centred world of community medicine where there is enormous pressure on resources. it's been recognised previously that in healthcare checklists should be monitored to avoid over-burdening staff [42] and general practice in particular is a field in which practitioners have been shown to be over-worked [43]. Their role complicated by the unexplained symptoms and immense diversity presented by individual patients [44]. Therefore, it is important that checklists produced for general practice have their origin in general practice safety factors and are designed for use in the real world. If we acknowledge that measuring quality and safety requires a mixture of subjective and objective approaches, [45, 46] then SSC appears to offer a valuable objective lens through which to reflect on subjective procedures and actions within individual practices and highlight safety deficits. In doing so the Concise Safe Systems Checklist meets our goal of producing a short, useable checklist that focuses on problems with general practice systems not detected by other instruments which are available within the NIHR Patient Safety Toolkit.

List Of Abbreviations

CQBT Canadian Quality Book of Tools

CQC Care Quality Commission

SSC Concise Safe-Systems Checklist

EM East Midlands

GM Greater Manchester

NIHR-SPCR National Institute for Health Research School for Primary Care Research

NES NHS Education for Scotland

NHS National Health Service

NS North Staffordshire

PST Patient Safety Toolkit

PMCPA Prescription Medicines Code Of Practice Authority

Declarations

Ethics approval and consent to participate

This was obtained from East Midlands - Nottingham 1 Research Ethics Committee—REC/REF - 13/EM/0258 15 July 2013 for all organisations involved. Signed consent was gained from all participants in line with the approval granted.

Consent for publication

Not applicable

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

There are no competing interests financial or otherwise from any of the authors.

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Authors’ contributions

RS, TA, SC and IL were responsible for the original idea for the manuscript. IL and SG were responsible for the analysis and presentation of the qualitative data and BB for the analysis and presentation of the quantitative data. RS and IL wrote the first draft. This was then commented on by AA, SC, KP, SG and KM. These comments were incorporated and a further version forwarded to all authors who made additional minor comments. These were then incorporated in the final draft which was approved by all.

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Not Applicable

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Tables

Table 1 is below

Table 2 Summative characteristics of participating practices

	List Size*	Under 18*	65+*	% Non-White**	Deprivation Score*	QOF Score (2013)*	% Female**
Practice Average/SD[1]	7363/	20.7%	19.5%	13.1%	22.5	988.1	52.9%
	2830	3.1%	3.3%	15.2%	9.1	7.6	3.8%
English Average	7041*	20.8%*	16.7%*	13%**	21.5*	961*	51%**
Practice Median/IQR[1]	6804	19.7%	20.9%	1.6%	17.8	989.4	52.4%
	4327	5.9%	5.8%	30.9%	22.2	10.2	8.0%

**taken from the national general practice profiles (Public Health England) www.apho.org.uk/PRACPROF/*

***taken from the GP patient survery July 2014 http://practicetool.gp-patient.co.uk/practice*

The practice average, standard deviation, median, and IQR use values that are weighted by the practice list size

Table 3. Percentage of "yes" answers across practices

Item Number	Summary description	% Yes answers
1	All incoming clinical information is seen by trained or clinically experienced members of staff before filing.	100
2	Where incoming clinical information requires follow-up this is documented in the patient's record and acted upon	87
3	Where a clinician decides it is indicated, the patient (or a suitable appropriate representative) is informed of abnormal investigation results and documented in the patient's record.	100
4	The practice keeps a log of minor operations containing key information including • Date/patient's name • Procedure performed • Who performed the operation and who assisted • Any complications	87
5	Up-to-date information on practice policies, procedures and local facilities/services is provided to guide all temporary clinical staff (including GP registrars).	100
6	Non-collection of prescriptions is monitored and a trigger for review in partnership with local pharmacies	75
7	Vulnerable patients discharged from hospital are followed-up by a member of the clinical team within 1 month	75
8	The indication for repeat medications is coded within the electronic record	87
9	Staff are trained to make safe use of the prescribing elements of the clinical IT system relevant to their role	100

Table 4 Summary of themes and sub-themes

Theme	Sub-theme1	*Sub-theme 2*
Intervention characteristics	Relative advantage	*Staff engagement*
		Prescribing safety
		Review existing systems
		Training staff
		High level approach
	Adaptability	*Frequency of use*
	Design quality	*Quick to complete*
Environmental context	Patient needs and resources	*Lack of capacity*

Table 1: Development of Items for inclusion in prototype checklist

Figures

Development of draft checklist					Prototype Checklist
Description	*Item (s)*	*Rationale*	*Evidence*	*Refinement*	*Item*
Information flow The practice has a systems based approach to processing incoming results* and information in to and out of the practice, which prevents human and electronic error in data handling. *results = lab results, reports or investigations, and letters.	All incoming clinical information is seen by a GP in the practice to view and action before or after being filed, scanned or coded in the patient's medical record.	The practice has a systems based approach to processing incoming results* and information into and out of the practice, which prevents human and electronic error in data handling [* results: lab results, reports or investigations]and letters) [11].	(PMCPA) [38] (Premises Records Equipment/Devices and Medicines management section) (http://www.rcgp-practiceaccreditation.org.uk	Wording changes - in order to allow practices to nominate appropriately trained staff to handle mail rather than just GPs	All incoming clinical information is seen by nominated members of the team trained (or with relevant clinical experience) to deal appropriately with this information before the information is filed in the patient's record.
	Where an incoming result, report or investigation requires follow-up or a diarised activity, it is recorded in the patient's medical record and acted upon [for example follow up of blood tests such as PSA, INR etc.]	Where an incoming result, report or investigation requires follow-up there are systems in place to ensure it occurs.	Adapted from PCMPA [38] and informed by Casalino et al. [39].	These items were combined as they were felt to be too similar	Where a clinician decides it is indicated, the patient (or where appropriate the patient's representative) is informed of abnormal investigation results in an appropriately and timely manner and this contact is documented in the patient's record.
	The patient (or where appropriate, families and carers) is informed of an abnormal investigation results in an appropriate and timely manner and this is documented in the patient's record.	The provider has a written policy for informing patients, or where appropriate, families and carers, of the results of investigations and the policy is explained to them.	Adapted from PMCPA [38].		
	The practice keeps a record or log of their minor operations which will have the following information recorded; 1) date; 2) patient name; 3) procedure performed; 4) team members involved; 5) whether a specimen was sent for histology; 6) patient consent; 7) complications; 8) patient informed of result.	This log represents the basic safety information required about any surgery performed	Taken direct from PMCPA [38] (provider management), a template could easily be designed to collect this information		The practice keeps a log of minor operations
Safety information about the practice	Up-to-date information on the practice policies and procedures,	There is no current legislative requirement specifically	Dutch consensus process exploring safe working conditions from locum staff [40].	Items combined as seen as too similar.	Up-to-date information on practice policies, procedures and

The practice has a systems based approach to supplying information about safety procedures required by permanent and temporary staff	and local facilities and services is provided to guide locums and other temporary clinical staff who work in the premises, in the form of a clinical staff handbook (hard copy).	directed at trainees or temporary staff		Requirement for hard copy information was removed after discussion within our project team, considering the change to paper-light practices.	local facilities/services is provided to guide all temporary clinical staff (including GP registrars).
	There is an up-to-date office procedure manual (hard copy and/or electronic copy) covering the administrative procedures and systems for the daily running of the practice to which team members have access. These policies are discussed and agreed by team members and are reviewed at least annually.	There is no central policy document of safety procedures readily available to all staff	Review of factors supporting successful teamwork in primary care [41].		
Working with patients for safe prescribing The practice has a systems based approach to working with patients to improve the safety of prescribing practices	The practice works with patients to ensure medication list accuracy (medication reconciliation) upon hospital referral.	No such process for medicine reconciliation exists despite the potential impact on patient safety.	Review of reconciliation issues [42, 43].	Removed as seen as being beyond practice's control	
	Non-collection of prescriptions held by the practice are monitored and followed-up by the practice and medications which are not claimed by patients are a trigger for review and audit in partnership with local pharmacies.[d]	Non-collection might reflect medication error, poor compliance or other patient safety issues	A study of medication reviewing in primary care[27] and is also included in PMCPA [38].	Wording changes - in order to simplify the item	Non-collection of prescriptions is monitored or followed-up and is a trigger for review and audit in partnership with local pharmacies
-	Patients discharged from hospital should have a recorded follow up appointment with a member of the practice clinical team within 1 month.	Patients at high risk of patient safety incidents should be followed-up at risky care transitions	Originally from a US process mapping study [44].	Clinicians believed that it was unrealistic to follow-up all of the discharges within one month so we added the word 'vulnerable' to this item	Vulnerable patients discharged from hospital are followed-up by a member of the clinical team within 1 month
IT indicators for prescribing	The practice uses an electronic prescribing system for all prescriptions	Drive to implement CPOE primarily comes from its presumed	Evidence of CPOE can reduce medication errors [45].	Removed - did not allow practices enough	

The practice has fit for purpose IT systems for prescribing which work with prescribers to make prescribing a safer activity.	(Computerized Physician Order Entry (CPOE))[f]	benefit in reducing medical errors		flexibility to serve patients	
	Prescribers code the indication for the drug with each prescription using the electronic prescribing system (with the exception of topical medications without active ingredients).	This is good practice and there is currently no legislative requirement for it to be done	Canadian study of electronic coding of prescription indication [32].	Wording changed for clarity	The indication for all repeat medications is coded within the electronic record (excluding topical preparations)
	The practice has and uses, the most up-to-date alerting software available, routinely on all computers used for prescribing in relation to allergies and duplicates, drug-drug interactions, contraindications in terms of drug – disease, drug-age and potentially drug-lab value interactions	The safety features of software systems are effective in alerting users about potential clinical hazards and errors during medication order entry	Delphi study on electronic safety systems [46].	Felt to be imbedded in the computer systems	
	All staff (including GPs) are trained to make safe use of the prescribing elements of their clinical IT systems.	Specific training in IT prescribing systems is not a mandatory requirement and yet is essential for all team members involved in prescribing	Delphi study on electronic safety systems [46].	Wording changed for clarity	All staff are trained to make safe use of the prescribing elements of the clinical IT system which are relevant to their role

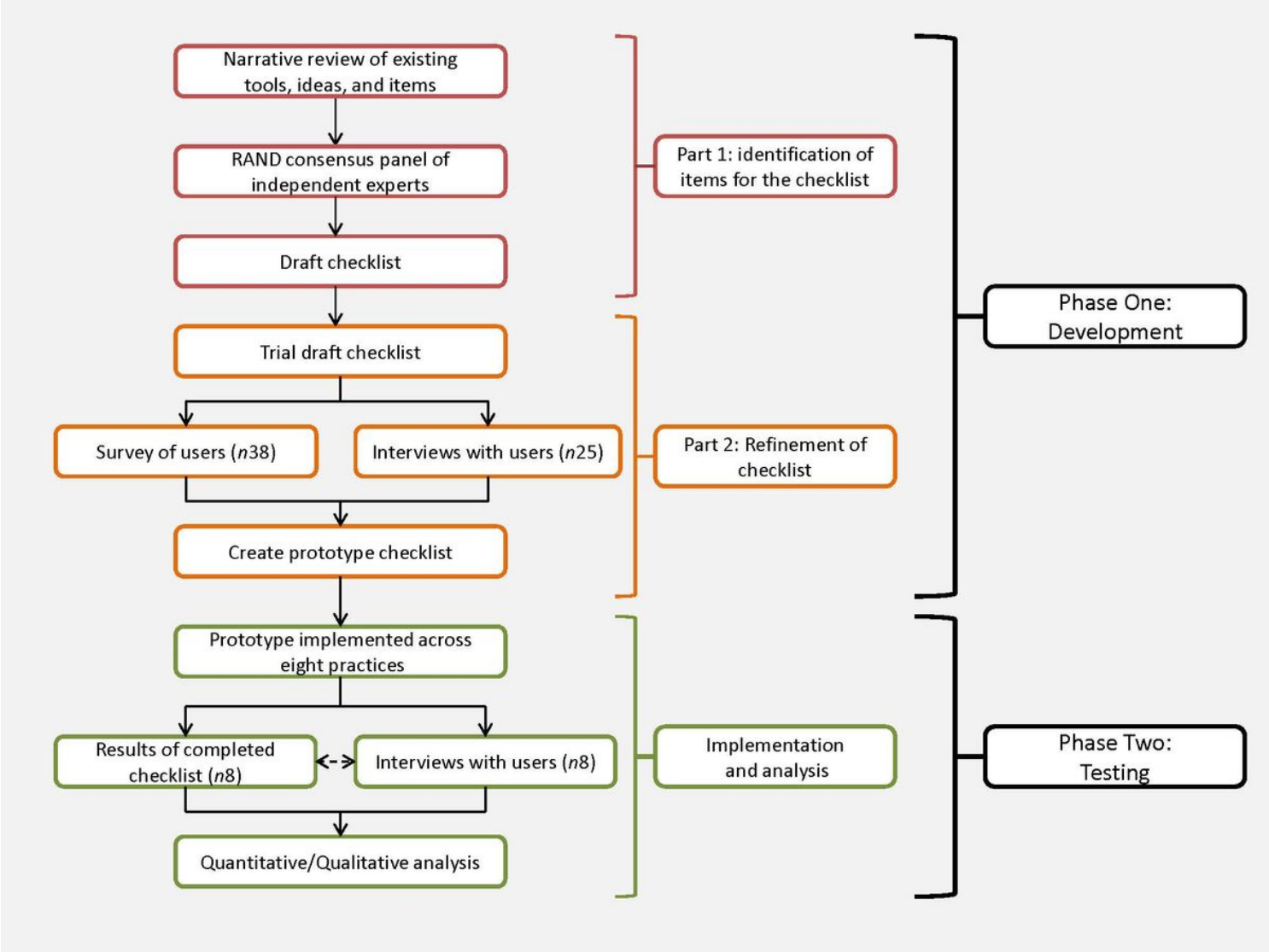

Figure 1

Flow chart showing study design

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Appendix1.docx