

1.2 Service Delivery Model Report

1.2.1 Master Program

Windsor Regional Hospital (WRH) is one of two major acute care hospitals in Windsor, a population of about 323,342 residents. The Hospital services the primary catchment area of Windsor, Tecumseth and Essex County.

The Hospital is regarded as a leader in meeting the needs of the community in innovative and efficient ways, while keeping a focus on the patient and family. The facilities at the Metropolitan Campus were originally constructed in 1927 and have had additions in the 1950's, 1960's, 1970's and late 1990's. The continued additions have made the facility difficult to navigate and many of the clinical areas have remained untouched. Although the building is well maintained, its age and design are not conducive to today's health care practices. For example

- only 11 per cent of the patient bed rooms are private rooms making infection control, patient safety, privacy and confidentiality an increasing concern
- several clinical departments are seriously undersized. This limits the Hospital in accommodating the current volumes, or implementing current technology and best practice models of care.

There continue to be serious deficiencies within many program and departmental areas. Several areas are grossly undersized, important adjacencies are lacking and the physical layout are not conducive to changes in technology and efficient patient focused care.

1.2.1.1 Components of the Master Program

The Master Program provides key information

- to inform the Master Plan
- to develop the Business Case
- for the MOHLTC to determine the scope of the Phase I project and subsequent phases.

The cornerstone of the WRH Master Program is to

- provide a safe environment for patients, staff and volunteers
- address major deficiencies in key clinical areas, including the emergency, diagnostic imaging, acute inpatient units and the surgical suite
- provide the necessary facilities to meet its academic obligations particularly related to the new medical school
- accommodate service volume and growth needs including meeting wait time objectives
- provide an environment that supports high quality patient and family centred care.
- increase the effectiveness and efficiency of patient and staff flow within the facility

WRH is committed to working collaboratively with stakeholders to advance this project. This document reflects that commitment in its approach, methodology and projections.

The process to develop the Master Program involved several steps

- review of the Erie St. Clair LHIN Integration Plan
- development of volume projections by HCM Group, Inc. for the timeframes (2013/14, 2018/19 and 2028/29)
- meetings with the program and department leads to develop vision, assumptions and directions
- tours of the facilities to record the deficiencies
- development of space projections, planning directions and draft documents.

The planning approach and directions are consistent with contemporary hospital planning

- the volume projections are based on established methodology, applied by HCM Group, Inc, across many Ontario hospitals
- the program directions are consistent with LHIN and MOHLTC priorities and best practices
- the program and space projections reflect contemporary guidelines including the new Ontario Building Code (where known) and space recommendations from the MOHLTC's Generic Output Specifications (GOS).

The Master Program outlines

- the scope of patient service, including future initiatives
- historical and projected workload for the approved time horizons
- adequacy of existing facilities, including quantity, organization of components, relationships and adjacencies, and environment
- directions for the Master Plan
- current and projected major room elements
- current and projected space requirements (in departmental gross square feet).

The Master Program recommends 685,000 DGSF for 2018/19 to address major deficiencies and provides the environment for contemporary service delivery. The areas of largest growth are found in the clinical, diagnostic areas, and therapeutic areas with an increase of 68 per cent and in the inpatient units with an increase of 55 per cent.

Current and Future Service Delivery Model

Planning Context

WRH provides a range of primary, secondary and tertiary services for its catchment area. WRH has developed a role as a community teaching hospital through partnership with the University of Western Ontario, School of Medicine. In addition, the Hospital plays an important role in the region by providing tertiary level of care in maternal newborn services and cancer services.

The Hospital has been careful to ensure its programs and services are aligned with MOHLTC strategic directions and supports the provincial wait times strategy.

Population

The demand for WRH patient care services is influenced by population growth and aging. Table 1 presents current and projected population by age group for Essex County over next 20 years.

Table 1: Population Projections for Essex County

Age Cohort	2009	2014	% Change to 2014	2019	% Change to 2019	2029	% Change to 2029
0-14	71,521	67,933	-5.0%	67,694	-5.4%	69,519	-2.8%
15-19	27,752	27,677	-0.3%	25,215	-9.1%	24,601	-11.4%
20-44	143,865	143,117	-0.5%	143,408	-0.3%	141,833	-1.4%
45-64	109,392	118,172	8.0%	123,336	12.7%	118,690	8.5%
65-74	28,580	34,736	21.5%	41,154	44.0%	54,493	90.7%
75-84	19,141	19,366	1.2%	21,550	12.6%	31,959	67.0%
85+	6,935	8,198	18.2%	8,754	26.2%	10,747	55.0%
Total	407,186	419,199	3.0%	431,111	5.9%	451,842	11.0%

Source: Ministry of Finance Population Projections (Spring 2008 Release).

The population of Essex County

- is projected to grow by 11.0 per cent over the next 20 years
- will have a much higher growth of seniors over the next 20 years, with
 - 90.7 per cent growth in the population aged 65 to 74
 - 67.0 per cent growth in the population aged 75 to 84
 - 55.0 per cent growth in the population aged 85 and over.

Overall, the percentage of the population 65 plus, will rise from 13.4 per cent in 2009 to 21.5 per cent in 2029.

Although Essex County is not expected to grow dramatically in total population, the extremely high growth in the population aged 65 and older will have a major impact on WRH resources. Seniors use on average four times the amount of health care resources relative to the average population.

WRH Strategic Plan (2008-2012)

The Hospital's Strategic Plan (2008-2012) includes the organization's

- Vision
 - Outstanding Care: No Exceptions!
- Mission
 - We provide outstanding care with compassion.

The strategic directions include

- Embed patient quality and safety in our culture.
- Cultivate an environment of accountability and transparency.
- Build and sustain financial health.
- Enhance our status as employer of choice.
- Distinguish ourselves through superior performance, innovation, and exceptional customer service.
- Strengthen our relationships with external partners.

The Master Program identifies clinical and support services directions that strive to achieve the strategic directions of the Hospital.

Redevelopment of the facilities is necessary to accommodate service delivery changes and meet the needs of the community. For example

- providing a higher proportion of single bed inpatient rooms will improve the quality of patient care and safety of patients, families and staff
- expanding some of the clinical areas that are currently at capacity (e.g., emergency department, diagnostic imaging) will allow the organization to meet the needs associated with an aging population and make the Hospital more attractive as a place of employment
- employing the use of technology and information systems will increase the efficiency of services and promote financial sustainability
- providing the required space for student education will support the Hospital's partnerships with South Western Ontario Medical Education Network (SWOMEN), University of Windsor and St. Clair College.

LHIN Priorities

The proposed scope and organization of services in this Master Program is in alignment with the Erie St. Clair LHIN priorities. The Hospital has involved LHIN representatives in the Master Program development and will continue to create innovative and collaborative initiatives toward the achievement of the priorities. The LHIN priorities include

- chronic disease management
- reducing dependence on hospital based services
- supporting people at home
- back office/administrative integration
- system navigation
- health human resources
- health promotion and illness prevention
- timely access to appropriate care and services

As referenced earlier, the Hospital has consulted with the LHIN on several occasions regarding its redevelopment plans to ensure they address LHIN expectations. Further consultations are planned to keep the LHIN fully apprised and involved in the WRH redevelopment.

Clinical Program/Service Directions

The program/service directions that have been reflected in the Master Program space and activity projections include

Cancer

- Plan for 2.5 to 3 per cent growth per year.
- Implement a disease site model/clinic approach to complex cases (i.e., head and neck, lung, skin).
- Continue to review the need for bone marrow transplant service in the future.
- By 2017/18 a 4th radiation bunker will be required; however, if a larger percentage of Chatham-Kent residents are served in Windsor, the 4th bunker will be required sooner. A 5th 'swing' bunker is planned.
- Expand the palliative care services (i.e., collaborative practice) which will start with oncology and expand to all patients requiring improved symptom management.
- Expand the clinical trials as part of Windsor Research Institute (in collaboration with the University of Windsor).

Cardiology

- Create new services
 - loop recorder monitor application
 - 24 hour blood pressure monitoring
 - urgent cardiology clinic
 - stress echocardiography

Chronic Disease Management

- Consider developing a partnership with community providers to deliver diabetes education within the community.

Emergency

- Improve wait times, operational efficiency and patient and family centred care by addressing significant facility deficiencies.
- Increase the number of telemetry/monitored beds.
- Accommodate a higher percentage of triage Level 2 visits because of higher patient acuity and adjustments in triaging education of nurses.

Endoscopy

- Expand the colon screening program according to new cancer screening guidelines.

Medical Day Care

- Expand the sleep lab from 3 beds operating 5 days per week to 6 beds, 7 days per week.
- Medical day care will increase from 2 days per week to 5 days per week.

Critical Care Unit

- Patients requiring chronic ventilation will be transferred to the Western Campus or elsewhere in the community.

Maternal Newborn

- Reorganization of services within the LHIN and the province may result in an increase in maternal and neonatal transfers from Chatham, Sarnia and other surrounding areas. This could result in the following:
 - a total of 24 NICU bassinets
 - approximately 500 additional births

Paediatrics

- Assume an increase in outpatient clinics (i.e., cardiology and allergy by 100 per cent).
- Develop an outpatient program for eating disorders.

Workload Projections

Workload/activity projections were developed by HCM Group, Inc. in consultation with WRH program leaders and senior administration.

Planning Horizon

Projections were developed for 2013/14, 2018/19 and 2028/29. This was achieved by applying drivers (population-based percentage changes from the 2008/09 base year to the projection years for a given program/service) to the relevant MIS Trial Balance statistics.

Methodology Overview

The methodology incorporates population-based volume projections that are highly sensitive to age, sex and patient residence characteristics and hence reflects each hospital program/service's catchment area and patient demographics. In summary, the population-based drivers are natural growth factors specific to each program/service.

This methodology has been used for several (perhaps most) Ontario hospitals and has been reviewed with the MOHLTC. In essence, the volume projection methodology marries actual volumes by functional centre from (edited) Management Information System (MIS) Trial Balance data, with population change drivers to develop future volume projections. Drivers are developed from CIHI Discharge Abstracts Database (DAD) and National Ambulatory Care Reporting System (NACRS) (i.e., patient-specific records) unique to each program/service's volume indicator. The known or anticipated changes to overall role (such as introducing a new service) are incorporated to fine-tune the projections with the organization.

Data Sources

MIS Trial Balance files from 2004/05 to 2008/09 (Q3) were obtained from WRH. MIS Trial Balance data don't have the advantage of a consistent format across the fiscal year, functional centre and secondary account for relevant statistics (e.g., patient days and discharges).

CIHI DAD and NACRS patient-specific data for 2007/08 were obtained from WRH. Drivers are developed from DAD and NACRS records, as these contain the detailed population characteristics (e.g., age, sex, municipality of residence) and utilization statistics (e.g., number of cases and days).

Ministry of Finance five-year age cohort, sex and census division (CD) population projections (based on the 2006 Census) were used for the projection methodology.

Methodology

Drivers represent mathematical multipliers that capture the projected change in activity based on population demographics. To calculate the drivers, projected population percent changes at 5-year age, sex and census division (CD) level were applied to the CIHI DAD and NACRS data, to get future volumes. For example, the patient days for 40-44 year old females living in Windsor (and discharged from WRH in 2008/09) would increase by 5 per cent from 2008/09 to 2013/14 if the population for 40-44 year old females in Windsor is expected to change from 30,000 to 31,500 from 2008/09 to 2013/14.

Multiple drivers were developed to be sensitive to projecting activity by program/service (or as specific as data allow). Growth was applied to residents of Essex County; other cases were kept constant (no increase or decrease as populations of outlying areas change (insignificant and/or irrelevant)).

Beds were projected using occupancy rate targets. It is important to note that although patient days change directly with the drivers, the actual change in beds may appear different. For example, if the current occupancy was at 75 per cent, applying a target occupancy of 85 per cent would fill beds first to reach 85 per cent before adding new beds (the methodology will even subtract beds if it cannot achieve the target occupancy). Conversely, if current occupancy was at 95 per cent, applying a target occupancy of 85 per cent would add beds first to achieve 85 per cent, then add new beds for growth.

Diagnostic and therapeutic services were adjusted in line with relevant inpatient and ambulatory care services. The detail in the projection tables have specific line items within a diagnostic/therapeutic functional centre for procedures/attendances and workload associated with acute, emergency and other outpatient clinics and specific dynamic drivers are associated with these. For example, if acute patient days increase/decrease by X per cent, the associated workload indicator in each diagnostic and therapeutic functional centre changes by the same percentage.

Adjustment

Projections incorporated natural growth as described above, as well as a number of adjustments in consultation with the organization to reflect the clinical program/service directions.

Clinical Efficiencies

The methodology also incorporated a one per cent reduction per year to medical, surgical and obstetric inpatient days to acknowledge historical provincial trends, reducing alternate level of care (ALC's), the 'healthier than today' argument and other clinical efficiencies.

Summary of Workload Projections

The tables presented in this section summarize the workload projections developed by HCM Group, Inc.

Current and Projected Beds

A summary of the historical and projected beds is presented in Table 2. Bed requirements are projected to remain relatively stable. Beds will increase slightly initially by about 2 per cent from 2008/09 to 2018/19 (an increase of 5 beds) and by 21.5 per cent by 2028/29 (60 beds). The increase in beds will address the future needs associated with population growth and aging. Maternal newborn beds and paediatric beds decrease in the projections from the current activity as a result of increasing the target occupancy for those areas.

Site planning should reflect the long term requirements of the site to 2018/19 and to 2028/29.

Table 2: Summary of Current and Projected Beds

Functional Centre	Historical			Target Occupancy	Projected		
	2006/07	2007/08	2008/09 ^a		2013/14	2018/19	2028/29
Medical	132	135	130	95%	135	151	192
Surgical	53	51	48	90%	46	50	59
Critical Care ^b	21	21	21	80-85%	21	23	28
Maternal Newborn	49	49	49	75%	36	37	36
Paediatric	33	33	25	60%	17	17	17
Emergency equivalent beds	4	6	6	95%	6	6	7
Total	292	295	279		261	284	339
Level I/II Nursery	--	--	--		8	8	8
Level III Nursery	18	18	18		22	23	22

^a 3/4 year, annualized.

^b Medical/surgical and coronary care.

Source: WRH and HCM Group, Inc.

Current and Projected Workload by Department/Service

Table 3 presents historical and projected activity by department/service.

Table 3: Summary of Current and Projected Volumes

Program	Indicator	2006/07	2007/08	2008/09 ^a	2013/14	2018/19	2028/29
Ambulatory Care Services							
1	Cancer Program						
	• Systemic pre and post treatment	28,844	25,226	24,839	28,795	33,382	44,862
	• Radiation pre and post treatment	6,497	6,344	5,436	6,302	7,306	9,818
	• Oncology treatment outreach clinic	14,545	15,039	14,632	16,962	19,664	26,427
	• Radiation treatment	19,293	20,573	20,860	24,182	28,034	37,675
	• Procedures	NA	590	NA	704	817	1,098

Table 3: Summary of Current and Projected Volumes (Cont'd)

Program	Indicator	2006/07	2007/08	2008/09 ^a	2013/14	2018/19	2028/29
2 Chronic Disease Management	Clinics (visits)						
	• O/V AIDS clinic	248	239	347	357	367	385
	• HIV	2,789	4,030	4,317	4,439	4,569	4,794
	• Diabetes	3,112	3,042	3,268	3,993	4,770	6,309
3 Endoscopy Unit	Procedures						
	• Total surgical	5,958	7,261	7,385	8,038	8,705	9,772
	• Inpatient	707	893	936	1,019	1,103	1,239
	• Outpatient	5,251	6,368	6,449	7,019	7,602	8,533
4 Medical Day Care/Sleep Lab	Visits						
	• Medical day care	727	665	820	904 ^b	999 ^b	1,191 ^b
	• Sleep lab	--	--	--	2,100	2,100	2,100
5 Medical/Surgical Clinics & Procedures	Clinics (visits)						
	• Fracture	5,194	6,867	7,452	8,253	9,037	10,631
	• Urology	1,323	1,219	1,345	1,490	1,656	2,019
	• Pre-assessment	8,262	8,827	8,693	8,985	9,359	10,031
	• Minor surgery	3,605	3,741	3,477	3,786	4,092	4,517
	• Gynaecology	1,129	1,106	1,273	1,324	1,366	1,453
	• Urgent respiratory clinic	32	149	173	193	214	268
	• Urgent cardiology clinic		162	276	309	343	428
	• Plastic	7,758	8,448	8,141	8,611	8,924	9,237
	• New Clinics	--	--	--	7,500	8,750	10,000
	- bariatric						
	- prostate						
	- soft tissue						
	- INR						
	- urgent consultation						
Inpatient Units							
6 Critical Care Unit	Medical/Surgical						
	• Inpatient days	4,088	4,704	4,359	4,821	5,348	6,459
	• Inpatient separations	429	400	503	550	602	715
	• Beds						
	• - Level 2/3			14	14	14	17
	• - chronic ventilation			2	2	3	4
	• - total	16	16	16	16 ^b	17 ^b	21
	• Occupancy (%)	70.9%	80.5%	74.2%	85.0%	85.0%	85.0%
	• ALOS	9.5	11.8	8.7	8.8	8.9	9
	Coronary Care						
	• Inpatient days	1,398	1,480	1,303	1,448	1,607	2,022
	• Inpatient separations	125	130	176	195	215	263
	• Beds	5	5	5	5	6	7
	• Occupancy (%)	76.6%	81.1%	71.4%	80.0%	80.0%	80.0%
	• ALOS	11.2	11.4	7.4	7.4	7.5	7.7

1.2 Service Delivery Model Report

Table 3: Summary of Current and Projected Volumes (Cont'd)

Program	Indicator	2006/07	2007/08	2008/09 ^a	2013/14	2018/19	2028/29
7 Maternal Newborn Unit	Labour, Delivery, Recovery, Postpartum						
	• Patient days	12,967	12,746	12,211	12,254	12,506	12,242
	• Separations	4,541	4,525	4,412	4,434	4,526	4,421
	• Beds	49	49	49	42	43	42
	• Occupancy (%)	72.4%	79.0%	82.6%	80.0%	80.0%	80.0%
	• ALOS	2.9	2.8	2.8	3	2.8	2.8
	Births	3905	3803	3,728	3,746	3,824	3,735
	NICU						
	• Patient days	5,387	5,933	6,417	6,440	6,572	6,433
	• Separations	397	436	433	435	444	434
	• Beds	18	18	18	22	23	22
	• Occupancy (%)	80.2%	86.5%	93.0%	80.0%	80.0%	80.0%
	• ALOS	13.6	13.6	14.8	14.8	14.8	14.8
	Maternal - Outpatient						
	• Triage	NA	NA	(6,564)			
	• Triage (elective C-section)	NA	NA	460			
	• Women's health clinic	NA	NA	3,338			
	• Maternal newborn clinic	NA	NA	7,659			
	• Rhogam clinic	NA	NA	536			
	• Maternal fetal medicine clinic	NA	NA	3,061			
	• Obstetrical clinic	NA	NA	10,813			
	Total- maternal outpatient visits			25,867	26,037	26,562	25,985
	Newborn - Outpatient (visits)						
• NICU clinics (including NICU follow-up, neurodevelopment and synergist programs)	NA	NA	1,997	2,167	2,220	2,254	
• Dietitian follow-up	NA	NA	358	389	398	404	
• Outpatient ROP	NA	NA	59	64	66	67	
8 Medical/Surgical Inpatient Services	Medical						
	• Patient days	46,879	46,565	43,387	48,075	53,024	65,613
	• Separations	5,493	5,564	5,523	6,159	6,832	8,533
	• Beds	132	135	130	135	151	192
	• Occupancy (%)	97.2%	96.0%	90.3%	95.0%	95.0%	95.0%
	• ALOS	8.5	8.4	7.9	7.9	7.7	7.8
	Emergency Equivalent						
	• Patient days	1,158	1,890	1,935	2,059	2,198	2,503
	• Separations	138	204	228	243	259	295.0
	• Beds	3.5	5.8	5.9	6.0	6.0	7.0
	• Occupancy (%)	95.0%	95.0%	95.0%	95%	95%	95.0
	Surgical						
	• Patient days	17,682	17,411	16,011	14,877	16,244	19,452
	• Separations	4,232	3,939	3,744	4,049	4,370	5,038
	• Beds	53	51	48	46	50	59
	• Occupancy (%)	90.0%	90.5%	90.4%	90.0%	90.0%	90.0%
	• ALOS	4.2	4.4	4.3	4.3	3.7	3.9

Table 3: Summary of Current and Projected Volumes (Cont'd)

Program	Indicator	2006/07	2007/08	2008/09 ^a	2013/14	2018/19	2028/29
9 Paediatrics	Level I/II nursery						
	• Patient days	NA	NA	1,825	1,831	1,869	1,830
	• Separations	NA	NA	123	124	126	123
	• Bassinets	NA	NA	8	8	8	8
	• Occupancy (%)	NA	NA	62.5%	65.0%	65.0%	65.0%
	• ALOS	NA	NA	14.8	14.8	14.8	14.8
	Paediatric						
	• Patient days	5,708	4,639	3,899	3,741	3,690	3,740
	• Separations	2,328	1,935	1,731	1,669	1,660	1,685
	• Beds	33	33	33	17	17	17
• Occupancy (%)	47.4%	40.1%	32.2%	60.0%	60.0%	60.0%	
• ALOS	2.5	2.4	2.3	2.2	2.2	2.2	
Clinical, Diagnostic and Therapeutic Services							
10 Allied Health Services	Total Attendance Days						
	• Clinical nutrition	17,602	16,944	19,277	20,937	22,778	27,194
	• Social work	37,713	34,887	26,604	28,981	31,638	37,752
	• Audiology	3,115	2,981	3,491	3,726	3,991	4,517
	• O/V audiology	4,502	4,222	4,088	4,006	4,104	4,168
11 Cardiac, Diagnostic and Respiratory Services	Respiratory Services Procedures	226,408	229,245	229,248	252,568	277,031	339,011
	Pulmonary Function Tests	N/A	N/A	3,428	3,777	4,142	5,069
	Cardiac Diagnostics						
	• Ambulatory monitoring (holter)	525	543	536	601	665	830
	• Exercise stress testing	7,597	6,974	6,892	7,727	8,552	10,672
	• Echocardiography	3,465	4,077	4,500	5,045	5,583	6,967
	• Electrophysiology	66	75	48	54	60	74
	• ECG	24,431	28,963	28,564	31,203	33,873	40,444
12 Diagnostic Imaging	Total Exams						
	• Radiography	65,794	59,167	62,177	66,501	71,288	81,933
	• Mammography	NA	NA	7,500	7,979	8,504	9,608
	• Computed tomography	25,555	26,481	27,512	35,113	41,703	53,384
	• Ultrasound	28,772	26,138	26,807	31,077	35,160	40,805
	• Nuclear medicine	8,325	7,925	7,576	8,231	8,928	10,407
	• Magnetic resonance imaging	4,939	6,695	7,577	10,140	12,636	16,982
13 Emergency	Total Emergency (visits)						
	• Outpatient visits (scenario A)	57,779	62,323	63,611	65,775	68,321	72,921
	• Visits by triage level	-	62,180	-	65,775	68,321	72,921
	- 1 resuscitation	-	332	-	366	395	458
	- 2 emergent	-	8,019	-	8,558	8,969	9,809
	- 3 urgent	-	35,153	-	37,274	38,852	41,722
	- 4 semi-urgent	-	17,162	-	17,988	18,479	19,269
	- 5 non-urgent	-	1,514	-	1,589	1,626	1,663
	• Outpatient visits (scenario B)	-	62,323	-	72,381	75,185	80,244

Table 3: Summary of Current and Projected Volumes (Cont'd)

Program	Indicator	2006/07	2007/08	2008/09 ^a	2013/14	2018/19	2028/29
14 Pharmacy	Total Patient Workload	3,748,081	5,475,693	5,380,363	5,869,577	6,398,366	7,666,066
	• Inpatient	2,811,061	4,654,339	4,573,308	4,997,489	5,455,583	6,589,963
	• Outpatient	937,020	821,354	807,055	872,088	942,783	1,076,103
15 Pathology and Laboratory	Performed In-House						
	• Specimen procurement and delivery	200,887	212,101	322,287	344,986	371,165	428,577
	• Clinical chemistry	988,213	999,343	1,058,752	1,133,193	1,220,099	1,413,829
	• Haematology	340,082	345,684	362,555	388,479	418,710	486,151
	• Transfusion medicine	126,515	110,226	118,501	127,507	137,423	158,419
	• Anatomic Pathology	195,571		472,384	504,422	539,789	610,666
	• Anatomic pathology ^c	195,571	246,602	472,384	602,895	716,050	916,605
16 Surgical Services	Operating Rooms (cases)						
	• Total	15,298	15,686	15,625	16,363	17,204	18,816
	• Inpatient	4,282	4,080	3,885	4,201	4,534	5,228
	• Outpatient	11,016	11,606	11,740	12,162	12,670	13,588
	Post Anaesthetic Recovery Room (cases)						
	• Total	16,688	15,851	16,354	17,132	18,017	19,717
	• Inpatient	4,373	4,094	4,185	4,526	4,884	5,632
	• Outpatient	12,315	11,757	12,169	12,606	13,133	14,085
	Pre and Post Operative Care (day surgery visits)						
	• total	11,109	11,992	13,465	13,795	14,776	15,191

^a 3/4 year, annualized.

^b Excludes activity that will be transferred from emergency.

^c Forecast assumes higher growth rate than underlying patient drivers.

Source: Windsor Regional Hospital and HCM Group, Inc.

Summary of Program/Service Requirements

Table 4 identifies the major needs for change in each service and department, considering four key drivers: activity increases, space deficiencies, patient safety and new services. A more detailed assessment is included in each Master Program section.

Table 4: Major Need for Change by Service/Department

Service/Department	Activity Increases	Existing Space Deficiencies	Patient Safety	New Services
Ambulatory Care Services				
1 Cancer Program	✓	✓	✓	✓
2 Chronic Disease Management	✓	--	--	--
3 Endoscopy Unit	✓	✓	✓	--

Table 4: Major Need for Change by Service/Department (Cont'd)

Service/Department	Activity Increases	Existing Space Deficiencies	Patient Safety	New Services
4 Medical Day Care	✓	✓	✓	--
5 Medical/Surgical Clinics and Procedures	✓	✓	--	✓
Inpatient Units				
6 Critical Care Unit	✓	✓	✓	--
7 Maternal Newborn Unit incl. NICU	✓	✓	✓	✓
8 Medical/Surgical Inpatient Units	✓	✓	✓	✓
9 Paediatrics				
- inpatients	--	--	✓	--
- outpatients	✓	✓	✓	✓
Clinical, Diagnostic and Therapeutic Services				
10 Allied Health	✓	✓	--	--
11 Cardiac, Diagnostic and Respiratory Services	✓	✓	--	✓
12 Diagnostic Imaging	✓	✓	✓	✓
13 Emergency	✓	✓	✓	--
14 Pharmacy	✓	✓	--	✓
15 Pathology and Laboratory	✓	✓	--	✓
16 Surgical Services	✓	✓	✓	--
Support and Administrative Areas				
17 Administration	✓	✓	--	--
18 Admissions	✓	✓	✓	--
19 Environmental Services	✓	✓	--	✓
20 Finance and Patient Safety and Quality	✓	✓	--	✓
21 Food and Nutrition	✓	✓	--	✓
22 Foundation/Public Affairs	--	✓	--	--

Table 4: Major Need for Change by Service/Department (Cont'd)

Service/Department	Activity Increases	Existing Space Deficiencies	Patient Safety	New Services
23 Health Records and Telecommunications	--	✓	--	✓
24 Infection Prevention and Control	✓	✓	--	✓
25 Information Services	✓	✓	✓	--
26 Maintenance, incl. Biomedical Engineering	✓	✓	--	✓
27 Material Management	✓	✓	✓	✓
28 Medical Staff Facilities	--	✓	--	--
29 Organizational Development	--	✓	--	--
30 Patient Representative/CCAC	✓	✓	✓	--
31 Public Areas	✓	✓	--	✓
32 Security	✓	✓	--	✓
33 University of Windsor Medical School	✓	✓	--	--
34 Volunteer Services	--	✓	--	--

Space Requirements

Current and Projected Space

Table 5 identifies current and projected space requirements for each service and department. Space recommendations reflect

- Agnew Peckham’s current space planning guidelines for contemporary facilities
- a contingency (in the gross to net ratios) to accommodate changes in the new Ontario Building Code
- application of selected space recommended through the Generic Output Specifications (GOS) process, which will require review and discussion with the MOHLTC, at the time of writing the functional program.

The implications of infectious disease prevention and control are also considered in the Master Program. While these will be more fully addressed in detailed planning, major requirements include

- 80 per cent of inpatient acute beds will be accommodated in single 1-bed rooms
- all bed rooms will have a 3 piece ensuite washroom
- each inpatient unit will have two airborne precautions rooms including an anteroom and negative pressure room
- additional airborne precautions rooms will be planned in other clinical areas such as critical care, surgical suite, ambulatory care and diagnostic services
- a proportion of medical day care and oncology treatment spaces will be enclosed
- open patient treatment areas will have sufficient separation between the areas
- patient and family waiting areas will have capacity to separate potentially infectious patient and will have sufficient separation between seats
- handwash stations will be planned throughout the facility

Overall, to accommodate new and expanded programs, the projected workload and aligning the facilities to contemporary standards for health care delivery, the Master Program reflects an increase in space at WRH – Metropolitan site as follows:

- from 2008/09 to 2013/14: a 45 per cent increase
- from 2013/14 to 2018/19: a 4 per cent increase
- from 2018/19 to 2028/29: a 17 per cent increase

Key Adjacencies, to be considered in the Master Plan, are outlined in Figure 1.

1.2 Service Delivery Model Report

Table 5: Summary of Space Allocation (CGSF)

	Current	2013/14	Projected		2028/29
			2018/19		
Ambulatory Care Services					
1 Cancer Program	62,395	73,000	84,000		99,000
2 Chronic Disease Management	6,855	6,855	6,855		6,855
3 Endoscopy Unit	3,695	0 ^a	0 ^a		0 ^a
4 Medical Day Care/Sleep Lab	3,040	7,500	7,500		7,500
5 Medical/Surgical Clinics and Procedures	11,135	22,000	22,000		31,000
Subtotal - Ambulatory Care Services	87,120	109,355	120,355		144,355
Inpatient Units					
6 Critical Care Unit	14,545	22,000	22,000		31,000
7 Maternal Newborn Unit incl. NICU	63,575	65,500	66,100		77,800
8 Medical/Surgical Inpatient Units	63,160	147,000	147,000		196,000
9 Paediatrics	28,760	28,000	28,200		28,600
Subtotal - Inpatient Units	170,040	262,500	263,300		333,400
Clinical, Diagnostic and Therapeutic Services					
10 Allied Health	3,960	4,365	5,250		5,250
11 Cardiac Diagnostic and Respiratory Services	6,275	7,200	7,200		7,200
12 Diagnostic Imaging	21,490	32,585	33,085		33,785
13 Emergency	15,085	26,500 - 28,500	26,500 - 28,500	27,500 -	29,500
14 Pharmacy	4,610	3,200	3,200		3,550
15 Pathology and Laboratory	13,525	19,500	20,750		21,400
16 Surgical Services					
a) Surgical Suite	35,860	69,000	72,500		78,000
b) Central Sterile Processing (CSR)	7,750	10,000	11,500		12,750
Subtotal - Clinical, Diagnostic and Therapeutic Services	108,555	172,350 - 174,350	179,985 - 181,985	189,435 -	191,435
Support and Administrative Areas					
17 Administration (incl. Senior Admin, Nursing, HR, Program Managers)	12,155	14,495	14,495		15,120
18 Admissions	660	1,595	1,595		1,595
19 Environmental Services	2,770	4,350	4,350		4,850
20 Finance and Patient Safety and Quality	1,395	1,775	1,625		1,625
21 Food and Nutrition	19,805	19,500	20,875		24,225
22 Foundation/Public Affairs	1,310	2,085	2,165		2,165
23 Health Records and Telecommunications	4,790	4,600	4,950		5,200
24 Infection Prevention and Control	385	385	525		525
25 Information Services	1,010	1,550	1,550		1,550
26 Maintenance, incl. Biomedical Engineering	7,400	9,975	9,975		9,975
27 Materials Management	7,945	8,690	8,690		9,625
28 Medical Staff Facilities	570	950	950		950
29 Organizational Development, incl. Learning Resources, Meeting Rooms	7,715	10,180	10,180		10,180
30 Patient Representative/CCAC	835	1,050	1,150		1,250
31 Public Areas	14,590	21,590	21,590		22,590
32 Security Services	505	1,245	1,245		1,245
33 University of Windsor Medical School/SWOMEN	1,810	9,200 ^b	12,900 ^b		17,100 ^b
34 Volunteer Services	625	625	625		625
Subtotal - Support and Administrative Areas	86,275	113,840	119,435		130,395
Unassigned	3,495				
TOTAL	455,485	658,045 - 660,045	683,075 - 685,075		799,585

^a Included in Surgical Services

^b Includes centralized areas. Decentralized clinical areas are included in respective programs.

1.2.2 Human Resources Plan

The increases in workload will create an impact on the Hospital's human resources. A human resources plan has been developed based on the projected workload activity. These forecasts were completed for space planning purposes only and were based on 2008/09 actual staffing levels. The staffing projections are found in Appendix C as a component of the preliminary operating cost estimate. The estimates for FTE's are

- 2,537.44 FTE's for 2013/14
- 2,724.76 FTE's for 2018/19
- 3,168.62 FTE's for 2028/29

There are currently 2,425.82 FTE's (2008/09) employed at WRH Metropolitan Campus.

A more detailed human resources plan will be developed within subsequent stages of planning as the Hospital moves toward its desired future. As planning proceeds, detailed human resources plans, including staff recruitment and retention strategies will be established to reflect organization priorities.

This capital project will provide staff of WRH with a high quality work environment to support the Hospital's recruitment and retention strategies and allow it to continue to provide essential health care services to the geographic community it serves. It also positions WRH to assume increased volumes to better serve the community and to meet targets set by the MOHLTC as demographics and patient needs change.

1.2.3 Preliminary Operating Cost Estimates

Health care costs will be incurred within the Erie St. Clair LHIN to meet the growing demands for patient care, regardless of whether redevelopment occurs at WRH. However, WRH is an efficient facility as demonstrated over the years. With renewal of space and a continued focus on operational efficiency, the relative costs per unit of activity will be lower than current operations.

HCM Group, Inc. produced a cost analysis for the Hospital's projected workload for 2013/14, 2018/19 and 2028/29 as outlined in Appendix D. Costs include both direct and indirect operating costs, as well as the indirect cost of administrative and support service (including the central plant). The costs are presented in today's dollar (i.e., with no escalations or inflation). The operating cost estimates, as increases from 2008/09, are:

- \$14,439,000 for 2013/14
- \$36,221,000 for 2018/19
- \$87,345,000 for 2028/29

1.2.4 Options for Delivering the Changes in Service Delivery

There are selected opportunities to change the approach to service delivery as a result of the redevelopment.

The Hospital will establish a focused and enhanced ambulatory care program within the new facilities. Currently, ambulatory care is provided on a minimal basis however, a new facility will have dedicated space for providers to see patients on an outpatient basis, which will reduce the need for inpatient services.

Furthermore, the programs have woefully inadequate space in their departments, thereby limiting new program development and growth, in spite of demonstrated community needs. For example, medical day care is provided in the same space as bronchoscopy procedures. With new facilities, bronchoscopy procedures will be located with other ambulatory procedures (such as cystoscopy) and closer to the surgical day care for a more efficient model of care.

Developing a comprehensive ambulatory care program will provide an opportunity to create innovative services in partnership with other programs and community based agencies. In addition, there will be a further opportunity to shift services from an inpatient to an outpatient basis, thereby reducing inpatient service demands and providing better coordination of care.

With expanded surgical suite capacity, the Hospital will reorganize the current model of delivery of some urological procedures. A range of procedures will be collocated in an ambulatory procedures unit and will share preparation and recovery space with the operating rooms.

The Hospital has limited capacity for patient teaching within its current facilities. As a recently designated facility for medical education as part of South Western Ontario Medical Education Network (SWOMEN), the Hospital is required to provide facilities appropriate for a large number of medical students. Spaces include not only support spaces, such as lockers, conference rooms and lounges, but space on the inpatient units and other clinical areas. The current facilities were never designed with this purpose in mind, and as a result, it will be very difficult to accommodate the large number of students approved for the campus.

Some of the support spaces (e.g., lounges, conference rooms, lockers and on-call rooms) can be accommodated through inexpensive construction on the site, but the full requirements would be difficult to achieve without renovating or redeveloping the current facilities.

The Hospital was able to determine areas for potential savings that could be accommodated by a new facility. Some of the areas that will allow for potential integration within the Hospital and the local region including:

- operational saving in clinical and support areas through better design (e.g., 36 bed inpatient units twinned with another 36 bed inpatient unit for flexibility in cohorting patients with similar needs and better use of staff)
- regional model of logistics and materials management including group purchasing, shared warehouse, just-in-time distribution and outsourced linen system
- regional medication (pharmacy) distribution to become a regional model including group purchasing, centralized manufacturing, shared warehouse, automated picking system and just-in-time distribution
- centralized call centre for bookings, scheduling patients, registration and environmental services requests/dispatch
- integration of environmental services with admitting

A new/redeveloped facility would provide the opportunity to explore, plan and implement improved and less costly ways of delivering support services.

Planning for staff work space including patient teaching will facilitate improved patient centered care and support staff recruitment and retention. The Hospital has moved to e-learning to better support staff development. There is a desire to encourage placement of medical students (family physicians) which will require further support areas.

Sufficient space for community providers such as the CCAC is important to facilitate collaboration and enhanced integration of service delivery. The Hospital participates in and supports many regional initiatives and space for other providers will enhance many of these partnerships.