

A Outpatient Services

A1 AMBULATORY CARE CENTRE

A1(c) Cancer Centre Chemotherapy Treatment Unit

A1(c) CANCER CENTRE CHEMOTHERAPY TREATMENT UNIT

A1(c).1 SERVICE DESCRIPTION

A1(c).1.1 Scope of Clinical Services

This section A1(c) sets out the requirements for the provision of cancer chemotherapy treatment at the Facility to be achieved or accommodated by Project Co in providing the Works and the Services.

The type of chemotherapy treatment regime that the patient will undertake will be determined after initial consultations with the oncologist in the Cancer Centre General Clinic. Chemotherapy is often given in cycles that include treatment periods alternated with rest periods. The length of the patient’s cycle and the number of cycles in the treatment plan will also be determined by the oncologist.

Chemotherapy is given in several ways: intravenously (through a vein), orally, through an injection (i.e. intrathecal, intramuscular, subcutaneous, etc.), or topically (applied on the skin). The most common method of delivering chemotherapy is intravenously (IV), through a vein. This is done either in the form of a fluid drip or as an IV push. Procedures range from 15 minutes to 10 hours or longer.

The range of procedures and activities to be carried out for adult patients within this component include, but are not limited to:

- Chemo infusions and pushes
- Examinations
- Intrathecal and subcutaneous injections
- Lumbar punctures
- PICC line access/dressing/removal
- Patient education

Oncology pharmacy services will be provided by the Cancer Centre Pharmacy located integral to the Chemotherapy Treatment Unit.

The table below illustrates the timeline for the expansion of workload:

Table A1(c)-A: Workload Indicators for Chemotherapy from 2007 to 2015

	2007	Projected Year 2010	2015
# Chemo Chairs	12	12	12-18
Hours of Operation/Day	8	8-10	8-10

Note: The Project Co will evaluate the cost benefits of building to maximum capacity (18 chairs) in shelled space, or simply phasing construction as indicated in the table above.

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A1(c).1.1.1 Current Trends

In providing the Works and Services, Project Co shall take into account the following trends:

- *Increased workload due to the continued shift from inpatient to outpatient chemotherapy and increasing complexity of treatments.*
- *New labour intensive therapies such as biologic treatments and multi-drug chemotherapy will generate longer stays in the chemotherapy area and the need for isolation due to infection diseases.*
- *Involvement with clinical trials will continue to expand.*
- *An increase in the number of new cases attributable to cancer will continue to rise as the Canadian population increases and ages.*
- *An increase trend towards combination therapies (i.e. chemotherapy in combination with radiation therapy).*

A1(c).1.2 Scope of Education Services

The Chemotherapy Treatment Unit will provide clinical resources for rotating nursing students in clinical placements from university and community oncology programs, trained nurses in locum, residents, medical students and family practitioners, up to 4 at a time.

A1(c).1.3 Scope of Research Services

Any clinical research activities will be conducted by the Clinical Trials staff in the General Clinic or by chemo nurses in the unit conducting research therapy.

A1(c).1.4 Specific Exclusions

This specification excludes chemotherapy services provided elsewhere, including:

- Pediatric chemotherapy services provided in the medical/surgical day care area or the child health centre in the children's care area of the Maternal Child Program (see section B5 Maternal Child Program)
- Offices for process leader (see section A1(f) Cancer Centre Professional Staff Offices)

A1(c).2 OPERATIONAL DESCRIPTION

A1(c).2.1 Minimum Hours of Operation

The Chemotherapy Treatment Unit will be open 8 to 10 hours Monday to Friday (depending on patient workload), and one Saturday per month.

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A1(c).2.2 Patient Management Processes

A1(c).2.2.1 Central Reception/Registration/Booking

The majority of patients will access the Chemotherapy Treatment Unit via the outpatient entry. New patients are to report to the Ambulatory Care Centre (ACC) central reception desk for assistance. The role of the central reception located at the entrance will be to assist with general enquires. Patients will then be directed to the Chemotherapy area.

Patients arriving early, relatives/care givers waiting for patients in Chemotherapy, and patients in between consultations will utilize the central waiting area adjacent to the central reception in ACC.

A1(c).2.2.2 Reception/Registration/Booking in Chemotherapy

Once the decision to treat a patient with chemotherapy has been made following consultations in the Cancer Centre General Clinic area, a patient will be scheduled for a chemotherapy teaching and treatment appointment.

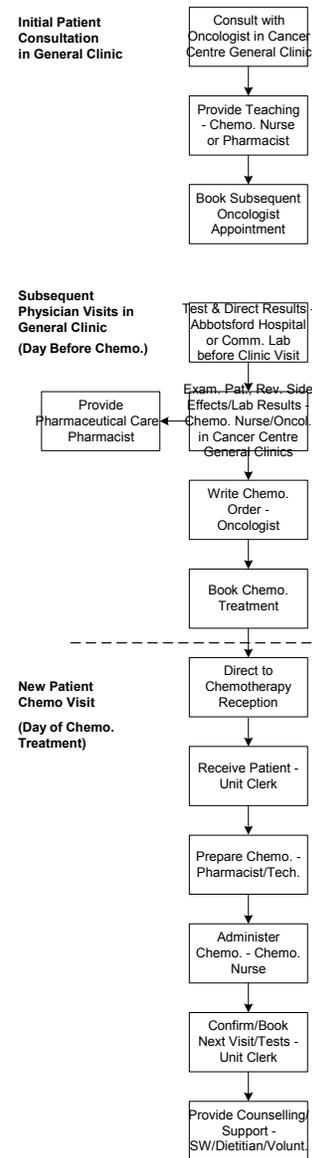
All patients (and/or accompanying porters and escort staff), clinicians, and visitors to the department are received at a reception desk in Chemotherapy. Patient information is checked against existing computer and manual records, and a variety of other tasks, including telephone call handling, appointment scheduling, patient preparation, are also undertaken here. All chemo appointments will be scheduled through the clerk. Patients who arrive by stretcher for treatment will be taken directly to the treatment area.

A1(c).2.2.3 Waiting

Patients and visitors will be directed to wait in a waiting area, close to the reception until they are called for their appointment. Relatives or friends will accompany most patients and may sit directly with the patient for the duration of a treatment. The patient will generally stay in his/her street clothes. Clerical or nursing staff from the Chemotherapy area will call patients at the required time and will be escorted to the open recliner chair area, or bed cubicle.

A1(c).2.2.4 Preparation Prior to Chemotherapy Treatment Appointment

On the day before their chemotherapy treatment, patients may be examined by their oncologist in the Cancer Centre General Clinic area. Patients will have lab work completed the day before their clinic visit with the oncologist to reduce waiting times. This may be done at the Abbotsford Hospital laboratory or at testing facilities in the patient's home community. Results are available electronically on the same day. At this clinic visit, the oncologist will also review lab



"2-Day Model"
Patient Flow Diagram

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work at that time and simultaneously enter a chemo order to the Cancer Centre Pharmacy. A chemotherapy treatment appointment is then scheduled for the day after the clinic visit.

A1(c).2.2.5 Chemotherapy Treatment Area

Patients undergoing chemotherapy procedures and other infusion cancer treatments will be accommodated in either beds or recliner chairs. Some patients will require relatively low levels of nursing care, while others will require close nursing care and access to resuscitation equipment. Chemotherapy will be administered as a push-injection, involving a relatively short duration of stay, or as an infusion over hours, requiring an extended length of stay. Durations will vary depending on the nature of the drugs/protocols. Patients generally require close nursing supervision to monitor for allergic reactions and access to resuscitation equipment.

A1(c).2.2.6 Teaching Room

Utilized for patient family teaching and as a quiet room by Chemotherapy and Pharmacy staff. Chemo nurses and/or pharmacists review chemotherapy treatment regime with patients/family and address questions/concerns.

A1(c).2.3 Patient Information Management

Refer to Output Specifications, Section 3: Non-Clinical Services, subsection D1 Information Management; Section 5: Design and Technical, subsection 5.3.17 Technology and Communication Systems; and Section 6: IT/Tel Services.

A1(c).2.4 Staff Work Processes

A1(c).2.4.1 Preparation

Prior to the first chemotherapy treatment visit each patient will have had a consultation with an oncologist, who will have planned the treatment course for the patient. The patient will also have seen a nurse who will conduct a nursing assessment and also will screen for referral to other health professionals. The patient will receive information about cancer treatment, including the drugs and side-effects. The mechanism for sharing this information may take the form of a group teaching session (done by a nurse or a pharmacist) or an individual consultation. The structure will be dependent on the patient/family need. At subsequent physician visits (General Clinic in ACC) the patient will have blood work performed the day before their clinic visit to ensure that results are available for continued treatment planning. At this visit the physician will write orders and they will be transmitted to Pharmacy. This timely transmission ensures that the pharmacist has enough time to perform all safety checks prior to the chemotherapy treatment appointment which is scheduled for the day after the clinic visit.



Process Flow Diagram

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A1(c).2.4.2 Care Delivery

All patient information will be accessed from the electronic chart. The care station includes staff workstations and must be located in close proximity to the treatment area to allow staff to monitor patients. The chart goes to pharmacy for the safety checks to occur (explained in the pharmacy workflow section C5 Pharmacy Services). It is then kept in the chemotherapy care station for that cycle of the patient's treatment. Patients' charts are then sent back to IM until the next treatment cycle.

Whether the chart is electronic or paper, a nurse charting area right beside the patient is necessary. It has to be of sufficient size to allow the comparison of the patient identification, the drugs, the protocols, the patient blood work and then the final drug calculations. This is the last safety check before the patient is administered the drug. This workstation also has to act as a support area for the nurse to put supplies on while starting an IV on a patient or when they may be accessing a central venous device or any other procedure.

Care station would also include staff workstations and be located in close proximity to treatment areas to allow staff to monitor patients.

At the chemo reception desk the unit clerk duties include but are not limited to:

- checking the charts to ensure bookings and/or timing of visits are correct
- ensuring that the patient is given their lab forms for their next visit
- checking the patients in as they arrive for their chemo and notify the nursing staff
- maintaining the "work in" list and move/re-book patient appointments in order to fit all the patients in that need treatment
- notifying patients of changes in their schedules
- re-booking appointments of patients who are delayed because of low counts, etc.
- booking PICC line insertions, Portacaths, lab in daycare
- paging the physician on-call in case of drug reactions

A1(c).2.4.3 Post-Treatment

Following chemotherapy treatment, the patient will confirm or book their next visits and required lab tests with the chemo clerk.

A1(c).2.4.4 Chemotherapy Drug Dispensing

Chemotherapy drugs will be prepared in the Cancer Centre Pharmacy then passed through to a nurse's work area in the Chemotherapy Area. A large "Dutch" door between the nurse's work area and the Pharmacy will be provided for passing drugs and for consultations with the pharmacists. A small stock of medications will be kept in a medication cupboard at the nurse's station in this component.

A1(c).2.5 Material Services

Refer to Output Specifications, Section 4: Facility Management Services, subsection E7 Material Services, and Section 2: Clinical Services, subsection C8 Sterile Processing Services.

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A1(c).2.6 Linen/Housekeeping Services

Antineoplastic wastes will be bagged separately by Housekeeping staff and kept in a soiled holding room for removal by Housekeeping. Special handling requirements for the following areas are required:

- Chemotherapy waste
- Chemotherapy sharp waste
- Pharmaceutical waste
- Confidential waste disposal
- Chemotherapy spill clean-up
- Sharp disposal

Also refer to Output Specifications, Section 4: Facility Management Services, subsections E5 Housekeeping Services and E6 Laundry/Linen Services.

A1(c).2.7 Equipment Asset Management

Refer to Output Specifications, Section 4: Facility Management Services, subsection E2 Biomedical Engineering; and Section 7: Equipment.

A1(c).3 ACTIVITY INDICATORS

The table below summarized the projected activity for chemotherapy services which must be addressed by Project Co in performing the Works and the Services:

A1(c).3.1 Hospital Activity (Incl. in Cancer Centre Activity below)

A1(c).3.2 Cancer Centre Activity

Unit	Projected Yearly Activity With 12 Chairs Operating 10 Hours/Day
Systemic Therapy	
New Chemo Starts ¹	600
Chemotherapy Visits ² (incl. Chemo Starts)	8,400
Non-Chemotherapy Procedures ³	1,680

¹ Chemotherapy Start (Parenteral) defined as the number of new oncology patients where parenteral chemotherapy treatment was initiated for the first time for a new disease condition. (A subset of chemotherapy visits).

² Chemotherapy Visit (Parenteral) defined as the number of patient visits made to the Chemotherapy Treatment Unit for parenteral chemotherapy administration. This statistic includes the number of chemotherapy starts.

³ Includes PICC line access/dressing/removal, lumbar punctures, examinations, etc.

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A1(c).4 PEOPLE REQUIREMENTS

This component will have a total staff complement in the range of 8 FTE, consisting of 1 clinical nurse leader, 5 registered nurses, and 2 unit clerks.

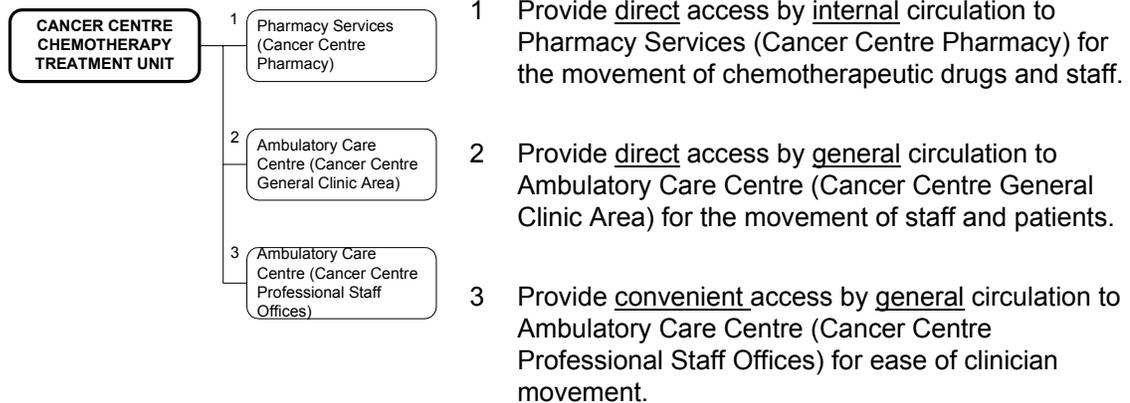
It is anticipated that the key functional areas in the component will need to accommodate the following maximum number of people.

Functional Areas	Patients	Staff	Visitors	Others	Total
Reception/Waiting Area	5	2-3	5	0	12-13
Open Recliner Chair Area	12	2-4	8-10	1-2	23-28
Bed Cubicles	4	2-3	4	1-2	12-14
Support Services/Staff Work Areas	0	3-4	0	1-2	4-6
Teaching Room	1	1	1-2	0	3-4

A1(c).5 DESIGN CRITERIA

A1(c).5.1 Key External Relationships

The following key relationships will be achieved in the priority order as numbered for the purposes stated:



A1(c).5.2 Key Internal Relationships/ Environmental Considerations

The following must be achieved:

A1(c).5.2.1 Environmental Design

The emotional and physical stress of the patients, as well as their families/friends, will be taken into consideration during the design of the environment in the Chemotherapy area. Create an environment conducive to patient relaxation, privacy and confidentiality. Provide a

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comfortable, non-technical type of atmosphere using music and possibly television as diversions.

The bed/chair area will be located away from high traffic areas. Special attention will be given to use of screens and arrangement of recliners and beds to minimize views and acoustics from one patient area to the next.

There must be an external view to provide relief/distraction during the patient's stay.

Flooring, walls and ceiling will be resistant to chemo spills from the IV solutions.

Also refer to Output Specifications, Section 1: Key Site and Building Design Criteria, subsection 1.2.5.1 Healing Environment.

A1(c).5.2.2 Ventilation

Patients in this area will experience nausea and will be extremely sensitive to any odour. The area will be well ventilated to eliminate any odours. The space around the beds/chairs will be sufficient enough to allow for curtains.

Also refer to Output Specifications, Section 5: Design and Technical, subsection 5.3.15.14 Heating, Ventilation and Air Conditioning Systems.

A1(c).5.2.3 Noise Control

Use sound absorbing materials to reduce ambient noise level. All washrooms will be soundproof.

Also refer to Output Specifications, Section 1: Key Site and Building Design Criteria, subsection 1.2.5.4 Acoustics.

A1(c).5.2.4 Nurse-Patient Visibility

The care station will act as the central control point within the Chemotherapy area. All adult IV therapy patients in bed cubicles or in recliners in an open area must be directly observable from the care station.

A1(c).5.2.5 Bed Cubicles and Recliner Chair Area

Recliner chairs can be arranged in clusters of 2 chairs (i.e., provide partition or divider between every second chair).

A1(c).5.2.6 Wheelchair/Stretcher Accessibility

All patient care facilities in this component will be wheelchair accessible, and allow for ease of movement of stretchers.

Also refer to Output Specifications, Section 1: Key Site and Building Design Criteria, subsection 1.2.4.7 Design Standards for the Disabled.

A1(c).5.2.7 Special Technical Requirements

Provide fully dimmable lighting in all patient areas.

Provide sufficient power capacity, air conditioning capacity, and access for future expansion of service.

Also refer to Output Specifications, Section 5: Design and Technical.

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A1(c).5.2.8 Pass-Through to Pharmacy

Provide a pass-through to the Cancer Centre Pharmacy preparation area from the nurses work area in the Chemotherapy Treatment Unit for the movement of chemotherapy preparations. This pass-through could be planned as a “Dutch” door to minimize the number of doors in the Pharmacy.

Locate the Pharmacy such that the flow of outpatient traffic to Pharmacy does not disrupt the Chemotherapy area and is directly connected and integral to the chemotherapy treatment area.

A1(c).5.2.9 Patient Privacy

Provide complete visual and acoustic privacy for patients in all changing, consultation, examination and treatment areas. Privacy is of the utmost importance and control of sound transmission between rooms is a critical design consideration.

A1(c).5.2.10 Expandability

Space for additional chemotherapy chairs (6) will be planned. The additional space will be located in an area contiguous with the other chairs and should include sufficient space for all the required support areas.

Also refer to Output Specifications, Section 1: Key Site and Building Design Criteria, subsection 1.2.3.3 Flexibility and Expandability.

A1(c).5.2.11 Ergonomics Considerations

Refer to Output Specifications, Section 1: Key Site and Building Design Criteria, subsection 1.2.4.6 Ergonomics.

A1(c).5.2.12 Care Station Configurations

Care stations will be configured to achieve a degree of privacy by the arrangement of space to accommodate activities from highly interactive teamwork, to public activities, to concentrated staff/team “quiet zone” activities. Understanding this hierarchy of zones and the appropriate zoning of the staff work areas will be critical to its functionality.

- (Reception is in a separate area).
- Care Station – health professionals will utilize this area to interact and work. It will be generally quiet, subdued, and facilitate conversation while accounting for staff and patient confidentiality.
- (No dictation area).

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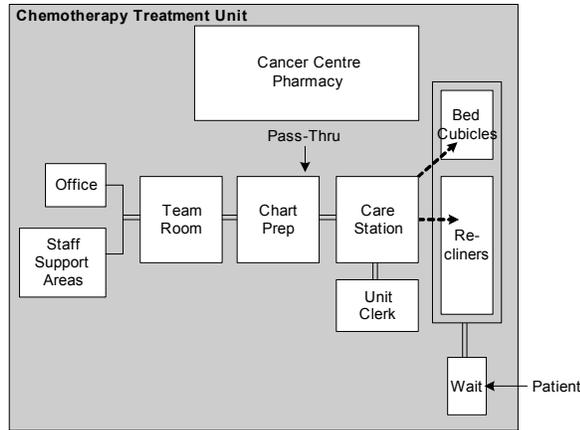
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A1(c).5.2.13 Component Functional Diagram

The spatial organization of this component will be generally as shown in the functional diagram below:

A1(c).5.2.13.1 Macro Relationship Diagram



Legend

- ==== Immediately Adjacent
- Direct Access
- - - - Reasonably Close Access
- ← - - - Direct Visual Supervision

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A1(c).5.3 Schedule of Accommodation (Note: Spaces listed in parentheses () are spaces supporting services provided by Project Co and are included in the total net square metres.)

Ref	Space	Area Requirements		
		units	nsm/unit	nsm
	<u>Chemotherapy Area</u>			
01	Workstation, Reception/Unit Clerk	1		15.0
02	Waiting Room, Patients/Family	1		12.0
03	Stretcher/Wheelchair Alcove	1		6.0
04	Open Recliner Chair Area	12 ⁴	7.5	90.0
05	Open Bed Cubicle Area	3	12.0	36.0
06	Washroom, Patient, Wheelchair Type	2	4.5	9.0
07	Linen Alcove	1		(1.5)
08	Patient Cubicle, Isolation	1		12.0
09	Washroom, Patient, Wheelchair Type	1		5.0
10	Care Station	1		40.0
11	Unassigned Reference Number			
12	Chart Preparation/Dictation Area	1		10.0
	Cancer Centre Pharmacy			0 ⁵
13	Office, Clinical Nurse Leader	1		9.0
14	Teaching Room	1		12.0
15	Crash Cart Alcove	1		0.5
16	Nourishment Centre	1		(4.5)
17	Clean Supply Holding Room	1		(11.0)

⁴ Proponent will evaluate the cost benefit of building to maximum capacity initially (18 chairs) or phasing construction as indicated in Table A1(c)-A.

⁵ See C5 Pharmacy Services.

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Ref	Space	Area Requirements		
		units	nsm/unit	nsm
18	Soiled Utility Room	1		(7.5)
19	Soiled Holding Room	1		(7.5)
20	Housekeeping Closet	1		(5.0)
21	Staff Locker Room	1		2.5
22	Washroom, Staff	1		2.5
Total				298.5

A1(c).6 DESIGN GUIDANCE

Project Co is referred to:

- BCCA's Cancer Management Guidelines
- BCCA's Systemic Therapy Program Policies/Procedures
- BCCA's Cancer Drug Manual

A1(c).7 OTHER SPECIFICATIONS

Chemotherapy services are based in the Chemotherapy Treatment Unit, however, other specifications that will be consulted are:

- A1 Ambulatory Care Centre [specifically A1(d), A1(e) and A1(f)]
- B5 Maternal Child Program
- C5 Pharmacy Services