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## A Outpatient Services

### A4 RENAL SERVICES

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#### A4.1 SERVICE DESCRIPTION

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##### A4.1.1 Scope of Clinical Services

This section A4 sets out the requirements for the centralized facilities required to support the Facility's renal program to be achieved or accommodated by Project Co in providing the Works and the Services. The primary clinical activities conducted within this component include:

- Peritoneal dialysis services
- Hemodialysis services
- Nephrology consultative services
- Post transplant consultative services

Critical care patients whose conditions prevent transfer to the unit will receive hemodialysis in specially equipped beds located in the Intensive/Stepdown Care Units, Comprehensive Cardiology Care Unit, and Emergency.

The Abbotsford Hospital Renal Services will:

- Provide care to the chronic dialysis population in the immediate Fraser Valley area vicinity
- Support community-based patients
- Manage patients with acute and complicated kidney failure

Patients with renal disease will require consultation and/or treatment from a variety of hospital-based services including:

- Nutrition & food services
- Social services
- Physiotherapy
- Spiritual care
- Psychiatry
- Pharmacy

There are two phases of the peritoneal dialysis program, including intermittent peritoneal dialysis (IPD) and continuous ambulatory peritoneal dialysis (CAPD).

The initial phase, which usually lasts two to three weeks, includes catheter insertion and peritoneal dialysis. The patient attends the program at the AHCC ten hours per day, three days per week. At the end of this initial phase, the patient and family receive intensive training for self-care CAPD in either the home or in the clinic.

The second phase includes ongoing follow-up and preventative monitoring of patients on CAPD. In this phase, the patient returns every six weeks for a one to two-hour clinic visit with the renal team and twice a year for a comprehensive six-hour visit. The follow-up care includes bloodwork as well as clinical assessments. Patient who require urgent/emergent follow-up of renal-related problems can be seen either in their homes, in the clinic during regular hours of operation, or through the Emergency department, depending on the nature of the need.

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## A Outpatient Services

### A4 RENAL SERVICES

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The peritoneal dialysis program offers a multi-disciplinary team approach with nurse, dietician, social worker, pharmacist, and physician. The renal program has a matrix system of management. The multidisciplinary program team directs the overall clinical plan.

The program team works collaboratively with other renal programs in the province through the Provincial Renal Agency (PRA) and the Provincial Health Services Authority (PHSA). The PRA is an advisory group that looks at clinical standards, renal costing/funding, and planning for provincial growth. The PHSA administers the program throughout the province. The individual program team members report to the renal program patient care manager.

The goal of the team is early detection or prevention of various health issues. At present, there are eight IPD stations. Future plans call for no change to this number because patients will be captured early in the pre-dialysis clinic.

The hemodialysis service serves both acute and chronic patients. Acutely ill patients will be dialyzed in the ICU, CCU, and Emergency. With patient growth and the emergence of medication resistant organisms, there is a need to provide these off-unit isolation chairs. Hospital will adhere to Centre of Disease Control and Prevention guidelines that require patients with hepatitis B to be dialyzed under this protocol.

The projected workload is to provide a total of 21 stations and consolidate all these stations in one area. Run times average 4 hours with approximately a one-hour period for before and after-treatment care. There are often overlaps in schedule times and periods of intense activity.

#### A4.1.1.2 Current Trends

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

- *The anticipation of a continued growth in renal disease for the foreseeable future with growth estimated at approximately 14% per year.*
- *There will continue to be a greater focus on community-based hemodialysis.*
- *There will be an increased trend towards using peritoneal dialysis as an initial therapy and then switching to hemodialysis during treatment of end stage renal disease.*

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#### A4.1.2 **Scope of Education Services**

Renal Services will accommodate patient teaching using dedicated dialysis stations. Patient teaching will be provided to residents of limited care facilities and to home dialysis patients. Staff training and inservice education will also occur here.

Education functions and estimated maximum attendance at each are summarized as follows:

- Patient education program (2 at a time occasionally with family in attendance)
- Staff and inservice education (up to 8 at a time)

In addition to the non-academic educational functions cited above, this component mainly conducts educational programs in the community.

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## A Outpatient Services

### A4 RENAL SERVICES

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#### A4.1.3 Scope of Research Services

Clinical research activities will be accommodated in this component as will retrospective and concurrent analyses of patient records. All research will occur within the service space provided and will not require special facilities, equipment, or personnel.

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#### A4.1.4 Specific Exclusions

This specification excludes renal services/requirements provided elsewhere, including:

- Progressive renal insufficiency clinics assumed to be provided in the community
- Hemodialysis home care program assumed to be provided in the community
- Dialysis provided in intensive care/critical care units (see section B4 Intensive/Stepdown Care Units)
- Dialysis provided in emergency (see section A2 Emergency)
- Medical/surgical/treatment/educational outpatient services (see A1 Ambulatory Care Centre)

## A4.2 OPERATIONAL DESCRIPTION

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### A4.2.1 Minimum Hours of Operation

Routine hours of operation for this component will be as follows:

- The peritoneal program will run Monday to Friday from 0700 to 2100. IPD will be provided Monday, Wednesday, and Friday. The clinic will operate Tuesday and Thursday. The peritoneal dialysis team is available to patients Monday to Friday from 0700 to 1700.
- Hemodialysis services will be provided Monday to Friday from 0600 to 2300 and from 0600 to 1900 on Saturday and Sunday. Staff are on-call at other times for acute situations.

## A Outpatient Services

### A4 RENAL SERVICES

#### A4.2.2 Patient Management Processes

##### A4.2.2.1 Reception/Scheduling

All scheduled and unscheduled patients (and/or accompanying porters and escort staff), clinicians, and visitors to the department are received at a care/communication station. The majority of patients attend as outpatients, and will arrive and leave walking, in a wheelchair, or on a stretcher. Inpatients will be either escorted or transported to and from the component by porters. During their initial and subsequent visits, outpatients arriving for hemodialysis, peritoneal dialysis, or the pre-dialysis clinic, will first complete any outstanding documentation and receive their identification card at the care/communication station.

The care station accommodates patient reception and registration, appointment booking, information access and a waiting area. Once the patient had been registered and they will be directed to the waiting area. The waiting area should accommodate space for wheelchairs and seating will be designed for persons with disabilities or the frail patient in mind. Outerwear and other personal belongings will be deposited in lockers for the duration of the treatment/training session.

##### A4.2.2.2 Peritoneal Dialysis

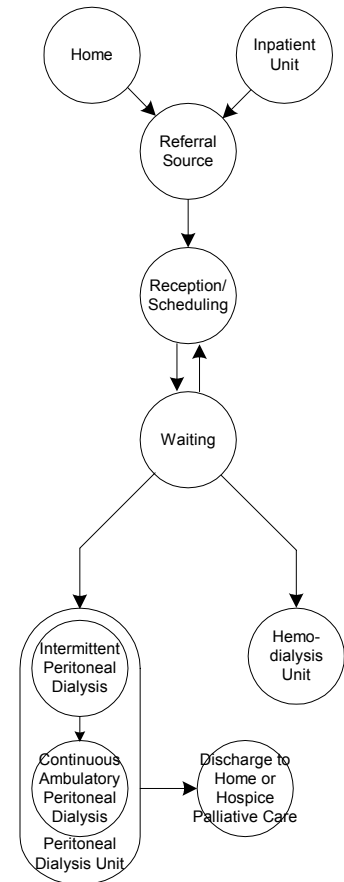
Registration for peritoneal dialysis will generally be accomplished by electronically transferring the patient from the pre-dialysis clinic or the Abbotsford Hospital inpatient units. If not, registration will occur in Admitting. It is acknowledged that urgent drop-ins will continue to come to the peritoneal dialysis unit and must be accommodated. With the case management system operational, patients can by-pass the Emergency department and come directly to the peritoneal dialysis unit on weekdays.

Patients are initiated into the peritoneal dialysis program through 2-3 weeks of intermittent peritoneal dialysis in the unit.

Following this, patients are trained for continuous ambulatory peritoneal dialysis, which will be carried out at home, and will receive training while admitted as inpatients. Following discharge, they will attend the CAPD clinic in this component once a month for assessment. All patients receive placement of a peritoneal dialysis catheter with up to 30% being inserted in the operating room under general anaesthesia. Suitable examination/consultation rooms with audio-visual equipment will be available for this individual assessment activity.

##### A4.2.2.3 Hemodialysis

Registration and re-visits for hemodialysis are the same as for peritoneal dialysis. Patients requiring hemodialysis will have received pre-dialysis instruction on the component prior to attending for dialysis. Treatment sessions, prescribed by the nephrologist according to individual needs, will typically include connection to a hemodialysis machine 3 times per week, for 3 to 5 hours. Patients will be seated in a recliner chair or laying in a bed throughout a session.



Patient Flow Diagram

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**A Outpatient Services**  
**A4 RENAL SERVICES**

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Each hemodialysis station will be equipped with medical gases and the ability to monitor the patient's blood pressure. Bed and chair scales will be provided at half of the stations.

A total of 21 hemodialysis stations will be provided. A separate, dedicated station will be provided for apheresis procedures.

**A4.2.2.4 Discharge from Dialysis**

Discharges from the renal program are done when a patient moves away, is transplanted, or dies. The discharge is done electronically.

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**A4.2.3 Patient Information Management**

Patient Information Management System will connect with the Provincial Renal Authority utilizing PROMIS software. There will also be an electronic patient information board. Also 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.

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**A4.2.4 Staff Work Processes**

**A4.2.4.1 Reception/Registration/Booking**

Staff located at the point of entry to the component will receive all inpatients and outpatients, confirm their hospital registration for their scheduled services, and then direct them to the appropriate area of the component. A variety of other tasks, including telephone call handling, inpatient and outpatient booking/appointment scheduling, patient preparation, answering patient queries etc. are also undertaken here. Data entry of patient re-visits will be done electronically by the unit clerk. All admissions, discharges, and transfers in the renal program must also be communicated electronically to the Provincial Renal Agency.

**A4.2.4.2 Preparation**

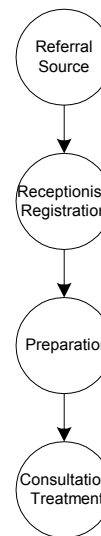
Patients may require preparation prior to dialysis (i.e., weighing themselves, washing access arm). Staff will direct them to the appropriate area in preparation for their dialysis.

**A4.2.4.3 Consultation/Treatment**

Staff will then execute the consultation, treatment, teaching session, etc. with one or more patients.

**A4.2.4.4 Staff Services**

Staff facilities (other than a staff washroom) will be provided in the A1 Ambulatory Care Centre for shared use by the Renal Services.



Process Flow Diagram

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## **A Outpatient Services**

### **A4 RENAL SERVICES**

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Outer clothing will be stored in coat closets located in a lockable coat hanging area. Students and volunteers will also have space for coat storage in the coat closets. Purse lockers will be provided for personal valuables and will be shared across shifts.

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#### **A4.2.5 Materiel Services**

Due to the significant supply needs of this component, storage areas will be capable of receiving and holding product on pallets.

Some pharmacy supplies are purchased directly from off-site retail suppliers and are delivered directly to Renal Services by courier.

Also refer to Output Specifications, Section 4: Facility Management Services, subsection E7 Materiel Services, and Section 2: Clinical Services, subsection C8 Sterile Processing Services.

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#### **A4.2.6 Linen/Housekeeping Services**

Due to the significant use of supplies in this component, special provisions will have to be made for the disposal of a significant volume of wastes.

Project Co staff delivering the Service Category will need to be based in the component for a significant portion of the day to accommodate the turnover of patients.

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

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#### **A4.2.7 Equipment Asset Management**

Dialysis machines will ordinarily be stored at each dialysis station and removed only for maintenance and repair work. Other equipment service and supply systems accommodated within this component will consist of the following:

- Maintenance and repair of hemodialysis and peritoneal dialysis equipment performed by with pursuant to the E2 Service Category.
- In-line water treatment/purification
- Storage of backup and portable hemodialysis machines
- Storage of dialysate and disposable supplies (up to a 2-week inventory)

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

**A Outpatient Services**

**A4 RENAL SERVICES**

**A4.3 ACTIVITY INDICATORS**

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

**A4.3.1 Hospital Activity**

Unit	Minimum Projected Yearly Activity
CAPD Follow-Up Clinic	
# CAPD Patients	225
# CAPD Visits	2,675
# CAPD Visits/Patient	12
Hemodialysis	
# Patients	126
# Runs	19,656
# Stations	21

**A4.3.2 Cancer Centre Activity (Incl. in Hospital Activity above)**

**A4.4 PEOPLE REQUIREMENTS**

This component will have a total staff complement in the range of 58 FTE, consisting of 10 technicians, 35 nurses, 2 aides, 1 pharmacist, 1 clinician, 3 social workers, 3 dieticians and 3 clerical/administrative personnel.

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
Entry/Examination Office Area	10-15	9-12	3-5	1-2	23-34
Patient Care Area	13-16	8-10	1-2	1-2	23-30
Support Area	0	1-2	0	0	1-2

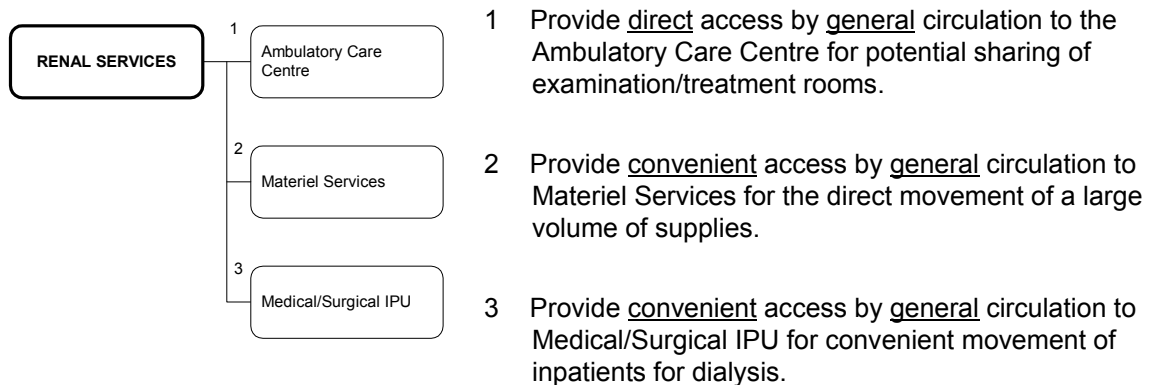
## A Outpatient Services

### A4 RENAL SERVICES

#### A4.5 DESIGN CRITERIA

##### A4.5.1 Key External Relationships

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



*Note:* Provide direct, external access from parking and the outpatient entry for patient movement.

##### A4.5.2 Key Internal Relationships/ Environmental Considerations

The following will be achieved:

###### A4.5.2.1 Flexibility

Maintain standard room sizes and configurations wherever possible for short and long-term flexibility in change of use. Create versatile interview, office and treatment areas which may be used for a variety of patient care activities.

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

###### A4.5.2.2 Visual and Acoustic Privacy

Some visual privacy will be provided for patients in examination and treatment spaces in the Unit. Visual privacy can be achieved through the use of curtains in the chair area of the hemodialysis stations.

Acoustic privacy is important throughout. All examination, interview/counselling areas will be designed with this in mind. The staff centre will be provided with a glazed partition to the patient chair area to provide acoustic privacy while maintaining a strong visual connection.

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



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## A Outpatient Services

### A4 RENAL SERVICES

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#### A4.5.2.3 Patient Sightlines

All patient bed stations must be directly visible from the central care station/work area. It is important that visual contact be maintained at all times between nursing staff and patients. Nursing staff must have direct views of a patient's head and face without being isolated from other activities in the unit.

#### A4.5.2.4 Infection Control

Refer to Output Specifications, Section 1: Key Site and Building Design Criteria, subsection 1.2.4.5 Infection Control; and Section 5: Design and Technical, Division 15 Mechanical.

#### A4.5.2.5 Exterior Views and Natural Lighting

If possible, exterior views will be provided from the chair areas of the hemodialysis stations in the unit to offer patients some orientation and visual relief during their extended stays.

The water/reverse osmosis (RO) supply room should not have natural light. The treatment area must have adequate lighting to support line insertion.

Also refer to Output Specifications, Section 1: Key Site and Building Design Criteria, subsection 1.2.5.3 Daylight.

#### A4.5.2.6 Access & Circulation

Provide generous and direct circulation systems in all patient areas to allow for the efficient movement of both ambulatory and wheelchair/stretchers/bed patients. The requirement for bed access (usually a 1.20 m door) will be carefully addressed (esp. in CT, US, and Angio).

Some access routes and circulation systems must allow delivery paths for large pieces of equipment. Height, width, and floor loads must be considered in the design of these access routes. In addition, provide automatic doors at the entry but arrange to prevent drafts from entering the area.

#### A4.5.2.7 Ergonomics Considerations

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

#### A4.5.2.8 Interior Design Considerations

Refer to Output Specifications, Section 1: Key Site and Building Design Criteria, subsection 1.2.5 Indoor Environmental Quality.

#### A4.5.2.9 Expandability

This unit needs to be designed in such a way as to allow adjacent expansion for a minimum of 9 additional hemodialysis stations.

#### A4.5.2.10 RO Water

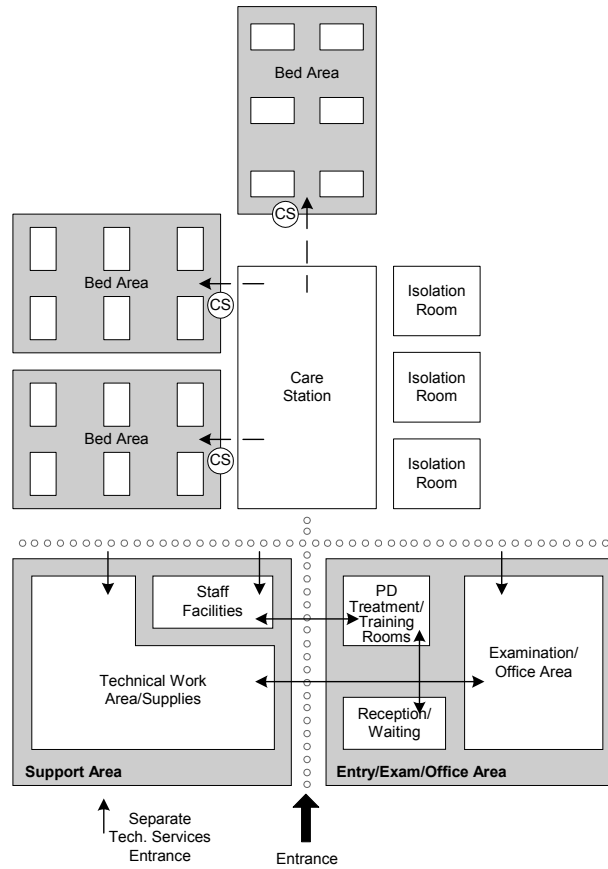
As Renal Services, the Laboratory Medicine, and Intensive/Stepdown Care Units will all require a RO water treatment system, consideration should be given to the proximate locations of these functions to facilitate sharing of a single system. The reverse osmosis unit (room A4-32) for the hemodialysis units must be supplied by a vendor who is Health Canada licensed and the purity of the water must meet CSA Standard Z364.2.2-03. The capacity is to meet the number of stations indicated in the schedule of accommodations for the complete facility and the through put for each station indicated in the output specifications.

**A Outpatient Services**

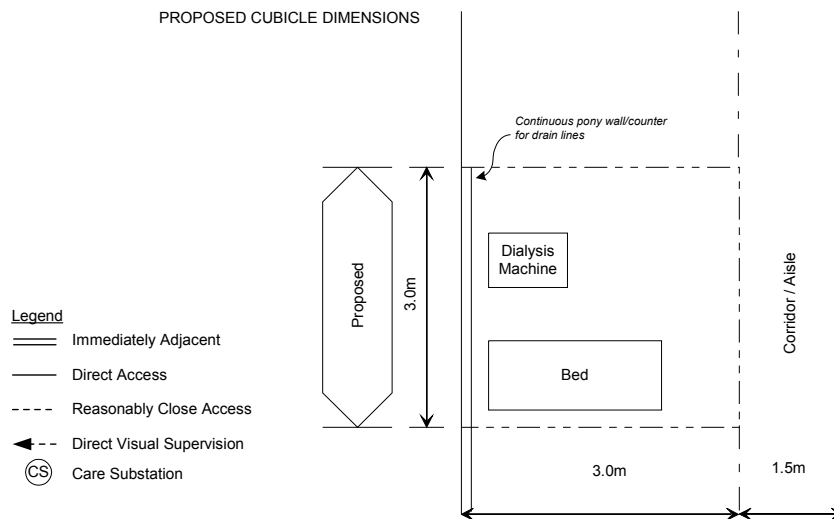
**A4 RENAL SERVICES**

**A4.5.2.11 Component Functional Diagrams**

The spatial organization of this component will be generally as shown in the diagrams below.



PROPOSED CUBICLE DIMENSIONS



**A Outpatient Services**  
**A4 RENAL SERVICES**

**A4.5.3 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>Reception/Examination/Office Area</u>			
01	Reception Desk	1		10.0
02	Waiting/Lounge Area	1		60.0
	Washroom, Patient/Public			0 <sup>1</sup>
03	Multipurpose/Interview Room	2	11.0	22.0
04	Office, Clinician	1		9.0
05	Office, Dietitian	1		9.0
06	Office, Nephrologist	1		9.0
07	Office, Social Worker	1		9.0
08	Treatment/Examination/Procedure Room	1		16.0
09	Peritoneal Dialysis Treatment Room	1		45.0
10	Washroom, Patient, Wheelchair Type	1		4.5
11	Peritoneal Dialysis Home Training Room	1		16.0
12	Clean Supply Holding Room	1		(10.0)
13	Soiled Utility Room	1		(8.0)
14	Exam/Consult Rooms	3	11.0	33.0
15	Weight Scale Alcove	1		2.0
16	Dictation Stations	2	1.5	(3.0)
	Subtotal			265.5

<sup>1</sup> Refer to D3 Main Public Facilities or A1 Ambulatory Care Centre.

**A Outpatient Services**

**A4 RENAL SERVICES**

Ref	Space	Area Requirements		
		units	nsm/unit	nsm
	<u>Patient Care Area</u>			
17	Care/Communications Station	1		25.0
18	Pneumatic Tube Station	1		1.0
19	Medications Room	1		6.0
20	Nourishment Centre	1		(5.5)
21	Office Equipment Room	1		8.0
22	Stretcher Holding Area, Patient	2	7.5	15.0
23	Hemodialysis Treatment Cubicles	18	9.0	162.0
24	Care Substation	3	4.0	12.0
25	Washroom, Patient, Wheelchair Type	2	4.5	9.0
26				
26-1	Hemodialysis Treatment Room, Isolation (with Ante Room A4-27)	2	11.0	22.0
26-2	Hemodialysis Treatment Room, Private	1		11.0
27	Ante Room	2	4.0	8.0
28	Washroom, Patient, Wheelchair Type	1		4.5
29	Weight Scale Alcove	2	1.0	2.0
30	Closet, Patient	1		2.5
31	Office/Interview Room	6	12.0	72.0
	Subtotal			365.5
	<u>Support Area</u>			
32	Water/RO Supply Room	1		28.0
33	Biomedical Engineering/ Maintenance Workroom	1		(40.0)
34	Clean Supply Holding Room	1		(15.0)
35	Soiled Utility Room	1		(12.0)

**A Outpatient Services**

**A4 RENAL SERVICES**

Ref	Space	Area Requirements		
		units	nsm/unit	nsm
36	Soiled Holding Room	1		(12.0)
37	Storage, Equipment	1		15.0
38	Storage, Supplies	1		40.0
	Subtotal			162.0
	<u>Staff Facilities</u>			
39	Break/Team Room	1		15.0
40	Staff Coat Closet	1		4.0
41	Washroom, Staff	1		3.5
	Conference/Education Room			0 <sup>2</sup>
	Subtotal			22.5
	<b>Total</b>			<b>815.5</b>

**A4.6 DESIGN GUIDANCE**

None

**A4.7 OTHER SPECIFICATIONS**

Renal Services are primarily based in the Renal Services component, however, other specifications that will be consulted are:

- A1 Ambulatory Care Centre
- A2 Emergency
- B4 Intensive/Stepdown Care Units

<sup>2</sup> See A1 Ambulatory Care Centre.

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**A Outpatient Services**

**A4 RENAL SERVICES**

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