

Final Report

GICS Grants Program 2020/21

Project Title	Feasibility of intra-infusion exercise in a regional chemotherapy day unit
Funding Allocation	\$10,000
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Organisation	Grampians Health - Ballarat (formerly Ballarat Health Services)
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1. Problem Definition

In 2018, the Clinical Oncology Society of Australia (COSA) in conjunction with Exercise and Sports Science Australia (ESSA) released a position statement calling for exercise to be embedded as part of standard practice in cancer care as an adjunct intervention to help counteract the adverse effects of cancer and its treatment.^{1,5} The current service model allows patients to be referred to the Ballarat Health Services (BHS) Exercise Physiology (EP) department for outpatient services, but including exercise within the Chemotherapy Day Unit (CDU) treatment area itself is novel.

In light of the COSA recommendation, BHS EPs working in the outpatient cancer service identified that patients were sedentary for long periods of time while receiving treatment in the CDU. This time provided an opportunity to increase physical activity and give patients' confidence that physical activity is safe to engage in, even with a cancer diagnosis. Education and exercise performed during infusion treatment may improve and/or maintain engagement in physical activity, decrease boredom and reduce fatigue.

The inclusion of EP staff in CDU to set up such a program and determine its feasibility and impact over multiple treatment sessions may increase both inpatient and community-based activity levels.

2. Project Overview and Method

The study aimed to determine the feasibility, acceptability and impact of an Exercise Physiology and Nursing collaborative approach to provide low intensity exercise and education intervention to cancer patients during systemic anti-cancer therapy infusions in a large regional health service.

The study objectives were:

Primary objectives

- Determine the feasibility of low-intensity exercise and education during SACT infusion treatment using the RE-AIM framework.
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Secondary objectives

- Determine safety of low intensity exercise during SACT infusion across treatment cycles for patients with cancer.
- Measure changes of patient confidence to exercise following education and experience of low intensity exercise during SACT infusion.
- Determine the impact of education and low intensity exercise during SACT infusion on overall participation in physical activity outside of infusion times.
- Measure the impact of low intensity exercise during SACT infusion on patient levels of fatigue, boredom, and quality of life.
- Evaluate nursing staff confidence to implement low intensity exercise during cancer treatment infusion for patients.
- Explore the experiences of patients who have participated in low-intensity exercise during SACT infusion.
- Explore the experiences of clinical staff implementing low-intensity exercise during SACT infusion.

Phase 1: Staff Education

Three face to face education sessions were provided by EP to 18 nursing staff between 4 - 11th October 2021. Education included: The benefits of exercise in general, benefits of exercising during cancer treatment, the protocol for the seated exercise regime and outcome measures required for appropriate monitoring and data collection.

Due to issues with staff leave and rostering, not all staff were able to attend face to face education sessions. To adapt and increase reach for education of CDU nursing staff, additional resources were therefore created regarding the recruitment, screening and exercise protocols with soft copies disseminated via email through Nurse Unit Managers (NUM)s and hard copies placed in a resource folder in CDU.

Baseline data on staff confidence to set up the CDU exercise protocol was measured. A total of 12 staff completed this measure at baseline, indicating a confidence level of 6.5/10 (0 representing lowest confidence, 10 representing highest confidence).

Unfortunately, there was low uptake in the re-evaluation of this variable, with 1 staff member completing their confidence at 6-week post implementation.

Although measures around changes in confidence were unable to be described through these measures, staff focus groups in phase 3 were able to inform staff perceptions of the intervention and future planning.

Phase 2: Pilot

Thirty-three patients were referred, with 10 patients recruited and completing the original protocol. The data for this is currently being cleaned and prepared for analysis.

EP staff completed the initial screening into the project and set up of the initial exercise session on two set days of the week, whilst mentoring nursing staff to implement and monitor the intervention for subsequent sessions. An Allied Health Assistant (AHA) was engaged to assist in the set up of equipment and patient survey data collection during this phase.

Regular contact was made with the nursing staff leaders to assess the effectiveness of the protocol and changes made based on feedback gained from the nursing team.

A number of issues were encountered with referrals due to COVID-19 related nursing staffing levels and perceived barriers to patients starting their cancer treatment. An amendment was made to the protocol to allow; referrals to be emailed to a research trial specific inbox to decrease paperwork, and secondly allow patients to be referred at any time in their treatment to avoid being overwhelmed with information at the start of treatment.

Additional training of nursing staff and use of AHA hours to assist with pedal set up was instigated following an incident transferring the pedals from the trolley. The internal Riskman protocol was followed after a minor back injury was reported by a nursing staff member. OH&S staff assessed the pedal transfer as a two-person lift. The set up protocol was updated and disseminated to staff. No ongoing injury was sustained.

Phase 3: Qualitative

A face to face focus group of 12 nursing staff was completed in August 2022.

Seven individual phone interviews were undertaken with participants who had completed the CDU exercise protocol.

Focus group data was audio recorded and transcribed, and underwent thematic analysis. Patient interviews will follow the same method once data is compiled.

Overall, the program was very well received, staff had a preference to extend the program to five days per week and felt that the patients responded positively (both clinically and attitudinally) to the program. The educational resources were highly valued and often referred to, however staff often sourced education and support from peer-based education and interactions.

The identified enablers and barriers to conduction of the CDU exercise program were as follows:

Enablers	Barriers
<ul style="list-style-type: none">• EP delivered education sessions• Written resources• Peer support/teamwork• Ease of seeing who was booked in to exercise• EPs accessible and responsive• Equipment proximal to CDU and easy to set up	<ul style="list-style-type: none">• Not all staff received education• Busy work environment• Difficult or unable to reschedule patients to available program days• Two person lift for pedals• Cluttered areas may cause trip hazard when in use• Storage of pedals needs consideration

Resultant from the staff feedback, an amended protocol to continue to offer the service in a sustainable way as part of standard care at BRICC has been developed. This new protocol has now been sent to nursing staff and feedback is pending.

The EP screening will include questions specific for CDU exercise. BRICC Head of Medical Oncology has indicated medical clearance will not be required prior to accepting referrals, as now part of standard care, rather a courtesy email will be sent to inform medical oncologists of their patients' participation in intra-infusion exercise. Therefore, as long as inclusion criteria are met during screening initially with EP and then at each session with nursing staff, patients can engage in CDU Exercise. Nursing staff will screen and monitor all inpatient exercise sessions.

This collaborative and transdisciplinary approach to continuation of the program will work towards a sustainable and potentially transferrable program. Proposed changes for sustainability include:

- Extending the CDU exercise program from two days per week to five days per week
- Refining educational resources for staff
- Establishing nursing champions who can assist in promotion of the exercise program within the CDU, as well as providing peer support and education to nursing colleagues.

This project successfully identified the feasibility and acceptability of the CDU exercise program. The program has been well received by both staff and patients, with a preference to expand the program to more days of the week. Although data analysis is ongoing, preliminary indicators show that this program permits further refining and evaluation.

A number of changes to our planned protocol were required during the course of the project. COVID 19 impacted the consistency of staffing levels and overall demands on staff in CDU, making implementing a new task challenging.

Due to low recruitment of patients initially, an amendment to the protocol was endorsed to make the referral process more streamlined. An EP BRICC email account was created to accept direct referrals from nursing staff via email rather than sending paper forms through the BHS central intake department. The referral criteria was also broadened with the capacity for patients to be accepted at any time during their treatment, not only at initial diagnosis/ start of treatment. This in turn also modified the EP triaging protocol. All EPs involved in the oncology research project had access to the group email account to ensure timely response to referrals.

During the height of COVID 19 with case numbers surging, it was noted a number of bank nursing staff were filling shifts and had not been involved in the initial training sessions. Additional sessions were offered and support resources created for nursing staff as follows: face to face training with supporting documents in soft copy and hard copy format, updated referral protocols, screening processes, and hard copies of patient surveys in case of difficulty with internet/ IT.

Considerable EP time was used during the initial screening and clearance processes, to follow up both patients and oncologists. EP staff also experienced significant down time waiting for initial exercise program starts in CDU. Often patients were not ready at their allocated time due CDU workload or change to booking times. Although unavoidable at times, it impacted EP scheduling and workload in other programs. Short term over this project, it was managed however would not be sustainable in the current format moving forward unless specific inpatient EFT is allocated.

To assist in both of the above points, the program was only offered on two days of the week, Mondays and Tuesdays. An AHA was also used to assist in setting up equipment and survey data collection to take the pressure off nursing staff while they were starting the implementation of the trial and while nursing staff confidence increased. EP staff ensured they 'floated' in CDU to check in with nursing staff, even if no new patients were booked. This helped to support nursing staff and gave an opportunity to ask questions, request additional assistance if required.

3. Stakeholders, consultations & communication

Patients:

- Part of the evaluation asked patients to provide thoughts and feedback on how their exercise session went following each appointment.
- Patients were offered to participate in an individual interview regarding their experience in the program. This information will be used to further shape the program to optimise patient experience and outcomes. Once analysed, participants will be sent a summary of the key findings.

Staff:

- The GICS consumer advisory group, nursing and oncology staff were engaged in the planning and execution phases of the project via online meetings, emails and face to face interactions with senior EP staff. These stakeholders were also involved in the review of educational materials to be disseminated to staff.
- When issues were identified by EP staff, feedback was sought from key staff in the extended oncology team before any changes to protocols were made.
- Nursing staff participated in a focus group at the end of the pilot phase to help provide feedback and help influence further protocol changes going forward. This contributes to the sustainability and impact of the program.
- Following the evaluation phase of this project, the protocol and educational approaches have been revised. Stakeholders in the form of the EP team, CDU nursing team and oncology staff will have the opportunity to review and contribute to the shaping of this proposal.

4. Budget

Item Expenditure	GICS Grant \$	Expenditure \$
Grade 2 EP (\$59.10/hr x 100 hrs)	\$5,910	\$13,001.60
Allied Health Assistant	\$1,802.40	\$2009.81
Transcription	\$2,287.60	\$2,287.60
Academic Mentor		\$3414.80
Equipment		\$24,339.44
TOTAL	\$10,000	\$45,053.25

5. Monitoring & Evaluation

Regular EP team meetings throughout the project, involving BHS Allied Health research team, oncology and nursing staff as required. Identifying need to modify protocols when working in real time.

Overall 33 patients were referred in for intra-infusion exercise with 10 participating. Eight were unable to change treatment bookings onto trial days, seven declined the program after the initial referral, four had completed or had a change in their treatment, two were deemed to not have met inclusion/exclusion criteria, two were admitted to the hospital as an inpatient and therefore were unable to participate.

Nurse perceptions:

Nursing staff focus group data was transcribed and thematically analysed. This data was included in a poster presentation at the 2022 National Rural and Remote Allied Health Conference.

Patient perceptions:

Interviews have been completed and data is currently being compiled.

Patient outcomes:

Data collection was completed in December 2022 and descriptive analysis is currently underway.

Summary presentations have been completed in 2022 at the Western Alliance conference as part of the STaRR emerging researcher group.

Overall the intra infusion exercise trial has been well received by both patients and nursing staff. An exercise option during CDU will continue to be offered as part of standard care.

6. Sustainability / Future Direction

The protocol has been adapted with feedback and program sustainability in mind. We are currently awaiting secondary feedback on this protocol from CDU nursing staff.

As there is no ongoing funding for inpatient EP services, nursing staff will perform inpatient screening and supervision of all CDU exercise sessions as per the research protocol. The EP role will include initial screening and education of the patient, and support of nursing staff. Specific nurse 'Exercise Champions' will be mentored.

Moving forward, patients will be offered both inpatient (CDU exercise) and outpatient EP services as part of standard care at Grampians Health- Ballarat.

7. Project Authorisation

Signature	
Name of Executive Director	Date / /