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Virtual care for prostate cancer survivorship: protocol for an evaluation of a nurse-led algorithm-enhanced virtual clinic implemented at five cancer centres across Canada

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ABSTRACT

Introduction Prostate cancer (PCa) is the most common cancer in Canadian men. Current models of survivorship care are no longer adequate to address the chronic and complex survivorship needs of patients today. Virtual care models for cancer survivorship have recently been associated with comparable clinical outcomes and lower costs to traditional follow-up care, with patients favouring off-site and on-demand visits. Building on their viability, our research group conceived the Ned Clinic—a virtual PCa survivorship model that provides patients with access to lab results, collects patient-reported outcomes, alerts clinicians to emerging issues, and promotes patient self-care. Despite the promise of the Ned Clinic, the model remains limited by its dependence on oncology specialists, lack of an autonomous triage algorithm, and has only been implemented among PCa survivors living in Ontario.

Methods and analysis Our programme of research comprises two main research objectives: (1) to evaluate the process and cost of implementing and sustaining five nurse-led virtual PCa survivorship clinics in three provinces across Canada and identify barriers and facilitators to implementation success and (2) to assess the impact of these virtual clinics on implementation and effectiveness outcomes of enrolled PCa survivors. The design phase will involve developing an autonomous triage algorithm and redesigning the Ned Clinic towards a nurse-led service model. Site-specific implementation plans will be developed to deploy a localised nurse-led virtual clinic at each centre. Effectiveness will be evaluated using a historical control study comparing the survivorship outcomes of 300 PCa survivors enrolled in the Ned Clinic with 300 PCa survivors receiving traditional follow-up care.

Ethics and dissemination Appropriate site-specific ethics approval will be secured prior to each research phase. Knowledge translation efforts will include diffusion, dissemination, and application approaches to ensure that knowledge is translated to both academic and lay audiences.

Strengths and limitations of this study

► This large multicentre historically controlled study will improve on an existing virtual care model for prostate cancer (PCa) survivors in Canada, with the aim of making the model more efficient, scalable, and accessible to patients.

► Redesigning the Ned Clinic towards a nurse-led model of care and assessing the appropriateness of different oncology nursing roles is expected to off-load overburdened oncology specialists while maintaining effective survivorship care.

► The pragmatic multisite design of this study will help validate the geographical generalisability of the Ned Clinic.

► All components of the virtual care model for PCa survivorship are informed by consistent and continuous engagement with patient partners who are core members of the study team.

► The use of a historical control introduces threats to internal validity and limits the ability to control for variables that can impact survivor needs, quality of life, and psychological well-being.

BACKGROUND

Prostate cancer (PCa) is the most common cancer in Canadian men. Early diagnosis and effective treatment have increased PCa 5-year survival rates in Canada to 95%, with the number of cancer survivors increasing correspondingly.[1 2] However, cancer survivors are often left with myriad functional impairments after treatment, as well as psychosocial and mental health challenges that diminish their quality of life.[3 4] Conventional approaches to post-treatment cancer follow-up care require patients to attend in-person visits with oncologists at pre-specified intervals.[5] These fixed protocols may be challenging for patients to

maintain to given the necessary travel, time off work and costs of attendance. Moreover, they can be poorly suited to address patient needs in a timely manner, as they were not intended to manage needs that arise between routine visits.[6 7] Further, the scope of conventional specialist visits is mostly, if not entirely, focused on assessing the risk of recurrence. Despite best intentions, the current model of care has limited capacity and time to provide comprehensive follow-up that meets endorsed survivorship practice guidelines.[8–11] Combined, these systemic issues suggest that current models of survivorship care were established in a different era of cancer survival and are no longer adequate to address the chronic and complex survivorship needs of patients today.

In recent years, the pursuit of virtual care in cancer follow-up has garnered interest but has not been implemented or studied widely.[12] Virtual cancer care models exploit technological innovation to deliver integrated, stratified, and tailored survivorship care to patients who are at low risk of recurrence.[13] Recent studies of genitourinary telemedicine clinics have demonstrated that the remote delivery of urologic care is safe, cost-effective, and yields high patient satisfaction.[14] Similarly, a recent large-scale evaluation of a PCa remote surveillance programme implemented in four treatment centres in the UK showed comparable clinical outcomes and lower costs to traditional follow-up care, with patients favouring off-site and on-demand visits.[15 16] Specialist follow-up virtual visits delivered through video and email have been explored by our research team and found to be acceptable for a subgroup of survivors with non-recurrence-related needs.[17]

The Ned Clinic

Building on the viability of previous virtual care models, our research group received funding to design, develop, and implement three virtual PCa clinics across Ontario (Toronto, Mississauga, Niagara).[18] Each of these virtual clinics employs a digital health platform called Ned ("No Evidence of Disease"), which was developed by a consortium of patients, researchers, and clinicians at the University Health Network and Trillium Health Partners in Ontario, Canada to support PCa survivors throughout their survivorship journey.[19–21] Ned aims to support sustainable survivorship care through streamlining shared access to health data and informing real-time clinical decisions. The platform provides patients with access to individual-level prostate-specific antigen (PSA) values directly from the province's Ontario Laboratory Information System to their personal smartphone. Ned comprises a web app for patients to submit patient-reported outcomes (PROs) and view PSA results, as well as a clinician web app and dashboard to visualise PSA kinetics, flag concerning lab results based on patient treatment history, review PROs, and release results. Interim results from a formative evaluation of the Ned platform conducted with 50 patients (mean enrolment of 21 months) indicate that the technology is safe and acceptable to patients, with no adverse events recorded and a mean compliance rate of 85% to the monthly PROs.
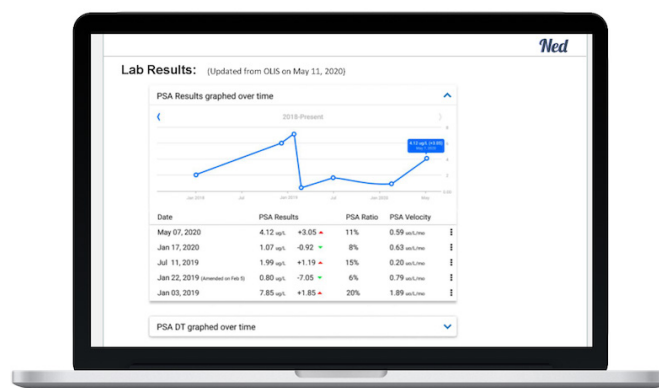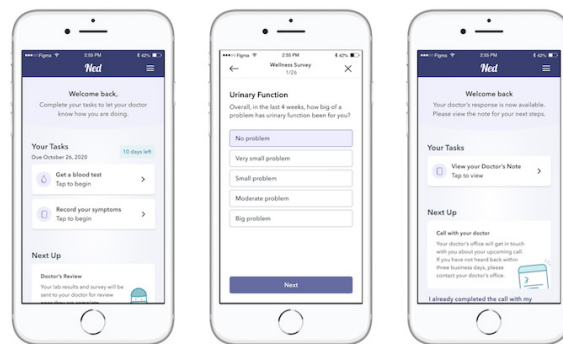

Figure 1 Ned Clinic patient and provider application screenshots. PSA, prostate-specific antigen; DT, doubling time; OLIS, Ontario Laboratories Information System.

Since its initial development, Ned has moved from a standalone product to an integrated service: the Ned Clinic. Once enrolled in the clinic, patients are monitored remotely by their specialist, who conducts asynchronous virtual follow-up reviews of their lab results, PROs, and medical history using the Ned clinician dashboard and either (1) generates a care plan and schedules a follow-up review in accordance with their surveillance protocol if their results and outcomes fall within an acceptable range or (2) requests a video or phone call to address emerging needs. Following each virtual interaction, specialists can generate a clinic note that is both logged on the Ned platform and the site-specific electronic medical records (EMR) system, as well as a patient report and updated care plan that patients can access on their Ned app. Figure 1 presents Ned Clinic screenshots.

Despite the promise of the Ned Clinic, there remains a pressing need to further advance the model of virtual survivorship care. First, the current model remains overly dependent on the involvement of oncology specialists. The worsening physician shortage and increasing number of specialist referrals have led to long waiting lists in Canada, with the average time between referral and specialist consultation estimated at 10 weeks.[22] These factors leave specialists with demanding schedules and limited availability to address subacute patient needs. There is mounting evidence to support the effectiveness of nurse-led interventions in cancer survivorship care,[23–25] as well as the numerous benefits likely to result from better

integration of nursing roles in survivorship services.[26–29] These findings motivate the expansion of the Ned Clinic to support the provision of nurse-led survivorship care in between specialist follow-up visits. An additional limitation of the current Ned Clinic is its lack of an autonomous triage algorithm that will be necessary to manage a large roster of PCa survivors. Algorithms have been previously used to guide PCa detection and treatment[30–32]; however, they have not yet been developed for the survivorship context. The operationalisation of a triaging algorithm within the existing Ned Clinic will help providers to care for those patients with the greatest needs and refer patients to tailored patient self-management strategies to optimally address symptoms. Lastly, the Ned Clinic is limited by the fact that it has only been implemented among PCa survivors living in Ontario. Implementation in new jurisdictions across Canada would help validate the generalisability of the service and allow a greater number of cancer survivors to benefit from the Ned Clinic.

Objectives

Our programme of research comprises two main research objectives: (1) to evaluate the process and cost of implementing and sustaining five nurse-led virtual PCa survivorship clinics in three provinces across Canada and identify barriers and facilitators to implementation success, and (2) to assess the impact of these virtual clinics on implementation and effectiveness outcomes of enrolled PCa survivors.

Our primary research question is as follows: in a Canadian population of adult men with PCa who are in the post-treatment follow-up phase of the survivorship journey, will a patient-centred nurse-led virtual survivorship clinic be adopted, accepted, cost-effective, and lead to improvements in unmet survivorship needs, cancer-specific quality of life, psychological well-being, and satisfaction with care?

Simultaneous to our assessment of this primary research question, we aim to answer the following secondary research questions:

1. How should the nurse-led service of virtual follow-up for PCa be designed and implemented to facilitate improved survivorship care and self-management?
2. What implementation strategies are effective for integrating Ned Clinics into varying clinical contexts and workflows to promote acceptance, adoption, and sustainability?
3. What is the most appropriate nursing role to fulfil all Ned Nurse responsibilities?
4. What are the challenges and opportunities to funding virtual services within the framework of the Canadian healthcare system from a policy perspective?

METHODS AND ANALYSIS
Setting

The uro-oncology programmes of five Canadian university-affiliated cancer centres will be enrolled in this research: (1) Queen Elizabeth II Health Sciences Centre in Halifax, Nova Scotia, (2) Walker Family Cancer Centre in Niagara, Ontario, (3) Carlo Fidani Cancer Centre in Mississauga, Ontario, (4) Princess Margaret Cancer Centre in Toronto, Ontario and (5) Prostate Cancer Centre in Calgary, Alberta; representing the Atlantic, Central and Prairie regions of Canada.

Methodological approach

This research will involve an initial design refinement phase followed by an implementation-effectiveness phase. The initial design phase will be guided by both user-centred design and service design principles.[33 34] The latter phase will adhere to the implementation-effectiveness hybrid type 2 methodology for conducting implementation studies.[35] This multimethod study will be complemented by an embedded historical control study comparing the survivorship outcomes of 300 men enrolled in the Ned Clinic with 300 men receiving traditional follow-up care. Our research methods draw from foundational work by Frankland *et al* on a supported self-management and remote surveillance programme for PCa follow-up care.[15 16]

Design and development of Ned algorithm

We will engage in a systematic and phased approach to design, build, validate, and refine a patient-centred PCa survivorship management algorithm. Previous decision algorithm development initiatives pursued by our research team have adhered to this approach and yielded a successful output.[36–38] As a first step in the design phase, we recently conducted a scoping review of existing virtual care models for cancer survivorship.[39] Simultaneous to this work, we have started to review current data inputs to the Ned platform with the goal of establishing clinical cut-offs for the algorithm. This formative work will inform the creation of a draft decision tree used to algorithmically triage patients in the Ned Clinic.

On completion of this work, we will convene a half-day virtual consensus meeting to validate the proposed symptom inputs and consequent alert and advice outputs. Fifteen knowledge experts will be recruited based on their clinical and research expertise in PCa survivorship to attend the meeting. We will use the nominal group technique to develop consensus on decision nodes and pathways[40]; this will involve two facilitated rounds of voting on various components of the algorithm, with consensus achieved when 75% of participants endorse a given answer.

Following this consensus meeting, expert responses will be used to develop a prototype algorithm for validation and refinement by 10 patients and 10 providers through semi-structured interviews. Providers will be asked to review the algorithm and provide feedback on the appropriateness of suggested alerts. Patients will be asked to validate decision pathways that lead to direct intervention from a nurse versus those that can be resolved through supported self-management strategies, as well as to

comment on the format and tone of the symptom inputs and advice outputs.

Completion of all 20 interviews will result in the identification of core survivorship symptom inputs from patients, valid rules for alert generation, and appropriate survivorship self-management advice to embed in the Ned platform.

Design and development of the Nurse Ned service model

In addition to the design of the Ned Clinic triaging algorithm, the service will also undergo a redesign to become a nurse-led service model. This redesign will involve three main phases (Immersion, Design, Launch) and will be guided by the service design approach—a phased and human-centred design process used to create services that deeply consider the needs and experiences of end users.[33 41]

The initial immersion phase will involve qualitative research (eg, shadowing, interviews) to uncover the lived experience of nurses at all five centres. In the design phase, codesign workshops will be conducted with representative stakeholders (eg, patients, caregivers, nurses) to explore different concepts and approaches to creating a nurse-led service model.

Based on the results of these workshops, design prototypes will be created and will undergo rigorous usability testing. The product will then be committed to code and undergo quality assurance. The service model will also be finalised and documented as a service blueprint to share the insights and details of the nurse role with those involved in this care pathway.[41 42]

In the launch phase, we will identify three oncology nurses to assume the Ned Nurse role. Two of the nurses will work in advanced practice roles including a nurse practitioner for the Ontario sites and a clinical nurse specialist in Calgary. The third will be a specialised oncology nurse working in a non-advanced role in Halifax. Inclusion of the three types of specialised oncology roles at an advanced and non-advanced level of practice will permit evaluation to determine the most appropriate role for the Ned Nurse.

Once appointed, our Ned Nurses will (1) map all local services that are potentially accessible to survivors, (2) contact identified services to ensure availability and establish referral pathways, and (3) prepare administrative documents and processes in anticipation of the virtual clinic launch.

IMPLEMENTING THE NED CLINIC
Methods

The implementation of five Ned Clinics across Canada will follow the four phases defined in the Quality Implementation Framework.[43]

Phase 1 comprises the previously described service design activities that will minimise the disruption to each clinic site and identify site characteristics that may have implications for implementation success. Phase 2 will initiate the formation of implementation teams (ITs) that will be accountable for ensuring that effective service adaptations and evidence-based implementation methods are used to implement each Ned Clinic as intended.[44] These ITs will be made up of nominated site personnel who are critical to the success of the project, human factors specialists, and project management personnel. Phase 3 will involve mobilising ITs to train Ned Clinic staff and operationalise workflows. ITs will work to create an implementation plan tailored to the specific context and culture of each clinic. Implementation progress will be monitored through regular videoconferences with each IT, core team audits, review of technical support tickets, site visits, and remote technical support. Within this structured approach, we will also embed cycles of quality improvement to adapt the intervention and uptake strategies where needed. Phase 4 will consist of aggregating the data from all participating sites, harmonising data sets, and conducting analyses. We will assess sustainability by revisiting each site 3 months after the completion of the active implementation phase. Through discussions with ITs, we will also ascertain how they have continued to run the virtual clinics and what has happened since the end of the active phase of the study.[45]

Data collection

Semi-structured interviews will be conducted at study end with a maximum of five virtual clinic staff (eg, clinical leads, managerial staff) from each of the five study sites. Interviews with clinic staff will be conducted in person or by telephone and will focus on identifying factors that helped or hindered virtual clinic deployment. Interviews will also be conducted with a maximum of 12 men at each of the five study sites and will include both men enrolled in Ned Clinic (eight per site) and men in the historical control group (four per site) for a total of 60 interviews. We will purposefully select a representative sample of men who vary by age, treatment history, time since treatment, and adherence to clinic tasks. Interviews with patients will focus on how men experience post-treatment follow-up care, their interactions with virtual clinic staff, and their assessment of clinic services.

Implementation outcome measures

The implementation of the Ned Clinics into routine oncological practice will be evaluated using Proctor *et al*'s framework of implementation outcomes.[46] We will measure eight framework-guided outcomes using a combination of quantitative, qualitative, and observational research methods. Table 1 presents our full list of implementation outcomes alongside their data collection strategy and frequency of administration. The identification of barriers and facilitators to implementation will be accomplished through semi-structured interviews structured and analysed using the Consolidated Framework for Implementation Research (CFIR).[47] The appropriateness of the three nursing roles will be examined in various dimensions. Role autonomy and interprofessional

Table 1 Ned Clinic implementation outcomes

Outcome	Measure
Acceptability the perception among implementation stakeholders that the Ned Clinic is agreeable, palatable, or satisfactory	Post-implementation interviews with clinic staff (n=25) and patients (n=40) across all five study sites
Adoption the intention, initial decision, or action to try or employ the Ned Clinic	
Appropriateness the perceived fit, relevance, or compatibility of the Ned Clinic for a given practice, provider, or patient; and/or perceived fit of the clinic to address fragmented survivorship care	
Sustainability the extent to which the Ned Clinic is maintained or institutionalised within a service settings' ongoing, stable operations	
Cost the cost impact of implementing the Ned Clinic	Clinic administrative logs
Feasibility the extent to which the Ned Clinic can be successfully used or carried out within a given setting	Monthly videoconferences with Implementation Teams Quarterly audit and review of technical support tickets Annual observational site visits Log data analytics Clinic administrative logs
Fidelity the degree to which the Ned Clinic was implemented as it was prescribed in the original protocol or as it was intended by the clinic developers	Monthly videoconferences with implementation teams Quarterly audit and review of technical support tickets Annual observational site visits Log data analytics Clinic administrative logs Checklist of fidelity to implementation service design
Penetration the integration of the Ned Clinic within a service setting and its subsystems; also referred to as reach	The absolute number, proportion, and representativeness of PCa patients using virtualsed clinic services from the total population of PCa patients within each cancer centre

Ned, no evidence of disease; PCa, prostate cancer.

collaboration will be assessed through documentation of interactions with other providers, patient referrals to other providers, and the number of consultations with oncologists. Consultation with patients, nurses and oncologists will help identify the nursing expertise necessary for the Ned Nurse role, patient/nurse satisfaction with the virtual care model, and implementation issues specifically associated with a particular nursing role.

Data analysis

Audiorecordings of each interview will be transcribed verbatim. Two members of our research team will follow the framework method of thematic analysis and coding based on CFIR constructs.[48] The multiple participating sites also allow for the comparison of barriers and facilitators between sites, which will lead to more generalisable knowledge. CFIR constructs at each deployment site will be assigned a valence (−2 to −1, 0, +1, +2) to quantify their positive, negative, or neutral impact on implementation success. Valences will be compared with identify how CFIR constructs differ between sites with low and high implementation success. Valence ratings will be determined through a deliberate consensus process among the research team members involved in the thematic analysis.[47]

EFFECTIVENESS OF THE NED CLINIC
Methods

The effect of the Ned Clinics on patient outcomes will be assessed by comparing the clinical outcomes of 300 men enrolled across the five virtual clinics with the outcomes of a pre-implementation cohort of 300 men, using a repeated measures design. The evaluation will use a pragmatic approach in a real clinical setting, allowing for flexibility in terms of how virtual clinic implementation and delivery may impact outcomes.[15 49] Figure 2 presents the effectiveness study flow diagram.

Comparator group

Across our five study sites, we will recruit a historical control group of 300 men from the cohort of PCa survivors receiving specialist-led follow-up care during the 1-year study period immediately prior to the introduction of the Ned Clinic. Men in the control group will receive specialist-led follow-up care for the duration of this study. To control for exposure and time spent engaging with health technology, as well as the behaviour of reflecting on outcomes and submitting monthly in-app surveys, they will also receive access to the current Ned patient-facing app. Through the app, they will be able to view PSA results, log PROs monthly, and review symptoms in
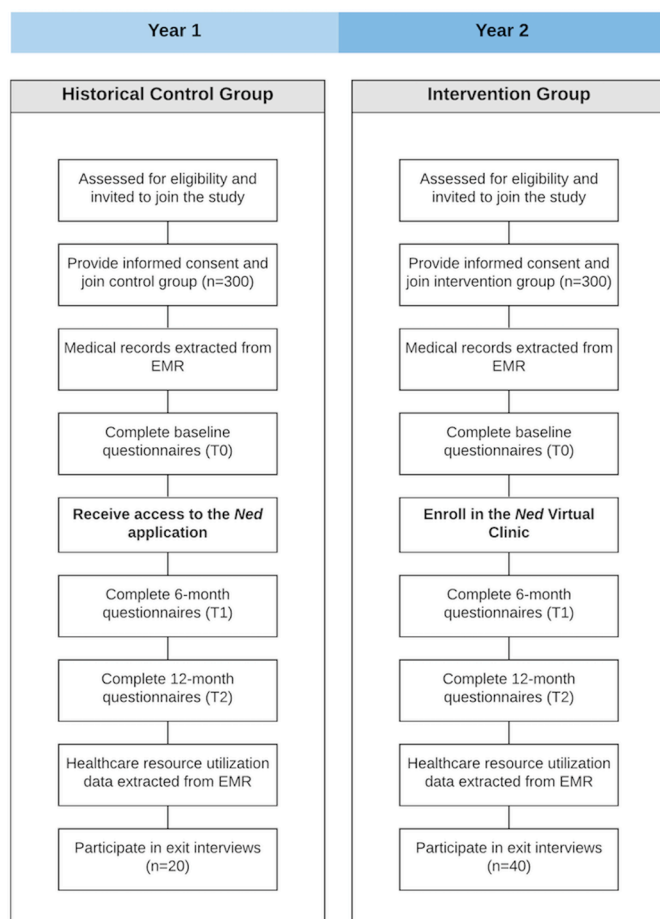
Figure 2 Effectiveness study flow diagram. EMR, electronic medical records.

context; however, they will not receive virtual care from the Ned Nurse.

Eligibility criteria

Men are eligible to participate in this research if they meet the following criteria: (1) 18 years of age or older, (2) completed curative-intent treatment, (3) receiving standard PCa post-treatment follow-up care, (4) no evidence of disease at the time of enrolment, (5) low risk of recurrence as determined by their treatment specialist, and (6) adequate English language ability (or a caregiver willing to provide translation) to complete study activities as determined by the site research assistant (RA) in charge of enrollment. If amenable, both patients and their caregivers will be enrolled in this research.

Data collection

Data will be collected from patients at baseline study entry (T0), 6 months post-baseline (T1), and 12 months post-baseline (T2). Once baseline data collection is completed, intervention group patients will be enrolled into the Ned Clinic. RAs will access site-specific EMR systems to extract clinical and treatment data (eg, cancer stage, grade, date of diagnosis, and treatment received). They will administer all outcome measures through the secure Research Electronic Data Capture (REDCap) site

Table 2	Ned Clinic effectiveness outcomes	
Outcome	**Measure**	**Time**
Unmet need (primary outcome)	Cancer Survivors' Unmet Needs[50]	T0*, T1†, T2‡
Health status	EQ-5D-5L[57]	T0, T1, T2
Prostate cancer health-related quality of life	Expanded Prostate Cancer Index Composite Short Form-26[58]	T0, T1, T2
Overall health-related quality of life	Functional Assessment of Cancer Therapy-Prostate[59]	T0, T1, T2
Psychological well-being	General Health Questionnaire-12[60]	T0, T1, T2
Activation to self-manage	Patient Activation Measure-13[61]	T0, T2
Satisfaction with care	11 questions regarding experience and acceptability of follow-up care[16]	T0, T2
Health behaviours	Questions to assess health practices (eg, smoking, fitness, alcohol consumption)	T0, T2
Demographic and clinical characteristics	Electronic medical record and survey data collection will be used to capture the following data points: clinic site, age, ethnicity, education, employment, marital status, living arrangement, caregiver availability, technology use, time since diagnosis, time since treatment completion, treatment type, cancer stage and grade, comorbidities, healthcare resource utilisation	T0

*T0: baseline (ie, at study start; immediately after the provision of informed consent).
†T1: 6 months post-baseline.
‡T2: 12 months post-baseline.

hosted at the Princess Margaret Cancer Centre. Patients will be prompted by research staff to log into REDCap at all three time points to complete study questionnaires.

Effectiveness outcome measures

This evaluation aims to compare the nurse-led Ned Clinic with specialist-led follow-up care across a series of outcomes that reflect the anticipated impact of virtual clinic services. Measures of unmet needs, health status, treatment side effects, cancer-specific quality of life, overall quality of life, psychological well-being, and health behaviours will be collected at three time points throughout the study (ie, T0, T1, T2). Additionally, demographic and clinical characteristics will be collected

at study start, and satisfaction with follow-up care at study end. The primary effectiveness outcome for this evaluation is unmet need, assessed using the Cancer Survivors' Unmet Needs (CaSUN) measure.[50] Unmet need has been identified as an important patient-centred indicator of effective virtual survivorship programmes.[16] The CaSUN assesses unmet needs across information, patient care, psychosocial, physical, and sexual domains. The 35-item scale has good acceptability, internal consistency (Cronbach's α=0.96), construct validity, and has been used in numerous PCa survivorship trials and observational studies.[51–53] Table 2 presents our full list of effectiveness outcomes alongside their data collection strategy and frequency of administration.

Sample size calculation

The sample size for this effectiveness evaluation is calculated to achieve at least 90% power in two-sided tests to detect a moderate statistical effect size of 0.3 or larger in the total CaSUN score at 12 months. This effect size is derived from a recent large-scale evaluation of a nurse-led remote patient monitoring programme for PCa survivors that demonstrated significant improvements in the CaSUN.[16] It translates to a meaningful clinical change in strength and total number of unmet needs. Based on a calculated sample size requirement of 470 participants (ie, 235 per group) and an estimated attrition rate of 20%, we aim to recruit 120 participants (ie, 60 per group) at each of our five study sites, for a total of 600 participants (ie, 300 per group).

Data analysis

Descriptive analyses will first be conducted on baseline demographic and clinical characteristics to compare differences between study groups. We will conduct regression analyses for each of our outcome measures at 6-month and 12-month time points separately and with control for relevant baseline covariates (eg, study site, time since treatment completion, comorbidities, demographics). A mixed analysis of variance will be conducted to compare differences in outcomes at 6 and 12 months between participants enrolled in the Ned Clinic and those receiving specialist-led follow-up care in the active control group. Lastly, we will perform statistical analyses to ascertain subgroups for which virtual care is effective or undesirable. Exploratory regression analyses will also be conducted to model subgroup effects.

Patient and public involvement

We have engaged patients throughout the conceptualisation of this research.[54] Our patient partners and their support group peers at Prostate Cancer Support (PCS)[55] validated the rationale for pursuing this research and directed research aims to address the gaps that they perceived to be of highest priority. Moving forward, we will continue to engage patients in the research process through (1) establishing a Patient Council that will receive biannual progress reports and provide guidance regarding any necessary action; (2) attending PCS support group meetings to present research progress and seek feedback; and (3) validating design artefacts and development features and functionality with patient partners on an ad hoc basis. We aim to promote mutual respect and minimise perceived power differentials between patient partners and researchers; thus, patient partners will receive financial compensation for their involvement in research activities.

ETHICS AND DISSEMINATION

Ethics considerations

Ethics approval for this research programme was granted by the Clinical Trials Ontario Research Ethics Boards (CTO ID#3238). The design of the Ned algorithm and Nurse Ned service model was completed in January 2021. The historical control study is scheduled to start in Summer 2021.

Dissemination plan

Our knowledge translation efforts will include diffusion, dissemination, and application approaches to ensure that knowledge is translated to both academic and lay audiences.[56] As such, we will disseminate knowledge through (1) publications in open-access journals; (2) presentations at conferences across numerous knowledge areas; (3) articles in cancer centre and university newsletters; (4) social media posts to highlight completion of research deliverables; (5) a summit for all study sites to share and contrast experiences in implementing their respective virtual clinics and (6) a 3 min video featuring patients and providers who express interest in sharing their experiences with the Ned Clinic.

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