Delivering a Healthy WA

METROPOLITAN CLINICAL SERVICES MASTERPLAN

RENAL MEDICINE SERVICES

WORKING GROUP

Department of Health
November 2005

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SECTION 1: WHOLE OF SYSTEM PLANNING PRINCIPLES

1. Principles That Underpin Clinical Service Planning

The Reid report highlighted the need for change in the public health system due to:

- An ageing and growing population,
- Widening gaps in the health status between the wealthy and the poor,
- Escalating demands for emergency care and hospital beds,
- An emphasis on tertiary hospital care,
- Projected workforce shortages,
- Rapidly changing demographics in the metropolitan areas,
- Significant increases in demand for mental health, aged care and rehabilitation services, and
- Increasing difficultly in continuing to fund the escalating costs of health care.

In order to address these issues the Reid Report made a significant number of recommendations to improve health services[1] as well as highlighting measures for achieving financial sustainability, including the need for:

- initiatives to keep people out of hospital through improved health promotion, prevention and community based care,
- shifting the balance from high cost tertiary care to either secondary based care or more significantly to primary / community care,
- improving clinical practices in hospitals – focusing on reducing length of stay, increasing day of surgery admissions, increasing day procedures and improved utilisation reviews,
- achieving greater efficiencies in support services, and
- improving the revenue base.

The assessment of the implications of these reform recommendations are reflected in the assumptions and demand projections that underpin the Clinical Services Framework 2005-2015 (CSF) - refer to the HRIT web link for this document. Consequently, in order to deliver the outcomes identified in the Reid report and the subsequent CSF, it is important that:

a) the reform principles are clearly articulated and

b) the financial parameters are well understood by all stakeholders

The information in the following table summarises the key principles and parameters that will be used to guide the development of the clinical services planning going forward.

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[1] The Health Reform Implementation Taskforce is currently implementing these reforms (refer to www.health.wa.gov.au/HRIT/home/ for details)

Major Services Reform Principles	Objectives
Primary and community care service strategies shall complement and where necessary integrate with Hospital Emergency and Ambulatory Care functions to avoid unnecessary hospital admissions.	To reduce the demand for hospital beds / care by ensuring patients are actively assessed, managed/treated prior to entry into a hospital inpatient setting.
Average length of stay within the acute hospital setting shall be reduced to applicable interstate / international best practice benchmarks.	To implement strategies such as clinical guidelines, early discharge and home support that will result in the patient minimising his / her time in an acute hospital bed. Concentration on ambulatory models of care to significantly increase the proportion of same day patient treatment (less than 23 hours).
Health care shall be provided in the most appropriate setting.	To reduce the current over emphasis or reliance on the acute care environment by maximizing the use of: • ambulatory care, • sub-acute care, • patient hotel or • other transitional care settings. To reduce emphasis on treatment in tertiary hospitals by treating patients closer to their homes in general and secondary hospitals.
New models of care are to be developed using an evidence based and patient centric approach.	Clinical pathways to be developed that: • integrate across specialties / sub-specialties, • promote the whole continuum of care, and are standardized for common disorders
Ensure patient safety and quality control principles underpin all new models of care.	New models of care and clinical pathways must continue to improve upon patient safety and the quality of health services provided to patients.
System Management Principles	Objectives
All quaternary and nominated tertiary services, shall be planned and coordinated on a State-Wide basis	It is essential that unnecessary duplication of services in each area is avoided and that unique services are integrated via pathways that span the north, south and where appropriate

	women, children and regional. Where necessary joint appointments or area based credentialing shall facilitate the provision of staff to complement this integrated clinical approach.
All other tertiary and secondary services are to be planned and coordinated on an area basis.	Achievement of effective role delineation between the respective tertiary hospitals and their secondary counterparts within each area.
Acknowledge future workforce limitations and structure the clinical service plans to take into consideration these workforce realities.	Develop new workforce roles and organisational structures that will help address workforce issues (e.g. multi skilling).
Acknowledge the importance of workforce training.	Develop workforce training initiatives that make better use of the limited clinical training positions and resources (e.g. virtual training, mock wards, trainee staff rotation etc)
Acknowledge the importance of forward planning and the impact that technology and changing work practices may have on the delivery of health services in the future.	Develop clear strategic directions for each clinical service (to the extent possible) that take account of the recognised technology and trends.
Health Infrastructure to help facilitate the change process.	Health buildings / infrastructure to be developed to facilitate new models of care. Understand the impact and advantages that can be gained from technology investment including electronic patient records and other ICT initiatives.
Optimise the role of private sector.	Where health care and / or financial benefits can be demonstrated, the role of the private sector should be optimised.

Funding Parameters	**Implication**
Recurrent Budget	Reforms must be implemented to achieve a growth rate of no more than 5.5% pa over the next 10 years.
Capital Budget	The overall capital budget as agreed by Government is fixed. As no additional capital funding is available it is essential that should additional functional areas / facilities be required that these are offset by complementary reductions elsewhere in

	the infrastructure plan or individual project plan.

SECTION 2: CURRENT STATUS OF RENAL MEDICINE

2.1 Service Definition

In terms of the information datasets routinely available to the Department of Health, **Renal Medicine Services** are defined by the Service Related Group (SRG) Renal Medicine which comprise of the following sub groups:

- Renal Failure
- Other Renal Medicine
- Renal Dialysis

The primary focus of the following data analysis is with respect to hospital based inpatient services – ambulatory and multi day stay in the public hospital sector.

2.2 Activity/Utilisation Trends

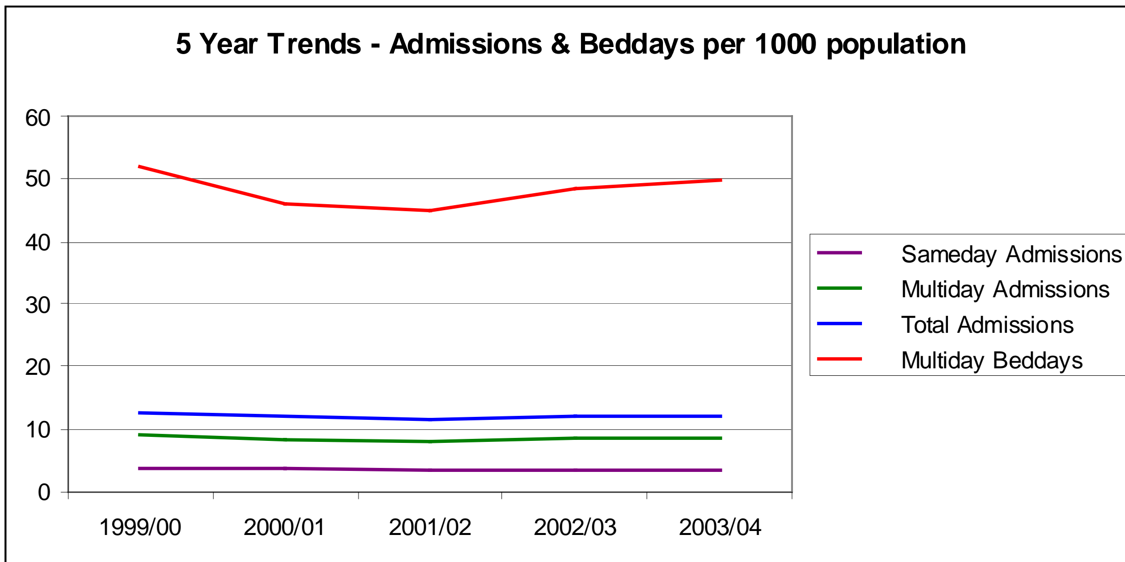
2.2.1 Renal Failure and other Renal Medicine

(a) Overall Activity 1999/00 - 2004/05(1)

	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Activity						
Sameday Admissions	1,356	1,161	1,029	1,553	1,579	
Multiday Admissions	1,038	911	912	993	962	
Total Admissions	2,394	2,072	1,941	2,546	2,541	
Multiday Beddays	5,838	5,912	6,038	6,469	6,145	
Rates per 1,000 population						
Sameday Admissions	1.0	0.8	0.7	1.0	1.1	
Multiday Admissions	0.7	0.6	0.6	0.7	0.6	
Total Admissions	1.7	1.4	1.3	1.7	1.7	
Multiday Beddays	4.1	4.1	4.1	4.4	4.1	

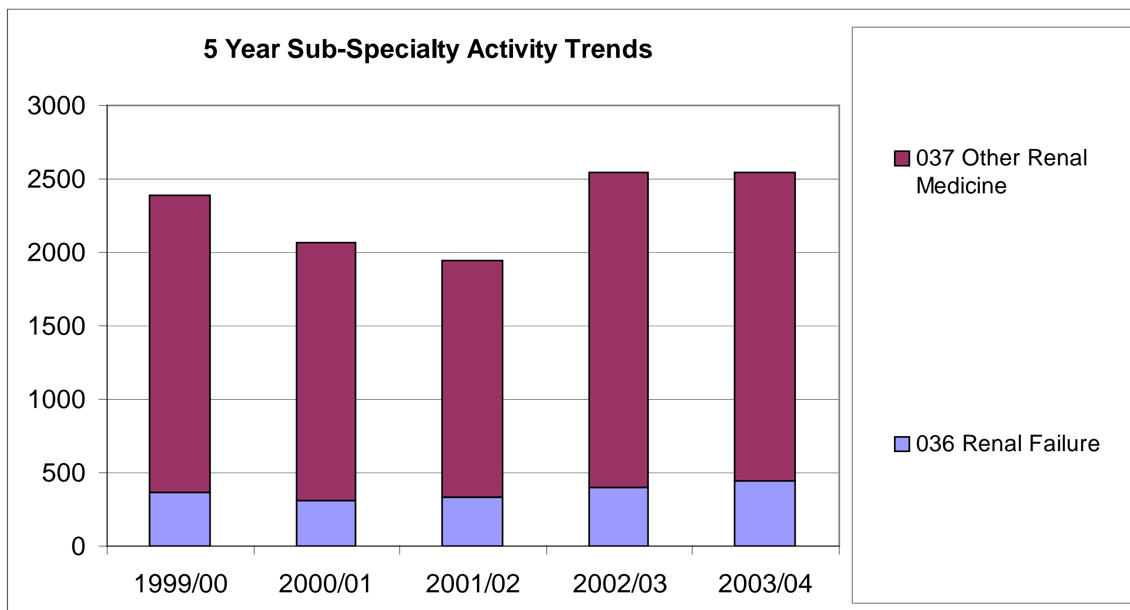
(b) Hospital Separations 1999/00 - 2004/05(1)

	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	Annual Rate of Change 02/03 - 03/04
Fremantle Hospital	799	664	413	536	469		-12.5%
King Edward Memorial Hospital for Women	37	26	32	31	29		-6.5%
Princess Margaret Hospital for Children	139	100	80	69	96		39.1%
Royal Perth Hospital	563	448	568	777	890		14.5%
RPH Shenton Park Campus	8	2	6	10	9		-10.0%
Sir Charles Gairdner Hospital	526	528	566	729	676		-7.3%
TOTAL TERTIARY	2,072	1,768	1,665	2,152	2,169		0.8%
Armadale-Kelmscott District Hospital	24	45	44	43	55		27.9%
Bentley Hospital	18	6	11	23	12		-47.8%
Joondalup Health Campus	130	93	81	106	104		-1.9%
Kalamunda District Community Hospital	14	20	19	13	16		23.1%
Murray District Hospital (Pinjarra)	3	2		2	1		
Osborne Park Hospital	60	61	40	81	78		-3.7%
Peel Health Campus	33	16	22	32	21		-34.4%
Rockingham-Kwinana District Hospital	12	22	16	18	21		16.7%
Swan District Hospital	28	38	43	76	64		-15.8%
Woodside Maternity Hospital		1					
TOTAL NON-TERTIARY	322	304	276	394	372		-5.6%
Total	2,394	2,072	1,941	2,546	2,541		-0.2%



Data Analysis

- Admissions decreased in the period 1999/00 to 2001/02 and have then increased to a level in 2003/04 that is approximately 150 more than 1999/00. Multiday beddays continued to increase over this time with a decrease in the final year of data and are about 300 more than 1999/00 levels.
- The proportion of same day activity has increased from 56% in 2000/01 to 62% in 2003/04.
- In the last year, of the hospitals with significant number of admissions, there has been decreases at Fremantle and SCGH and increases at PMH and RPH.
- Admissions per 1000 head of population are fairly stable ranging between 1.3 and 1.7, beddays per 1000 remaining around 4.



Metropolitan Tertiary Hospital Top 20 DRGs - 2003/04	Stay Type				
DRG	Day Only Separations	Overnight + Separations	ALOS	Total Sum of Eps	% Day Only
L67C, Other Kidney and Urinary Tract Diagnoses W/O Catastrophic or Severe CC	1211	261	4.10	1472	82%
L60B, Renal Failure W Severe CC or (Age > 69 W/O Severe CC)	69	150	7.16	219	32%
L67B, Other Kidney and Urinary Tract Diagnoses W Severe CC	45	109	6.71	154	29%
L67A, Other Kidney and Urinary Tract Diagnoses W Catastrophic CC	7	110	10.55	117	6%
L60C, Renal Failure Age<70 W/O Catastrophic or Severe CC	51	53	4.62	104	49%
L60A, Renal Failure W Catastrophic CC	1	68	10.21	69	1%
L02Z, Operative Insertion of Peritoneal Catheter for Dialysis		34	8.32	34	0%
Grand Total	1384	785	6.70	2169	64%

Metropolitan Non-Tertiary Hospital Top 20 DRGs - 2003/04	Stay Type				
DRG	Day Only Separations	Overnight + Separations	ALOS	Total Sum of Eps	% Day Only
L67C, Other Kidney and Urinary Tract Diagnoses W/O Catastrophic or Severe CC	176	79	3.48	255	69%
L60B, Renal Failure W Severe CC or (Age > 69 W/O Severe CC)	4	36	7.72	40	10%
L67B, Other Kidney and Urinary Tract Diagnoses W Severe CC	9	26	3.54	35	26%
L67A, Other Kidney and Urinary Tract Diagnoses W Catastrophic CC	2	13	7.62	15	13%
L60C, Renal Failure Age<70 W/O Catastrophic or Severe CC	3	8	2.25	11	27%
L02Z, Operative Insertion of Peritoneal Catheter for Dialysis	1	8	1.25	9	11%
L60A, Renal Failure W Catastrophic CC		7	16.43	7	0%
Grand Total	195	177	5.01	372	52%

Data Analysis

- Both sub-specialties have remained in the same proportions over time.
- Tertiary hospitals top 20 activity shows a higher rate of same days than non-tertiary hospitals (64% versus 52%).
- Other Kidney and Urinary Tract Diagnoses W/O Catastrophic or Severe CC is the dominant activity by DRG in both the tertiary system and the non-tertiary sector.

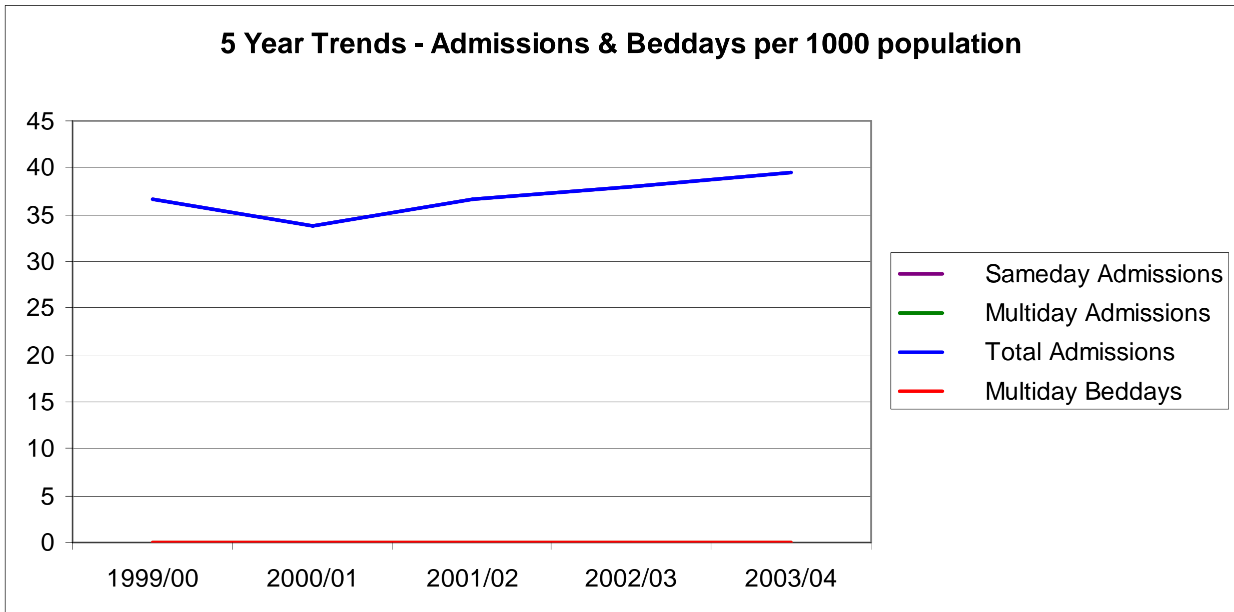
2.2.1 Renal Dialysis Services

(a) Overall Activity 1999/00 – 2004/05(1)

	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Activity						
Sameday Admissions	52,034	48,595	53,493	56,104	59,393	
Multiday Admissions	5	9	2	6	3	
Total Admissions	52,039	48,604	53,495	56,110	59,396	
Multiday Beddays	5	9	2	6	3	
Rates per 1,000 population						
Sameday Admissions	36.7	33.8	36.7	37.9	39.5	
Multiday Admissions	0.0	0.0	0.0	0.0	0.0	
Total Admissions	36.7	33.8	36.7	37.9	39.5	
Multiday Beddays	0.0	0.0	0.0	0.0	0.0	

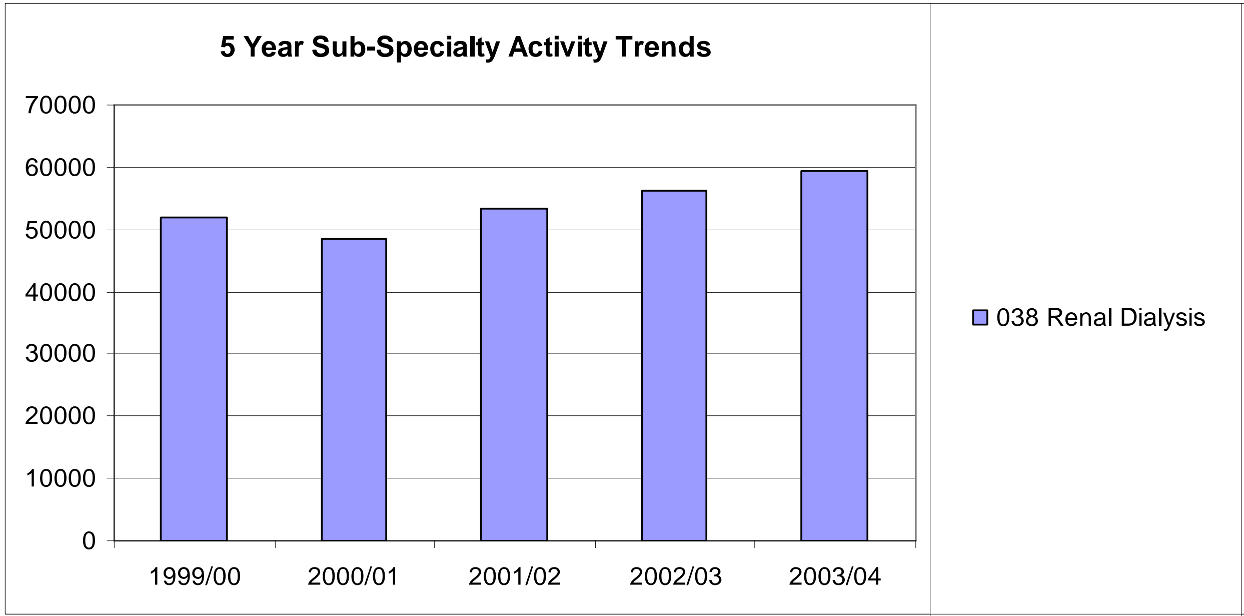
Hospital Separations 1999/00 – 2004/05(1)

	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	Annual Rate of Change 02/03 – 03/04
Fremantle Hospital	7,202	9,393	11,001	11,514	11,113		-3.5%
Princess Margaret Hospital for Children	116	274	308	290	48		-83.4%
Royal Perth Hospital	7373	6469	5704	5,629	7,143		26.9%
RPH Shenton Park Campus	12,697	10,419	10,947	11,042	11,708		6.0%
Sir Charles Gairdner Hospital	15,908	11,230	12,219	13,010	13,107		0.7%
TOTAL TERTIARY	43,296	37,785	40,179	41,485	43,119		3.9%
Armadale-Kelmscott District Hospital	3750	3678	4105	5399	5593		3.6%
Joondalup Health Campus	4,993	5,609	6,104	6,119	6,341		3.6%
Peel Health Campus		1532	3107	3107	4343		39.8%
TOTAL NON-TERTIARY	8,743	10,819	13,316	14,625	16,277		11.3%
Total	52,039	48,604	53,495	56,110	59,396		5.9%



Data Analysis

- Admissions decreased in the period 1999/00 to 2001/02 and have then increased to a level in 2003/04 that is approximately 7,300 more than 1999/00. Multiday beddays are insignificant.
- The proportion of same day activity is almost 100%.
- PMH has had a very large decrease in the last year (83%) and PHC and RPH have increased by approximately 40% and 27% respectively.
- Admissions per 1000 head of population have been steadily increasing and range between 33.8 and 39.5.



Metropolitan Tertiary Hospital Top 20 DRGs - 2003/04	Stay Type				
DRG	Day Only Separations	Overnight + Separations	ALOS	Total Sum of Eps	% Day Only
L61Z, Admit for Renal Dialysis	43,117	2	2.00	43,119	100%
Grand Total	43,117	2	2.00	43,119	100%

Metropolitan Non-Tertiary Hospital Top 20 DRGs - 2003/04	Stay Type				
DRG	Day Only Separations	Overnight + Separations	ALOS	Total Sum of Eps	% Day Only
L61Z, Admit for Renal Dialysis	16,276	1	1.00	16,277	100%
Grand Total	16,276	1	1.00	16,277	100%

Data Analysis

- Both tertiary and non-tertiary hospitals have almost 100% same day activity.

SECTION 4: FUTURE provision of Renal Medicine and Dialysis Services

3.1 Issues arising from CSF consultation process

- Status of existing Renal Plan recommendations

3.2 System Activity Projections Included in Clinical Services Framework

The following table provides an estimate of the metropolitan public hospital demand for the specialty based on patient place of residence. Note that these demand projections are based on forecasts from the Hardes Model that underpinned the Clinical Services Framework (CSF). Included in Appendix 3 is an overview of the method used in preparing these estimates.

Separation Projections for 2005/06, 2010/11 & 2015/16 - Renal Medicine

Place of Residence	Same-day Admissions			Multi-day Admissions			Total Admissions			Multi-day Beddays		
	2005/06	2010/11	2015/16	2005/06	2010/11	2015/16	2005/06	2010/11	2015/16	2005/06	2010/11	2015/16
Armadale	125	144	156	90	83	73	215	227	229	482	471	443
Bentley	57	61	77	32	23	29	88	84	106	263	188	267
Fremantle	26	28	28	22	19	15	48	47	43	157	124	109
Interstate	1	1	1	14	13	8	15	14	9	60	57	28
Joondalup	190	265	239	85	95	114	275	359	353	451	528	706
Kalamunda	27	22	31	34	32	40	61	55	70	275	283	386
Murdoch	227	256	275	131	103	102	358	359	377	901	824	794
Osborne Park	333	338	304	144	135	143	476	473	448	934	905	1,010
Peel	44	55	66	48	56	60	93	111	126	244	331	387
Rockingham	79	101	121	59	60	76	139	161	196	402	416	575
RPH	216	215	127	117	121	127	333	336	254	701	689	746
Rural WA	268	277	167	149	133	118	417	410	285	954	808	804
SCGH	49	53	41	36	31	31	85	84	72	295	236	260
Swan	136	162	165	92	103	97	228	265	262	555	679	640
Total	**1,778**	**1,977**	**1,797**	**1,054**	**1,007**	**1,033**	**2,831**	**2,984**	**2,830**	**6,674**	**6,540**	**7,156**

ESRG Breakdown Renal Medicine - 2010/11

	Stay Type				
ESRG Breakdown - 2010/11	Days Only Separations	Overnight + Separations	ALOS	Total Separations	% Day Only
036 Renal Failure	176	316	7.1	491	36%
037 Other Renal Medicine	1,801	692	6.2	2,493	72%
Total	1,977	1,007	6.5	2,984	66%

Separation Projections for 2005/06, 2010/11 & 2015/16 - Renal Dialysis

Place of Residence	Same-day Admissions			Multi-day Admissions			Total Admissions			Multi-day Beddays		
	2005/06	2010/11	2015/16	2005/06	2010/11	2015/16	2005/06	2010/11	2015/16	2005/06	2010/11	2015/16
Armadale	6,952	9,466	12,708	1	1	1	6,953	9,467	12,709	1	1	1
Bentley	2,775	3,712	6,029	0	0	0	2,775	3,712	6,030	0	0	0
Fremantle	2,237	2,718	3,618	0	0	0	2,237	2,718	3,618	0	0	0
Interstate	134	140	148				134	140	148			
Joondalup	6,571	10,597	15,796	1	1	1	6,573	10,599	15,798	1	1	1
Kalamunda	729	1,501	2,437	0	0	0	729	1,501	2,437	0	0	0
Murdoch	10,877	14,900	19,617	1	1	2	10,878	14,902	19,619	1	1	2
Osborne Park	11,242	14,526	18,148	0	0	0	11,242	14,526	18,148	0	0	0
Peel	3,283	4,800	6,752	0	0	0	3,283	4,800	6,752	0	0	0
Rockingham	4,211	6,437	9,298	0	0	0	4,211	6,437	9,298	0	0	0
RPH	11,306	13,355	15,896	0	0	0	11,306	13,355	15,896	0	0	0
Rural WA	2,958	4,443	6,214	0	0	0	2,958	4,443	6,214	0	0	0
SCGH	3,863	4,901	6,282	0	0	0	3,863	4,901	6,282	0	0	0
Swan	8,273	10,853	13,313	0	0	0	8,273	10,853	13,314	0	0	0
Total	**75,412**	**102,350**	**136,257**	**3**	**4**	**6**	**75,415**	**102,355**	**136,263**	**3**	**4**	**6**

ESRG Breakdown - Renal Dialysis - 2010/11

ESRG Breakdown - 2010/11	Stay Type				
	Days Only Separations	Overnight + Separations	ALOS	Total Separations	% Day Only
038 Renal Dialysis	102,350	4	1.0	102,355	100%
Total	102,350	4	1.0	102,355	100%

3.3 Reviewing demand / service targets

The forecasts included in the Clinical Service Framework were designed at a high strategic level suitable for metropolitan wide system planning. There were significant consultations to develop these system level clinical service frameworks and it is now the aim of this section to seek further consultation and advice to develop operational clinical service plans by reviewing targets that could be used to refine this modelling.

Question(s)

Do the demand projections in the CSF fit with your understanding of your specialty's future morbidity /mortality trends? And if not why not?

3.4 World's CURRENT best practice in Renal Medicine

Refer to web links in appendix 2 and literature (as appropriate) to answer the following questions

3.4.1 INPATIENT CARE

Question(s)

What conditions, currently treated by your speciality as inpatients, could have been prevented by timely and effective care?

How should patients who have diseases or co-morbidities that extend beyond any one specialist medical group be best cared for?

What would your speciality need to do differently to reduce total multi day bed demand by 30%, whilst maintaining/improving patient outcomes?

3.4.2 NON INPATIENT CARE

Question(s)

For patients in your speciality with chronic conditions, how many have easy access to:

(a) Best practice guidelines?

(b) Regular follow up and monitoring/case management?

(c) Early medical intervention as required?

(d) Patient education and empowerment?

3.5 Other Key Issues

3.5.1 CLINICAL LINKAGES

Question(s)

What relationships does your speciality have with other specialities or services that the architects need to be mindful of, when designing new/refurbished hospitals including those where it makes clinical or operational sense to co-locate together?

3.5.2WORKFORCE

Current workforce supply - Generally

The impact of the ageing population means that the while the national workforce pool currently grows at an annual rate of around 170,000 p.a. its growth will reduce to 12,500 p.a. by 2020. This massive drop in supply will be magnified in health as:

- Many health disciplines already have a significant supply shortage, and
- The aging population will increase demand for all health professionals.

An example of the projected workforce supply shortage is for medical practitioners, where the demand is expected to increase at 2.29% p.a. resulting in a predicted 35.1% shortage of medical practitioners across the WA public sector by 2022. The forecasts also estimate a similar shortfall in the supply of nursing staff.

For the purposes of metropolitan wide clinical services planning, it is essential that new ways of working are developed to make significantly better use of clinicians' time because of the clinical workforce issue.

Question(s)

1. With the knowledge that the health workforce is predicted to be diminishing how could
    - Your role be done differently
    - Some of your work be done in a different setting
    - Elements of your role be done by another Health Care Worker

    while still achieving best clinical outcomes, efficiency and safety?

2. What would you change to make to the WA health system safer and to help retain existing staff?

3.5.3 TECHNOLOGY/INNOVATION

Capturing clinical information in bulky medical records does not always facilitate its timely retrieval or appropriate exchange of information between clinicians. Information can also be lost in illegible handwriting.

Clinical guidelines have become a routine part of clinical practice in other parts of the world. Often they are supported/backed by clinical decision/support algorithms which are designed to improve reliability, safety and clinical care decisions for patients.

Question(s)

1. How should we be capturing and exchanging clinical data and organising our medical records to maximise patient outcomes?

2. Does your specialty feel there are opportunities for clinical support systems to be part of our hospital system by 2011? If yes, will this impact on your answer to the question in section 3.4.1 above regarding reducing total bed demand by 30% whilst maintaining/improving patient outcomes

3. What existing, new or emerging medical equipment and/or technology will be important to the way you practice healthcare delivery in 10 years time? How will this impact on the demand for inpatient accommodation (beds)?

4. What experience have you had in other health systems that should be imported into WA health?

3.5.4 PREVENTION

Question(s)

For your speciality, what common conditions should have a more aggressive prevention strategy implemented. Do you have suggestions for doing this?

3.5.5 TEACHING/RESEARCH

Question(s)

Given the answers above, how do we ensure that teaching and research still have their appropriate priority?

3.5.6 IDENTIFY ANY OTHER ADDITIONAL KEY CLINICAL PLANNING ISSUES RELEVANT TO YOUR SPECIALITY

SECTION 4 : Renal Medicine Working Group Summary report

DEMAND PROJECTIONS

1. Do the demand projections in the CSF fit with your understanding of your specialty's future morbidity /mortality trends? And if not, why not?

INPATIENT CARE

2. What conditions, currently treated by your specialty as inpatients, could have been prevented by timely and effective care?

INPATIENT CARE

3. How should patients who have diseases or co-morbidities that extend beyond any one specialist medical group be best cared for?

4. What would your speciality need to do differently to reduce total bed demand by 30%, whilst maintaining/improving patient outcomes?

NON INPATIENT CARE

5. For patients in your specialty with chronic conditions, how many have easy access to

a) Best practice guidelines?
b) Regular follow up and monitoring/ case management?
c) Early medical intervention as required?
d) Patient education and empowerment?

6. What needs to be put in place to allow 20% of your specialty's current inpatients to be cared for in other environments eg day hospital, outpatients, community, step down facilities?

CLINICAL LINKAGES

7. What relationships does your speciality have with other specialities or services that the architects need to be mindful of, when designing new/refurbished hospitals including those where it makes clinical or economic sense to co-locate together?

WORKFORCE

8. With the knowledge that the health workforce is predicted to diminish in the future, how could

- Your role be done differently
- Some of your work be done in a different setting
- Elements of your role be done by another Health Care Worker

while still achieving best clinical outcomes, efficiency and safety?

9. What would you change to make to the WA health system safer and to help retain existing staff?

TECHNOLOGY/INNOVATION

10. What changes in the way that clinical information is captured and exchanged between clinicians can you see working for your clinical specialty?

11. What changes to the way that clinical decision support eg clinical guidelines, are used in the course of your everyday work would improve the reliability, safety & appropriateness of clinical care.

12. What medical equipment or technology will be important to the way you practice in 10 years time.

13. What experience have you had in other health systems that should be imported into WA?.

PREVENTION

14. For your specialty, what common conditions should have a more aggressive prevention strategy implemented. Do you have suggestions for doing this?

TEACHING/RESEARCH

15. Given the answers above, how do we ensure that teaching and research still have their appropriate priority?

OTHER

16 .Any other additional key clinical planning issues relevant to your specialty.

PREDICTING YOUR SPECIALTIES FUTURE?

17. After reviewing worlds best practice and your 2005 multiday inpatient activity projections, please provide a 'guesstimate' of what percentage of todays patient cohort will be treated in the following settings by the year 2011?

Care Setting		Percentage of activity in 2011
Hospital Care		
	Multiday	
	Same day :surgery/procedures (including DO23) Medical care Rehabilitation	
	Outpatient	
	Subtotal % of hospital care	**%**
Out of hospital care		
	Primary care	
	Respite	
	Step down	
	Medi hotel	
	Rehabilitation	
	Chronic care management	
	Subtotal % of out of hospital care	**%**
Home care		
	Hospital in the home	
	Other domiciliary care	
	Other (please specify)	
	Subtotal % of home care	**%**

		100%

Appendix 1 - Clinical Services Framework

Definitions – Renal Medicine Services

Level 1

- Care is carried out by GPs (potentially visiting) with or without the assistance of RNs depending on the type of patient care needed

Level 2

- Inpatient and outpatient care
- Visiting GP
- 24 hour cover by RN

Level 3

- General physician (likely to be visiting) inpatient care
- GP care
- 24 hour cover by RN
- Outpatient care by visiting general physician and possibly renal specialist
- May accommodate self care dialysis in-patients

Level 4

- Inpatient care by resident general physician
- Outpatient consultation by visiting renal specialist
- Self care dialysis unit with links to larger renal unit
- Specialist RN

Level 5

- Inpatient care by resident renal specialists
- Registrar/RMO
- Emergency services provided by on call specialist
- Regional referral role
- Access to specialist SRN
- Some undergraduate teaching and possibly some research role
- All types of dialysis available and renal biopsies performed
- Provides a full range of dialysis access surgery

Level 6

- Full range of renal services, with renal department and emergency care services
- Renal transplantation available
- Coordinated by full time renal unit manager
- Statewide referral role and statewide geographical area based service delivery role
- Undergraduate and postgraduate teaching role

- Research role
- Provides a full range of dialysis access surgery

Appendix 2 – General Web links

INFORMATION RESOURCES TO INFORM THE

METROPOLITAN CLINICAL SERVICES PLANNING PROCESS

"The Advisory Board is a membership of 2,500 of the country's largest and most progressive health systems and medical centres. The Advisory Board provides best practices research and analysis to the health care industry, focusing on business strategy, operations and general management issues.

Gathering data across and beyond the membership, the Advisory Board publishes daily and weekly news services, 50 major studies and 3,000 customized research briefs each year on progressive management and clinical practices in health care. In general, the research focuses on the best (and worst) demonstrated practices, helping member institutions benefit from one another's learning curves."

North Metropolitan Area Health Service Executive has a membership to the Advisory Board Company and their staff access reports from the site."

http://www.advisoryboardcompany.com/

"The Australian Institute of Health and Welfare (AIHW) is Australia's national agency for health and welfare statistics and information." Includes biennial publications such as Australia's Health

http://www.aihw.gov.au/

Aust. Australian Dept of Health and Ageing The State of our Public Hospitals June 2005 Report

http://www.health.gov.au/internet/wcms/Publishing.nsf/Content/health-ahca-sooph-index05.htm

"The Australian Patient Safety Foundation Inc. (APSF) is a non-profit independent organisation dedicated to the advancement of patient safety. The APSF provides leadership in the reduction of harm to patients in all health care environments."

http://www.apsf.net.au/

South Metropolitan Area Health Service has a corporate membership to ARCHI and staff can access all parts of the site.

http://www.archi.net.au/content/index.phtml/itemId/45034

"The National Institute of Clinical Studies (NICS) is Australia's national agency for improving health care by helping close important gaps between best available evidence and current clinical practice."

http://www.nicsl.com.au/

"The core mission of the CEC is to identify issues of a systemic nature that affect patient safety and clinical quality in the NSW health system and to develop and advise on implementation strategies to address these issues.

Part of the role of the CEC is to acquire and share information about how well the NSW health system is performing and to use this information to improve the performance of the system."

http://www.cec.health.nsw.gov.au/

"Hunter New England Health's Maggie Program is fundamentally redesigning our healthcare systems by focusing on improving 'patient journeys'. We are doing this to maximise the safety and satisfaction of patients and staff.

The Maggie Program is Hunter New England Health's major reform program. It will help us to meet many of the organisation's goals.

The progam is about re-orienting healthcare processes to truly focus on the patient.

By walking in the shoes of patients and their carers, we will redesign the system so that every patient's 'journey' fits around them, rather than making the patient fit the system."

http://www.hnehealth.nsw.gov.au/maggie/index.htm

http://www.pc.gov.au/study/healthworkforce/index.html

Aust. Queensland Health Action Plan: Building a Better Health Service for Queensland October 2005

http://www.health.qld.gov.au/publications/corporate/action_plan.asp

"The needs of today's health system will be significantly different to the needs of the future. Victorians are getting older and living longer. As a result, health care is becoming less about the treatment of endemic disease and more about the management of chronic disease into old age.

Victoria. A better state of health is the Victorian Government's plan to address the challenges of the future, improve health services and ensure a sustainable health system for all Victorians."

http://www.health.vic.gov.au/betterstate/index.htm

Aust. Victorian Dept of Human Services Design Guidelines for Hospitals and Day Procedure Centres (DGHDP) March 2005

http://www.healthdesign.com.au/vic.dghdp/

http://www.cihr-irsc.gc.ca/e/193.html

Research on "setting wait-time benchmarks for key medical procedures" 16 Nov 2005

http://www.cihr-irsc.gc.ca/e/29902.html

http://www.cihr-irsc.gc.ca/e/29905.html

http://www.cihr-irsc.gc.ca/e/29904.html

http://www.cihr-irsc.gc.ca/e/29903.html

Canada Health Canada Commission on the Future of Health Care in Canada (Romanow Commission)

http://www.hc-sc.gc.ca/english/care/romanow/index1.html

"The nation turns to the Institute of Medicine (IOM) of the National Academies for science-based advice on matters of biomedical science, medicine, and health. A non-profit organization specifically created for this purpose as well as an honorific membership organization, the IOM was chartered in 1970 as a component of the National Academy of Sciences.

The Institute provides a vital service by working outside the framework of government to ensure scientifically informed analysis and independent guidance. The IOM's mission is to serve as adviser to the nation to improve health. The Institute provides unbiased, evidence-based, and authoritative information and advice concerning health and science policy to policy-makers, professionals, leaders in every sector of society, and the public at large."

http://www.iom.edu/

"Kaiser Permanente's Care Management Institute (CMI) is a unique, pioneering institution with a mandate to drive, fund, and catalyze care management activities throughout our non-profit HMO. CMI strives to make the right thing easier to do.

Care management, also commonly referred to as "disease management", has been widely acclaimed by forward-looking health care experts as the next, major, evolutionary step beyond the cost-focused innovations of "managed care."

CMI was created in 1997 for the express purpose of helping Kaiser Permanente improve the quality of care and health outcomes for our members.

Drawing on the extensive clinical experience, research, and data of an integrated health care system with more than 8 million members - as well as from research centres internationally - CMI synthesizes knowledge about the best clinical approaches in order to create, implement, and evaluate effective and efficient care management programs."

http://www.kpcmi.org/

“Kaiser Permanente's Centre for Health Research/Northwest and Hawaii is a professionally independent, non-profit research institute whose mission is to improve individual health and inform health policy. Its work brings together scientists from many fields—anthropology, biostatistics, informatics, dentistry, economics, endocrinology, epidemiology, genetics, gerontology, medical care organization, nursing, nutrition, preventive medicine, psychiatry, public health, social psychology, and sociology—who conduct research and demonstration projects across a broad range of health and health care issues.”

http://www.kpchr.org/public/default.asp

“Our purpose is to provide a focus and resources for Kaiser Permanente to better participate in shaping the nation’s health policy agenda. We bring experts together to research and analyse health policy, with a goal of increasing understanding of policy issues and helping provide solutions. Working in collaboration with foundations, policy institutes, research programs, policymakers, and other organizations, the Institute seeks to develop unbiased information about health policy issues and alternatives.”

http://www.kpihp.org/about/index.html

http://www.oecd.org/dataoecd/58/47/35624825.pdf

HealthCast 2020: Creating a Sustainable Future

“The health systems of nations around the world may be unsustainable if unchanged over the next 15 years. Globally, healthcare is threatened by a confluence of powerful trends -- increasing demand, rising costs and uneven quality. If ignored, these trends will overwhelm health systems, creating massive financial burdens as well as major health problems for current and future generations.

PricewaterhouseCoopers interviewed 700 health and business leaders in 27 countries around the world about their health systems. While no one country has all of the answers, solutions to local problems can be found in many places. Creating a sustainable strategy for the future depends on organisations' abilities to learn and customise workable solutions within their own societal context.”

http://www.pwcglobal.com/Extweb/pwcpublications.nsf/docid/C50392B2A90B03C6802570AF003ACCEF

http://www.wise.nhs.uk/cmswise/default.htm

UK NHS Institute for Innovation and Improvement - supersedes the NHS Modernisation Agency

“The NHS Institute for Innovation and Improvement is a new and exciting venture which will provide an ambitious focus for new ideas, technologies and practices to improve services to patients, users and the public. From the outset, we will be receptive to the needs of the NHS, working as part of the wider NHS system to draw on the best skills and expertise to clarify solutions to the priority issues.”

http://www.institute.nhs.uk/

UK National Audit Office A Safer Place for Patients: Learning to Improve Patient Safety November 2005.

"The UK National Audit Office report reviews progress made by the NHS in reducing unintentional harm to patients in hospitals. The report states that more than 2,000 deaths occurred in NHS hospitals over the period April 2004 to March 2005 as a result of patient safety incidents. "About 980,000 patient safety incidents (including medication errors, equipment defects and patient accidents) and near misses were reported - some two thirds of incidents resulted in no long-term harm. Around a half of incidents in which NHS hospital patients were unintentionally harmed could have been avoided, if lessons from previous incidents had been learned. The cost of mistakes to the NHS was estimated to be £2bn a year in lost bed days on top of the costs of litigation." "A retrospective study of patient records in two English hospitals found that just over 10 per cent of patients experienced an 'adverse event'. Around half of these (5.2 per cent) were judged to have been preventable. Responses to the NAO survey showed that, in 2004-05, trusts recorded some 2,081 deaths as a result of patient safety incidents, but it is widely acknowledged that there is significant under-reporting of deaths and serious incidents. Other estimates of deaths range from 840 to 34,000 but, in reality, the NHS simply does not know."

http://www.nao.org.uk/publications/nao_reports/05-06/0506456.pdf

"The National Patient Safety Agency (NPSA) is a Special Health Authority created to co-ordinate the efforts of all those involved in healthcare, and more importantly to learn from, patient safety incidents occurring in the NHS.

From 1 April 2005, the NPSA's work also encompasses: safety aspects of hospital design, cleanliness and food (transferred from NHS Estates); ensuring research is carried out safely, through its responsibility for the Central Office for Research Ethics Committees (COREC); and is supporting local organisations in addressing their concerns about the performance of individual doctors and dentists, through its responsibility for the National Clinical Assessment Service (NCAS), formerly known as the National Clinical Assessment Authority. It also manages the contracts with the three confidential enquiries. This responsibility has been transferred from the National Institute for Clinical Excellence (NICE)."

http://www.npsa.nhs.uk/

"The Agency for Healthcare Research and Quality's (AHRQ) mission is to improve the quality, safety, efficiency, and effectiveness of health care for all Americans. Information from AHRQ's research helps people make more informed decisions and improve the quality of health care services. AHRQ was formerly known as the Agency for Health Care Policy and Research."

http://www.ahrq.gov/

"The Institute for Healthcare Improvement (IHI) is a not-for-profit organization driving the improvement of health by advancing the quality and value of health care."

http://www.ihi.org/ihi

“The RAND Corporation is a non profit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world.”

http://www.rand.org/research_areas/health/

BMJ British Medical Journal - Topic Collections on:

Home page for links to all collections: http://bmj.bmjjournals.com/collections/index.shtml

Health Care Statistics http://bmj.bmjjournals.com/cgi/collection/health_care_statistics

Health Economics http://bmj.bmjjournals.com/cgi/collection/health_economics

Medical Managers http://bmj.bmjjournals.com/cgi/collection/medical_managers

Organisation of Health Care

http://bmj.bmjjournals.com/cgi/collection/Organisation_of_health_care%3Anonclinical

Other Management http://bmj.bmjjournals.com/cgi/collection/other_management

Patient Safety / Clinical Risk / Medical Error

http://bmj.bmjjournals.com/cgi/collection/medical_error_patient_safety

Quality Improvement (Including CQI and TQM)

http://bmj.bmjjournals.com/cgi/collection/quality-improvement

Resource Allocation (including rationing) http://bmj.bmjjournals.com/cgi/collection/resource_allocation

31.1. CMAJ – Canadian Medical Association Journal - Collections

Home page for links to all collections: http://www.cmaj.ca/cgi/collection/

See the links under Health Policy, in particular Organization of Health Care

http://www.cmaj.ca/cgi/collection/organization_of_health_care

31.2. MJA - Medical Journal of Australia - Topic Lists

Home page for links to all topics: http://www.mja.com.au/Topics/index.html

Administration and Health Services

http://www.mja.com.au/Topics/Administration%20and%20health%20services.html

Appendix 3 – CSF Hardes Demand Model Methodology

Background

A key factor underpinning the development of the Clinical Services Framework (CSF) is the projected future demand for clinical services. To ensure the most accurate projections were obtained, external verification of the demand modelling underpinning the Reid/Health Reform Committee (HRC) Report was undertaken by Hardes and Associates. They have extensive experience in demand modelling and are currently working, or have provided modelling for, the Health Departments in New South Wales, Victoria, Queensland and South Australia, as well as groups in the private health sector. The methodology used, 'Market Projection Analysis', was developed primarily to assist state health authorities in projecting future acute hospital demand – and to provide a tool for modelling supply alternatives.

The Hardes approach is a complex modelling technique that projects future demand taking into account population growth, population ageing as well as age/sex/specialty specific trends in admission rates and length of stay.

Data

There are two main sources of data used in the Hardes modelling – hospital morbidity data and population projections.

The hospital morbidity data is routinely collected information on each separation to a WA hospital. For this exercise, morbidity data for each hospital (private and public) were used for the five years 1999/00 to 2003/04. Data required included patient age group, gender, payment class, stay type (same day or overnight), cause of admission, place of treatment, place of residence and length of stay.

The other major source of data is population projections. These data are sourced from the Australian Bureau of Statistics Census 2001 and are estimated resident population projections according to age/sex/SLA for June 30 of the financial year to which the hospital morbidity data refer.

Process

A. Review of current patterns of service delivery

This entails an analysis of specialty-specific patterns of utilisation. The two basic elements are catchment tables (outlining where patients receive services in comparison to where they live) and a population-based review of 'expected' and actual admission rates (identifying patterns of under/over utilization).

B. Projection of future demand (population-based)

Projections are calculated for specialty-specific demand for residents of all areas of the state. The projections take into account population growth and ageing as well as specialty-specific trends in admission rates, length of stay and same day admissions. Projections are made for separations and bed days. For each specialty, projections are broken into same day, non-tertiary and tertiary components. Demand projections do not indicate where patients will be treated – only the nature and volume of work to be expected from the residents of a given area.

It is important to recognise that these projections outline the volume and type of work that can be anticipated if the population projections are correct and the trends in service utilisation continue into the future. Projections are based upon historic trends. They do not imply that this is the optimal outcome – only that this is the direction in which the system is heading. Interpretation of results needs to be cognizant of this qualification.

C. Projection of supply

Given the referral patterns identified in A, projected demand from B is distributed to generate the likely case mix and volume at selected hospitals – assuming the same referral patterns but adjusted demand (as a result of trends, population growth etc). This is essentially a status quo model that provides information about what each individual hospital will look like in the absence of deliberate strategies to chance the service mix. While this is rarely a desirable outcome it provides a base case scenario.

D. Projection of supply (scenario models)

The end point of services planning is development of a model that provides a capacity to model alternate supply scenarios – and the consequent impact on the capital works and operational funding for each hospital under the proposed scenario. For each scenario the impact on any given hospital is identified in terms of specialty-specific projections of separation and bed days.

A supply scenario was created that redirected activity to represent the recommendations/reforms of the Reid/HRC report. This took into account things such as ensuring patients were treated closer to home and proposed new role delineation of hospitals.

Assumptions

- The occupancy rates used to calculate beds are as follows:

  Multi-day
  - 90% for tertiary hospital medical/surgical cases;
  - 90% for all mental health and rehabilitation;
  - 80% for obstetrics cases at King Edward Memorial Hospital for Women;
  - 65% for all other obstetrics cases; and
  - 85% for everything else.

  Same-day
  - Dialysis – 2 sessions per day, 6 days per week, every week of the year; and
  - Activity other than dialysis – 1.5 sessions per day, 250 days per year.

- Activity levels are not restricted by workforce, bed or funding limitations. This assumes that the workforce can be increased or decreased in volume and the mix of labour changed according to demand.

- The level of service patients receive in the base year (2003/04) are carried forward and that the trends evident in the five years data 1999/00 to 2003/04 are reasonable going forward.