



Section 3

Functional Diagrams

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General Considerations

Space needs and clinical programs can be anticipated to change during the life of the building. In order to facilitate changes in function, minimize remodeling work, and to allow for greater interoperability in the use of Clinic spaces, the use of modular spaces and designs is encouraged. The following diagrams in this section illustrate some typical concepts for the development of basic Exam / Treatment (E/T) modules. Once the basic module is established, it may be repeated for larger, multiple module clinics.

The space program for each Module will include Core Spaces (including Reception/Control, Exam Rooms, Intake/Exit Interview, Nurse Triage, Treatment and Procedure Rooms, Patient Toilets, Nurse Station, Medication Room, Staff Toilet, Clean Supplies, Soiled Utility, and Conference and Consultation) and Support Spaces (including HACs and Clerical Offices).

The number of exam rooms and modules is determined from mission, staffing and workload projections using the criteria and formulas in Chapter 262. Typical E/T modules will have 10 to 19 exam rooms and support spaces. The diagrams in this Section depict the relationships of the Core and Support spaces in a typical E/T Module in the Outpatient Clinic. Specialty Clinics, such as Chemotherapy, Dermatology, Gastroenterology, etc., will require additional specialized treatment and support spaces as listed in the space program.

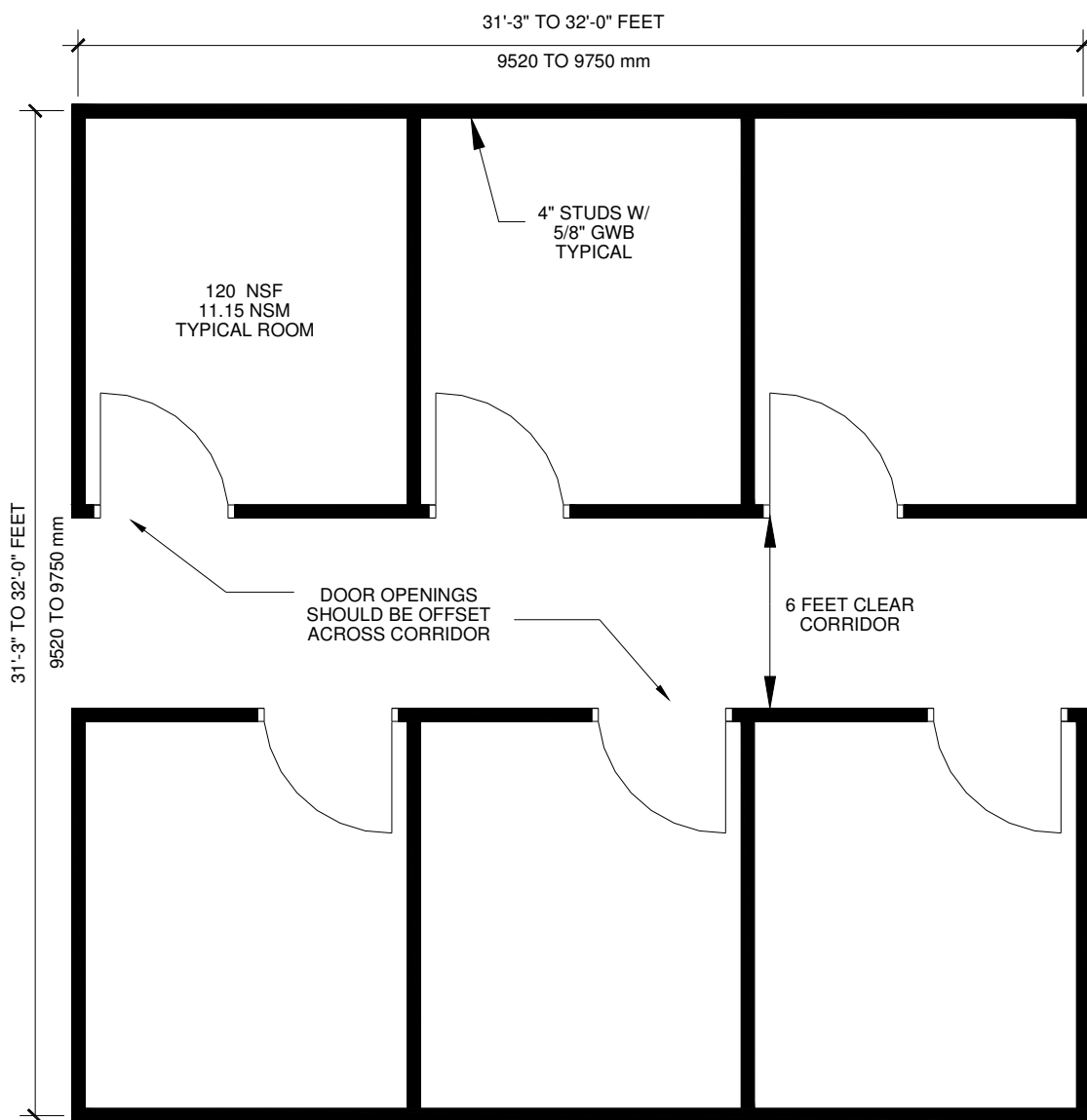
The most common space size in the Outpatient Clinic should be a unit of 120 net square feet (examination rooms, offices, and many support spaces). Corridors used by patients should be at least 6 feet in width.

Accordingly, the planning module used to develop the Guide Plates is based on a room of approximately 10 by 12 feet (see diagram on Page 3-2). Allowing for partition widths, six typical (or unit) rooms and a 6 foot wide corridor will fit in 31'-3" to 32'-0" square grid. This is the module used in developing this Design Guide and is intended as a starting point for consideration during design. It is not intended to restrict the use of other suitable modules or structural grids. The A/E shall coordinate the final module with the structural system selected for the project.

Net and Departmental Gross Area

Net Area (Net Square Feet, NSF; or Net Square Meters, NSM) is the actual floor area in a room or functional area (finish to finish) that can be used by people, furnishings, or equipment. Department Gross Square Feet (DGSF) includes, in addition to the Net Area, partitions and circulation internal to the functional area or department. The net to department gross factor (NTDG factor) adopted by VA for Ambulatory Care is 1.65. **The 1.65 factor anticipates that internal circulation must be added to connect functional areas and individual rooms.**

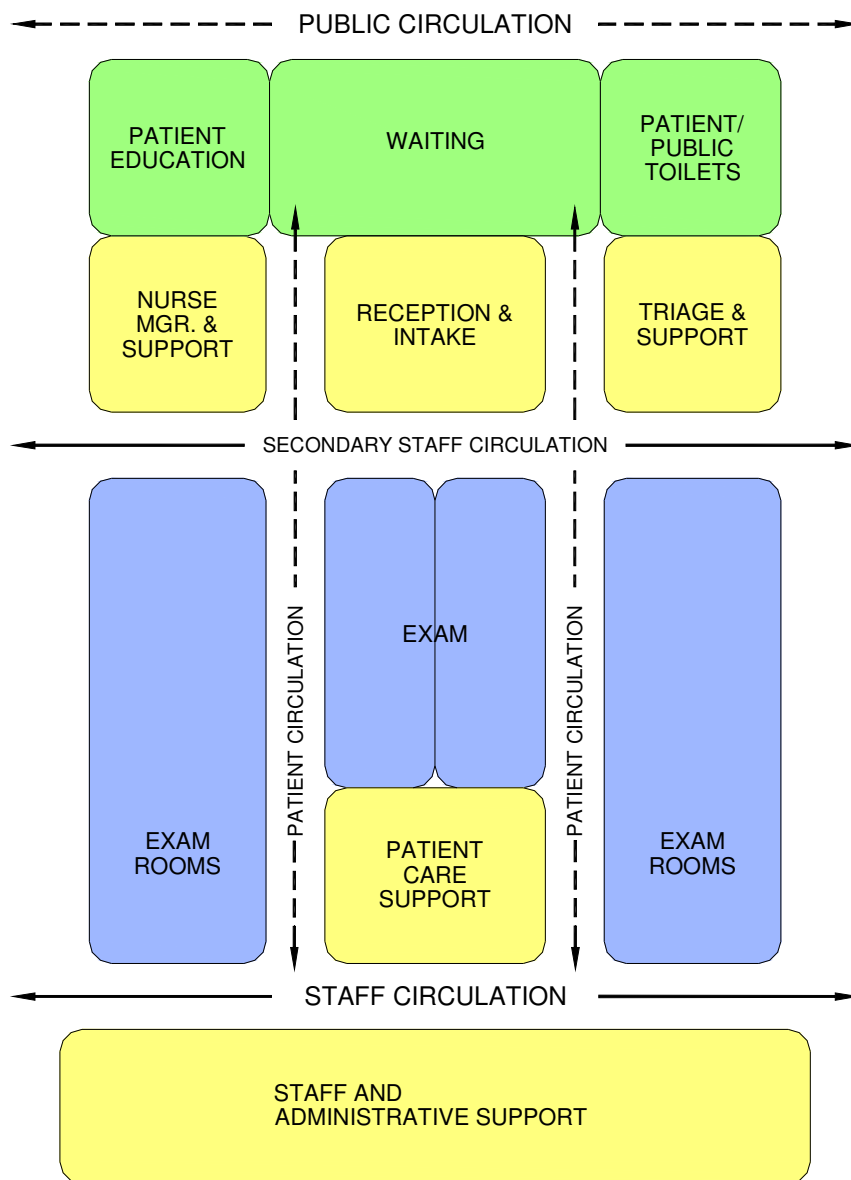
Planning Module



LEGEND FOR FOLLOWING FUNCTIONAL DIAGRAMS:

- PATIENT OR "PUBLIC" SPACES
- STAFF SUPPORT
- EXAM ROOMS
- = PATIENT CIRCULATION
- = STAFF CIRCULATION

Clinics Single Module Relationship Diagram



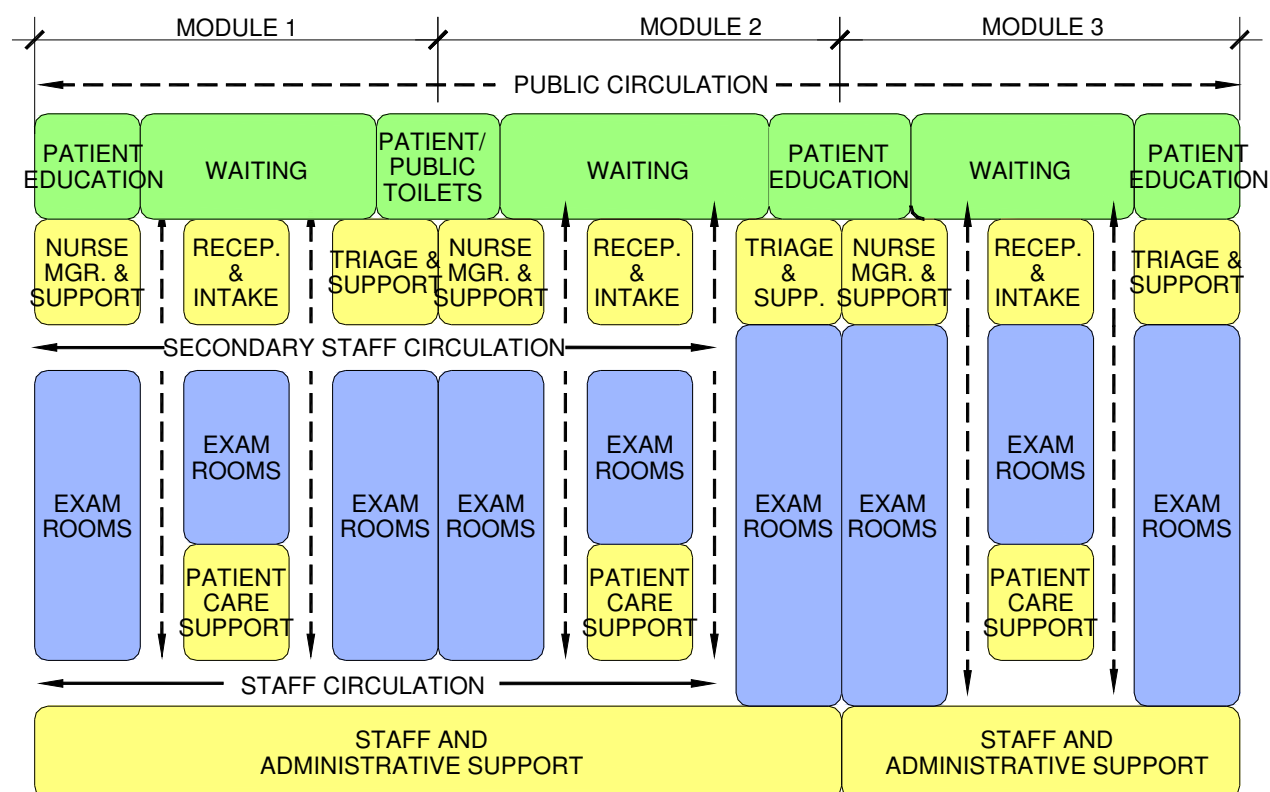
Typical Exam/Treatment Module is based on 10 to 19 exam rooms and support spaces.

Rooms are arranged along double loaded corridors.

“Public” functions are located at the “front” of the module. Most staff offices and common support functions are located at the “back” of the module.

Patient access to the exam/treatment areas is controlled through the Reception and Triage functional areas.

Clinics Multiple Module Relationship Diagram



Typically Outpatient Clinics will have several Primary and Specialty Care modules.

Exam/treatment modules may be arranged with common circulation as shown for Modules 1 and 2. This may provide planning and operational efficiencies from shared space or equipment (such as “overflow” into an adjacent module on busy clinic days); and can help maintain efficient staff and support circulation separate from public routes.

Some modules (specialty clinics in particular) may need to limit “through traffic” and should be kept distinct from adjunct modules as shown by the relationship between Modules 2 and 3.

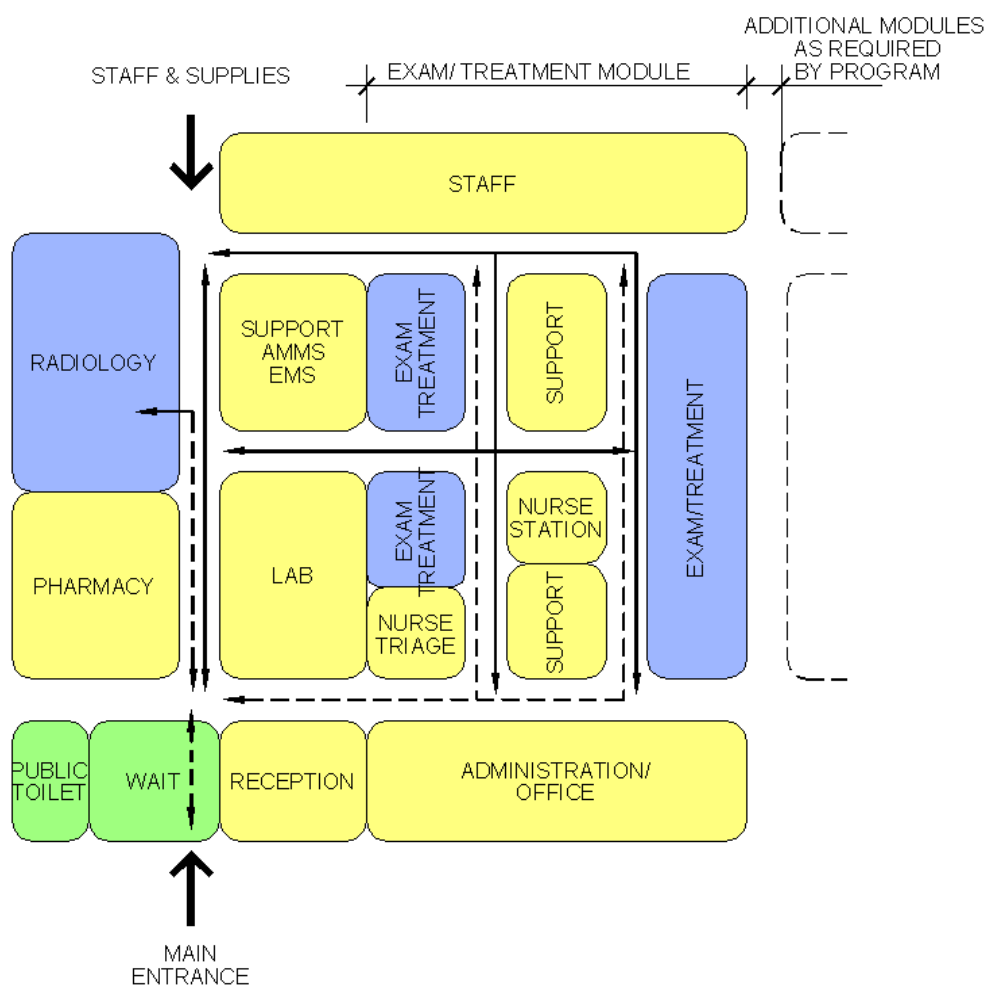
Community Based Outpatient Clinic (CBOC)

The functional areas included in the space program for a CBOC will vary with the medical program, workload projections, staffing, and the availability and capacity of existing services in the parent Medical Center. This Diagram illustrates the relationships of the functional areas in a typical Clinic which may include areas for Reception, Patient Care, Support, and Staff and Administration. When included in the medical program, CBOCs may be expanded to contain limited diagnostic functions (Laboratory and Radiology) and Pharmacy.

Clearly identify the Main patient/public entry to the Clinic; reinforce the entry sequence with the design of site circulation systems. Staff entry and circulation should be separated from patient circulation if possible.

Lab and Pharmacy can expect high traffic and should be located convenient to entry/waiting.

Administration (“Business Office”) functions should be located near reception at the “front” of the Clinic. Most other staff offices and support functions can be grouped to the “back” of the Clinic.



Satellite Outpatient Clinic (OPC)

The functional areas included in the space program for a Satellite OPC will vary with the medical program, workload projections, and staffing. This diagram illustrates general conceptual relationships for the functional areas in a typical Clinic. **The actual sizes of the functional areas and departments will vary with each project.** Therefore, the design and planning for each Satellite OPC must be tailored to the medical and space programs approved for the clinic. **All of the functional areas shown may not be included in each project.**

The following diagram shows all functions on a single level. Depending on the program and site, this may be appropriate for some clinics. Two or more stories will generally be more appropriate for larger clinics and restricted sites.

Clearly identify the Main patient/public entry; reinforce the entry sequence with the design of site circulation systems. Staff entry and circulation should be separated from patient circulation if possible.

Individual entries may be appropriate for some specialty clinics or departments including Ambulatory Surgery and Mental Health Clinics.

Service and dock areas should be located away from patient and staff circulation.

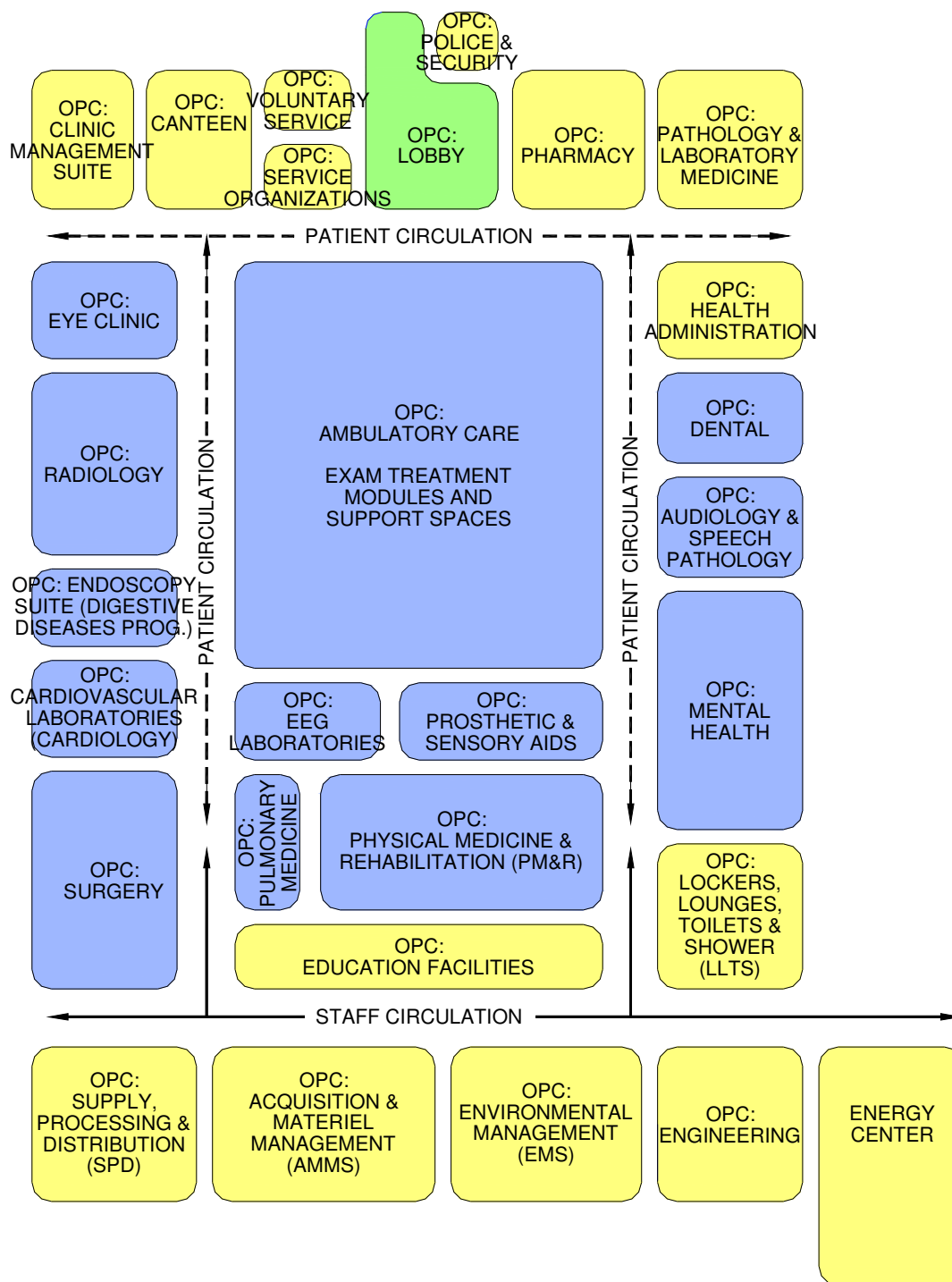
In general, functions with the greatest workloads and those that can be expected to be used by most patients on each visit (such as Pharmacy and Canteen) should be located convenient to the main entry, or on the first floor in multi-story buildings.

Support functions can be grouped to the “back” of the clinic. Acquisition and Materiel Management (AMMS) requires loading dock access and has a strong adjacency with Supply, Processing and Distribution (SPD). Similarly, SPD has a very strong adjacency with Ambulatory Surgery. If SPD and Surgery are not on the same level, dedicated cart lifts (dumbwaiters) or service elevators should be provided as appropriate for the volume of clean and soiled materials, supplies, and equipment.

Larger buildings will usually require an Energy Center (or central plant) to accommodate the necessary building service equipment including boilers, chillers, electrical gear, and emergency generators. The Energy Center and Engineering spaces should be located near the service area and dock. This diagram is intended to represent the functional relationships in a typical clinic and **does not** indicate the computer room, electrical and telephone/data rooms, and other essential building service spaces that must be provided. Designers shall make appropriate provisions for building services in the planning of each clinic building.



Satellite Outpatient Clinic (OPC)



OPC Ambulatory Surgery

The functional areas included in the space program for the Ambulatory Surgery component will vary with the medical program, types of procedures, workload projections, staffing, and the availability and capacity of existing services in the parent Medical Center.

Layout of the Suite—The following diagrams illustrate the typical relationships of the **major functional areas** and **do not show every individual room** from the space program. Separate diagrams are provided to more clearly illustrate Patient Flow, Staff Flow, Clean Supply and Equipment Flow, and Soiled Flow in the surgery suite. Individual room layouts are detailed in the Guide Plates in Section 4.

The Main Entrance to the Ambulatory Surgery Suite may be from a public corridor within the clinic building, or directly from the exterior. Staff and service access is preferably from a dedicated corridor that may also serve other departments in the clinic.

Operating and procedure rooms are arranged around a clean core and open onto the semi-restricted corridor (SRC or peripheral corridor).

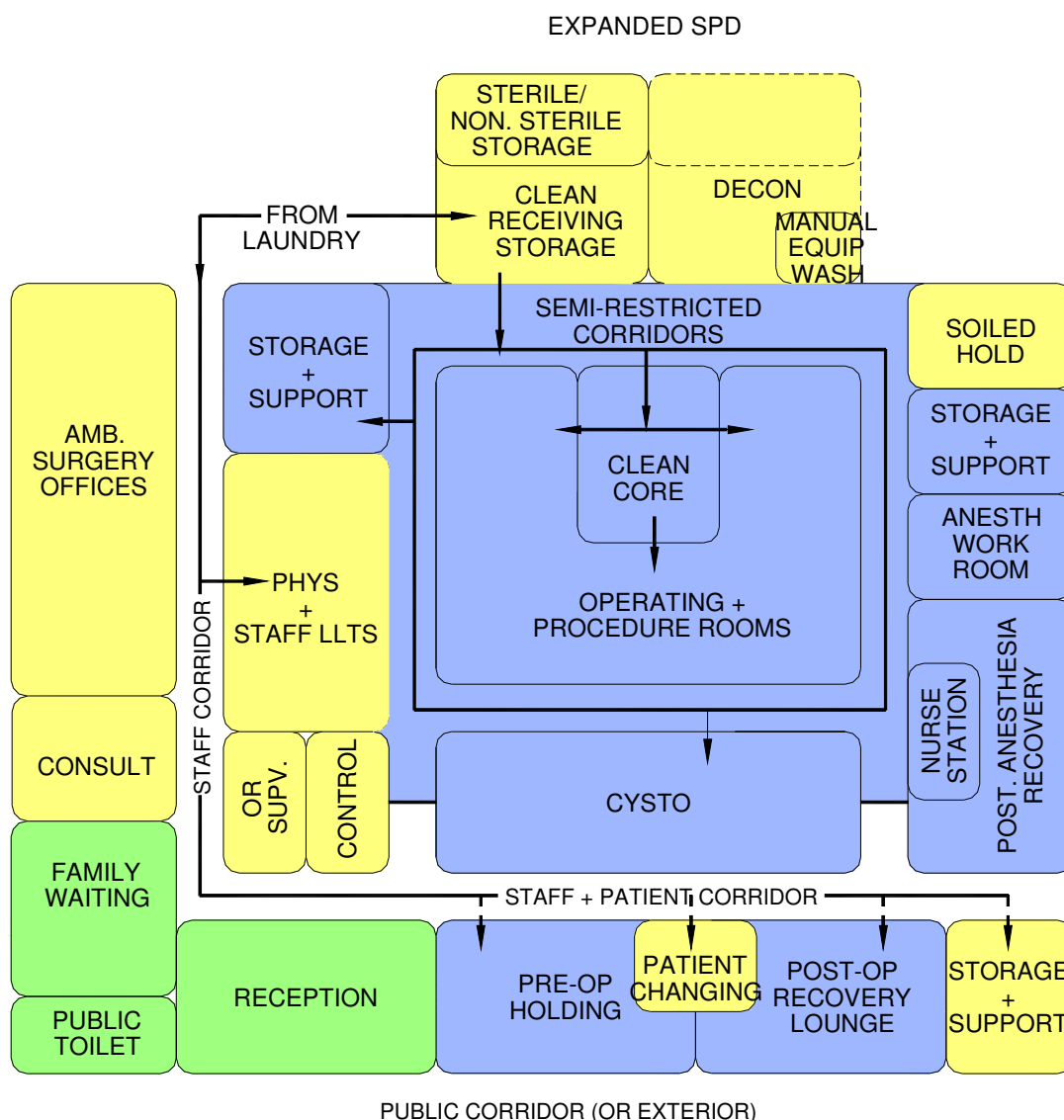
SPD is shown on the same floor as the Ambulatory Surgery Suite. Clean and sterile supplies should be moved as directly as possible to the clean core. When SPD must be located on another floor, there should be a dedicated elevator or cart lift (dumbwaiter) from the clean side of SPD directly to the clean core.

If the program does not include an expanded SPD service, storage space for clean and sterile supplies must still be provided on site. Refer to Guide Plates for SPD: Basic Service and Manual Equipment Wash. Space must be provided to hold soiled equipment and linens pending transport to the off-site processing facility.

If an expanded SPD is provided, soiled instruments and equipment would be taken to Decontamination in SPD to begin processing.

Staff and Physician lockers are shown opening onto the semi-restricted corridor. This would be consistent with design trends that place the scrub sinks off the SRC. Another acceptable alternative is to locate the scrub sinks off the clean core. In that case, locate the locker rooms so that the surgical team members go directly to the clean core after changing into scrubs.

Clean Supplies And Equipment Flow Diagram

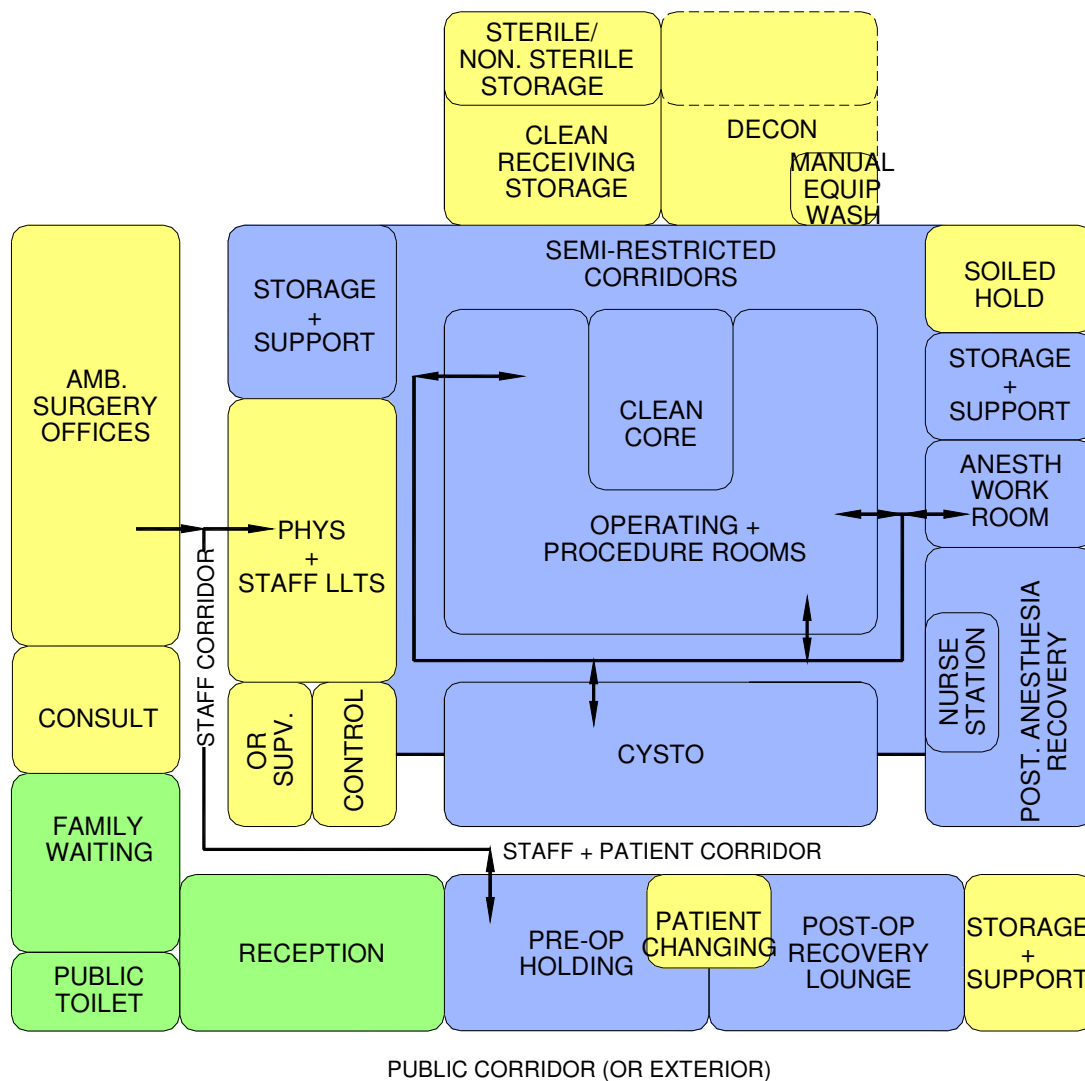


Clean supplies and equipment are transported in case carts from the clean side of SPD to the Clean Core where they are staged prior to use in the Operating or Procedure rooms.

Clean items are also transported in the SRC to the Cysto Suite, Anesthesia workroom, PAR, and storage and support areas,

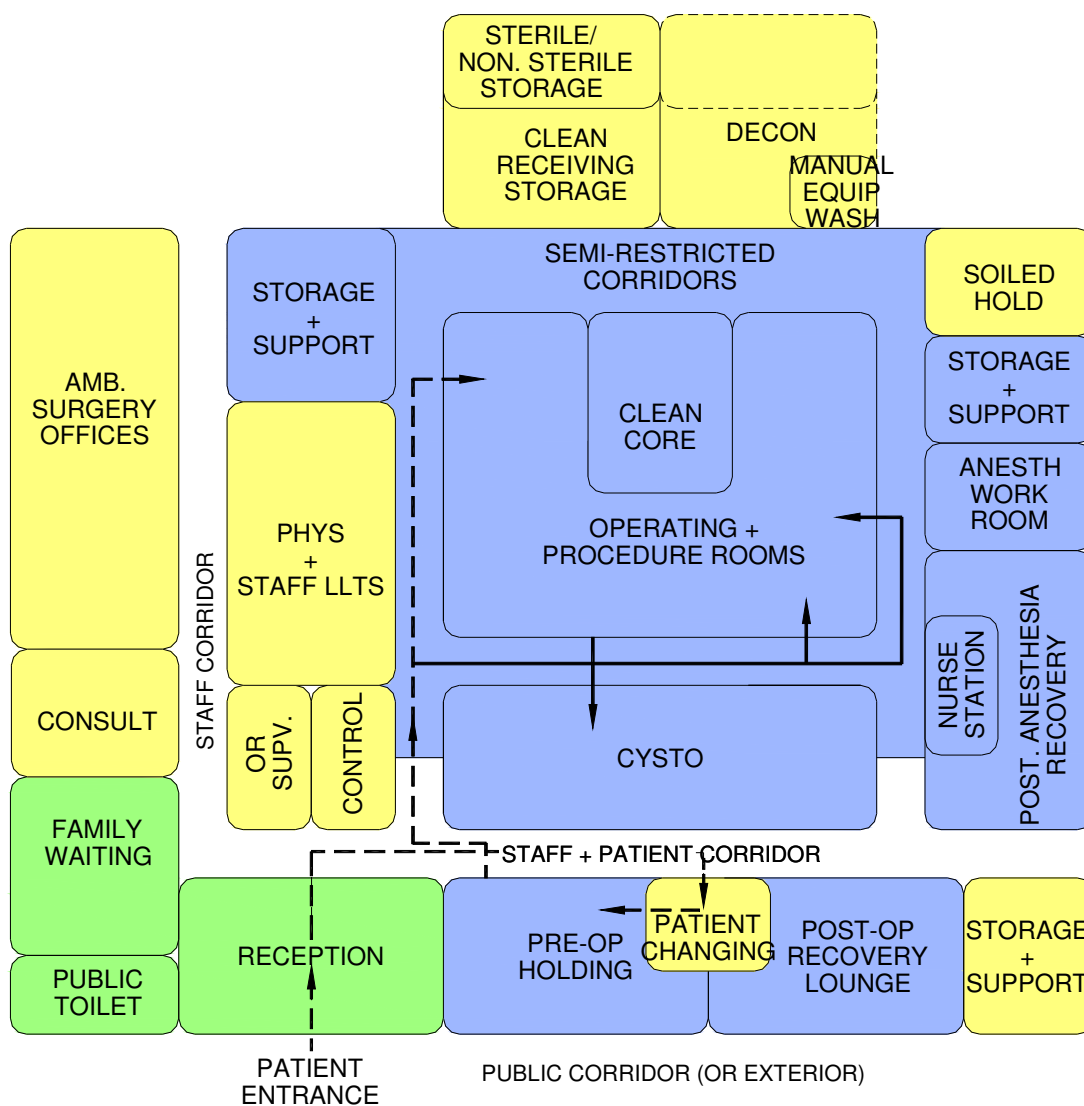
Clean linens (scrub suits, gowns) are transported in carts from Laundry (or clean holding) to the Locker Rooms, Patient Changing, and clean side of SPD.

Staff Flow Diagram—Pre OP



The members of the surgical team circulate in the staff corridors between their offices, Lounges, Pre-op Holding, or other areas in the Clinic. The team changes into scrubs in the Locker Rooms prior to entering the SRC and the Operating or Procedure rooms.

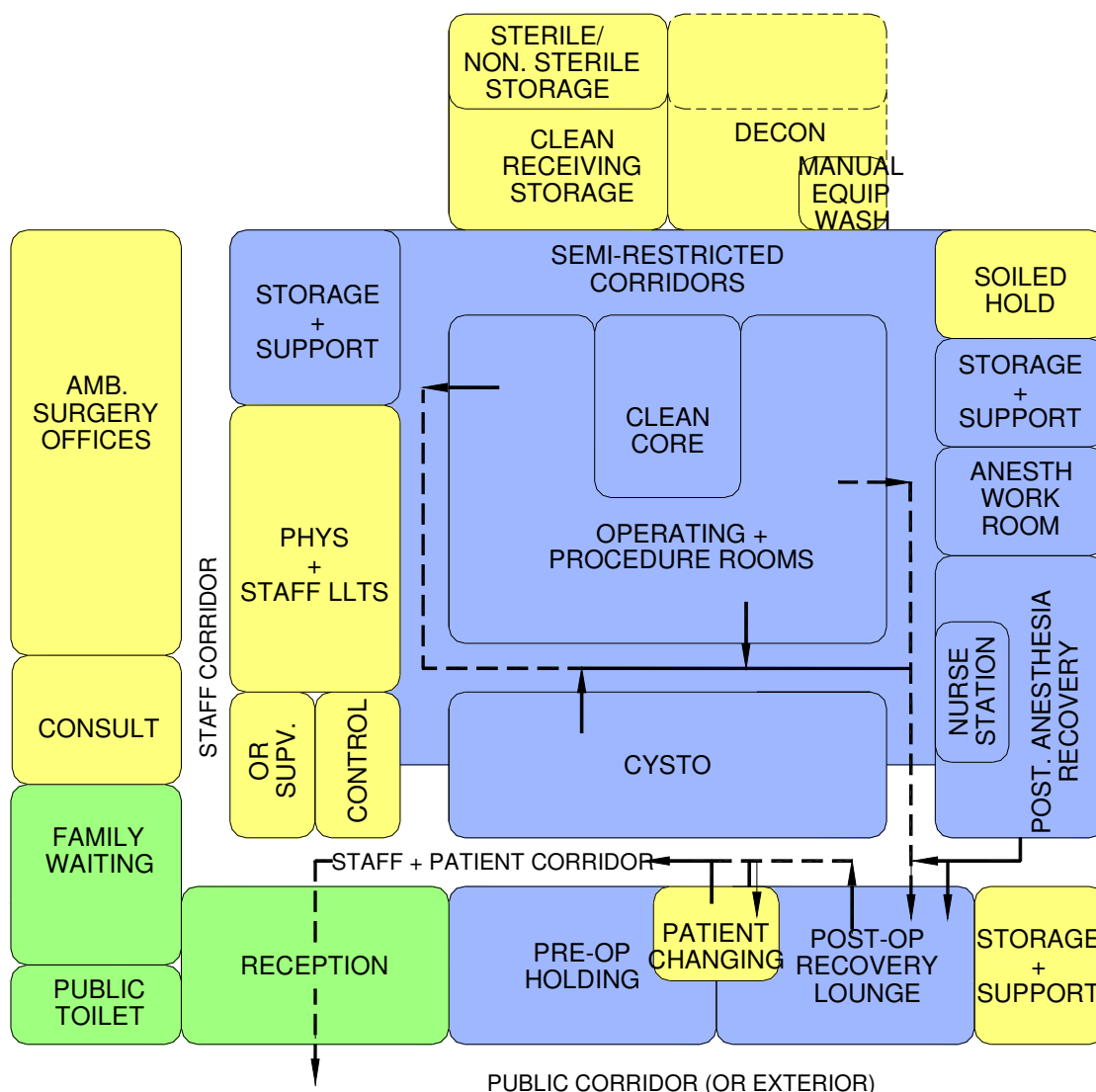
Patient Flow Diagram—Pre OP



Patients may enter the Ambulatory Surgery Suite from a public corridor within the Clinic, or directly from the exterior of the building. After checking in at Reception, patients proceed to Changing and Pre-op Holding.

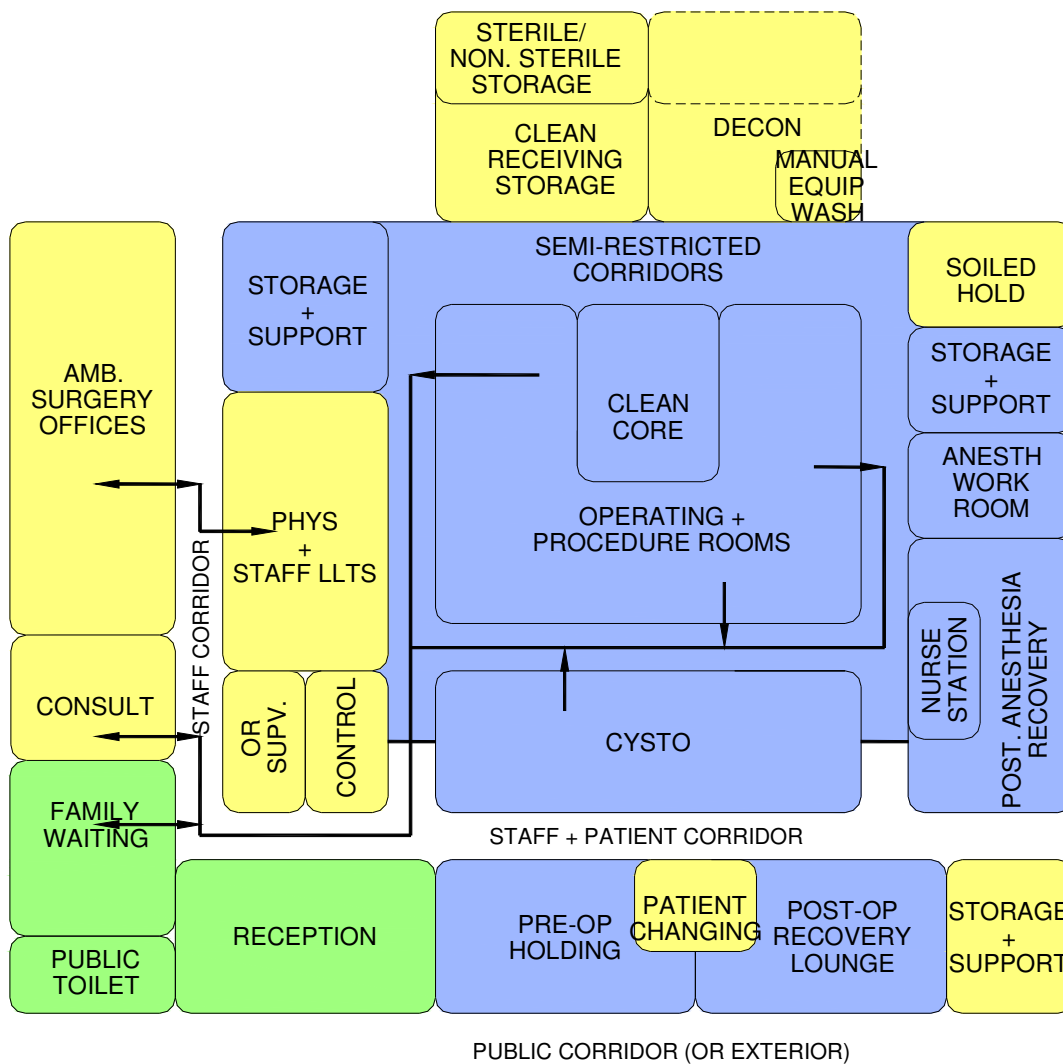
Patients are transported from Pre-op Holding to OR Control and then to the Operating or Procedure room through the SRC.

Patient Flow Diagram—Post OP



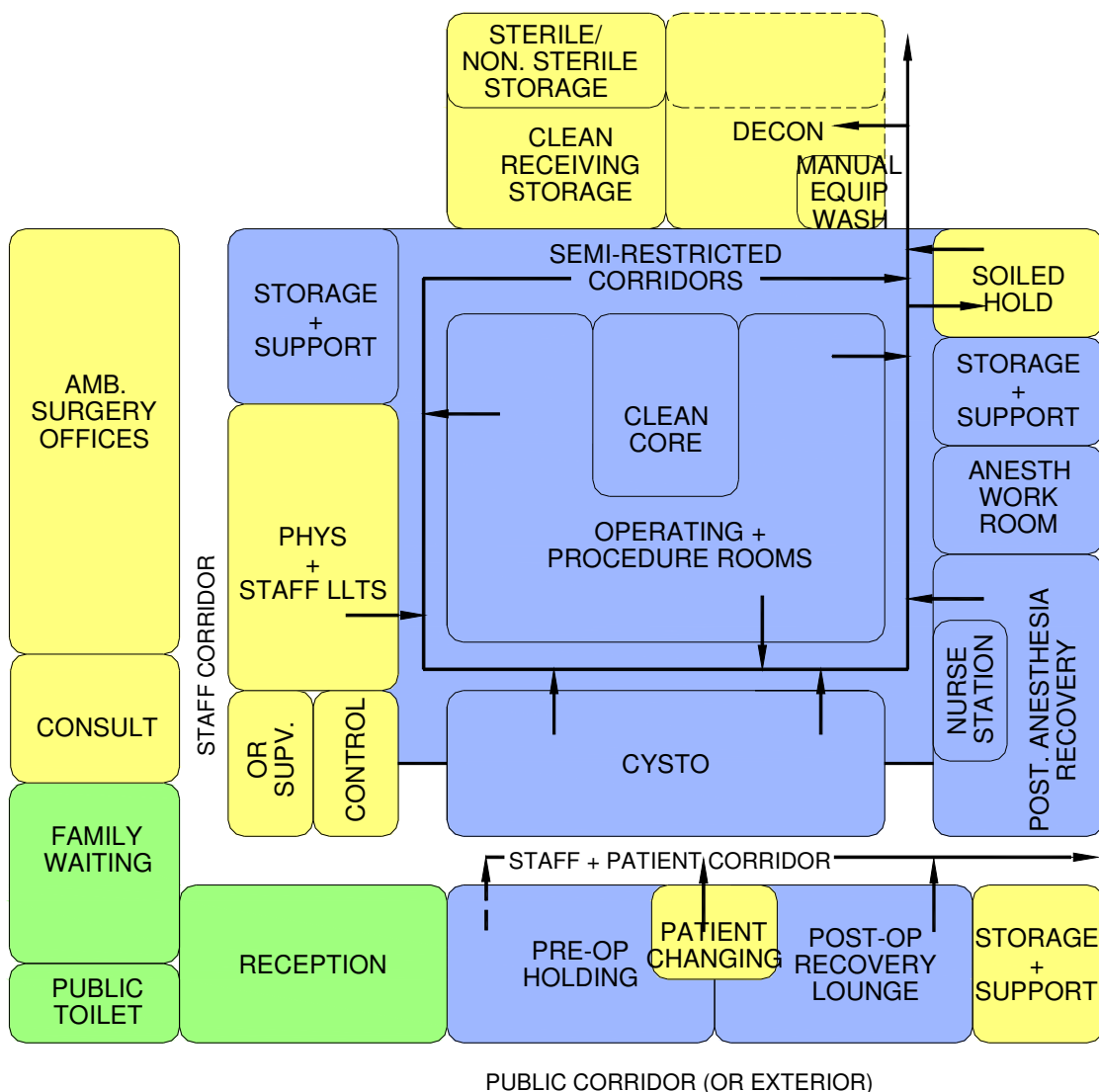
Post operative patients are transported from the Operating or Procedure room through the SRC and to either the P.A.R. or Post-op Recovery Lounge. When patients meet the criteria for discharge, they can proceed to Changing and then exit through Reception.

Surgical Staff Flow Diagram—Post OP



The surgical team leaves the Operating or Procedure room through the SRC.

Soiled Supplies And Equipment Flow Diagram



Soiled materials leave the Operating and Procedure Rooms by the SRC. Medical waste is bagged and taken to Soiled Holding prior to disposal. Soiled equipment and instruments are transported to Decontamination in SPD for reprocessing. Soiled linens are transported from the Operating and Procedure rooms, PAR and Recovery Lounge, Changing, and Locker rooms to appropriate Holding rooms prior to return to Laundry.

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Functional Relationships Matrix

The following diagram presents the proximity relationships of the various functional areas or spaces found in outpatient clinics in a matrix format.

Proximity Codes For Diagram

The degree of proximity that is desirable with other departments or areas that share a functional relationship with the Outpatient Clinic is indicated by a scale of 1 to 4 (1 representing the greatest level of adjacency). An “X” entered in the diagram represents a relationship where separation is desirable for the departments or areas in question.

Code	Proximity Relationship
1	Very Strong: Adjacent
2	Strong: Close, same floor
3	Moderate: Convenient, different floor acceptable
4	Weak: May be separated, limited traffic or communication necessary
X	Separation required or desirable



Functional Relationships Diagram

	Volunteer Service	Surgery Service	Supply, Processing, and Distribution	Service Organizations	Radiology Service	Pulmonary Medicine	Prosthetic and Sensory Aids Service	Police and Security Service	Physical Medicine and Rehabilitation Service	Pharmacy Service	Pathology and Laboratory	Outpatient Psychiatric Clinics	Medical Administration Service	Lockers, Toilets and Showers	Lobby	Eye Clinic	Environmental Management Service	Engineering Service	Endoscopy Suite	EEG Laboratory	Education Facilities	Dental Service	Clinic Management Suite	Cardiovascular Laboratories – Cardiology Clinic	Canteen	Audiology and Speech Pathology	Ambulatory Care (Exam / Treatment Modules)	Acquisition and Materiel Management Service	
Acquisition and Materiel Management Services			2					3								3													-
Ambulatory Care	3	3	3	1	2	4	3	2	3	1			1	1	1					3		3	4	2	2	2	2	-	
Audiology and Speech Pathology					X		3		2	3	X	3	3		X			X		X		3				X	-		
Canteen	3	X			X			2			X	4	3														-		
Cardiovascular Laboratories - Cardiology Clinic	3	3	3		3	2	4											2		4			3						
Clinic Management Suite		4			4	3			4		4		4		3									-					
Dental Service			3				4			4			3				4	4											
Education Facilities												3																	
EEG Laboratory	4	3	4			4					4																		
Endoscopy Suite		2	2																										
Engineering Service		X	3		3	2		3											-										
Environmental Management Service			3		3			3					3					-											
Eye Clinic			3		2		3			2																			
Lobby	3	X		2			1	1	2			4																	
Lockers, Toilets and Showers																													
Medical Administration Service					2		2	2	2	3																			
Outpatient Psychiatric Clinics								3																					
Pathology and Laboratory Medicine	3				X																								
Pharmacy Service	3	3	3		2		3	2																					
Physical Medicine and Rehabilitation Service							2																						
Police and Security Service		3	3																										
Prosthetic and Sensory Aids Service		X																											
Pulmonary Medicine		4	4		3																								
Radiology Service		3																											
Service Organizations	2																												
Supply, Processing, and Distribution		1	-																										
Surgery Service		-																											
Volunteer Service	-																												

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