

DEPARTMENT CARDIOTHORACIC SURGERY

Head of Department: Prof Francis E Smit

I. PERSONNEL AND ACADEMIC

1. PERSONNEL

a) *Medical*

Head of Department : Prof F E Smit
Principal specialist : Prof W J de Vries
Senior specialists : Dr M A Long
Dr C J Jordaan (Part -time)
Senior specialist (sessions) : Dr A G Linegar
Registrars : Drs R Schulenburg, J Brink, A Stroebel, T de-Huis
and I de V Jonker.

b) *Non-medical*

Manager Clinical
Technology : Mrs M Jansen van Vuuren
Control Technologist : Mr D Bester
Chief Technologist : Mr N van den Heever (left Feb 07)
Senior Technologist : Mrs M Retief (left April 07)
Senior Technologists
(sessions) : Mrs M Fuls and Mr J Fourie
Student Technologists
4th year : Me A Human, Me L Liebenberg, Mr Z Musa
Student Technologists
3rd year : Mr JP Cloete.

c) *Professional*

Specialist Medical Scientist: Mr J J van den Heever
Assistant Director Medical
Scientist (from CUT) : Dr L Botes
Medical Scientist : Me C Prins

d) *Administrative*

Administrative Manager : Mrs J M Erasmus
Secretary : Mrs J L van der Merwe
Senior Administrative
Officer : Mrs E Smith

e) Social and general

We have an interdisciplinary monthly mortality, morbidity and management meeting, attended by administrative personnel, nursing service managers for the ward, theatre and ICU, perfusionists, registrars, surgeons and specialists from other disciplines as required. Lately the meeting has been attended mainly by the adult cardiologists. We shall get back to our previous format in 2008.

2. ACADEMIC ACTIVITIES

a) Teaching

(i) Undergraduate teaching

We are now involved in the pre-graduate curriculum. As time slots are extremely difficult to arrange, we are still under-exposed and training is certainly still sub-standard. We hope to expand our role in future.

(ii) Postgraduate teaching

Our weekly training program (vide infra) is functioning well and participation by all members of the department is encouraged. Training sessions are well attended and despite the frivolous nature of our clinical work, we have managed to cover the majority of subjects quite well this year.

We are continuing to have formal evaluations every six months in the form of a written, clinical and oral examination. This gives us an opportunity to evaluate the progress of each candidate. The candidate also has a debriefing session afterwards in which his performance is discussed as well as getting feedback from the candidate himself.

Richard Schulenburg (senior registrar) has returned from Oxford after a very successful rotation there in 2007. Dr A Stroebel is rotating there in 2008. This rotation has added to the international exposure of our registrars and has also served as an international benchmark against which we can evaluate ourselves.

Prof Francis Smit has become a member of the International Cooperation Committee of the European Society of Cardiothoracic Surgeons. This gives us an opportunity to actively participate in the development of post-graduate training programs in Africa.

Mr J J van den Heever has successfully completed his Masters Degree and the external examiners have recommended that the degree be awarded cum laude.

Further post-graduate studies are listed under the research projects section.

b) Research

Projects:

Post- interventional outcomes in coronary artery disease. Ms C Prins, Ms L Liebenberg, M-Tech Clinical Technology degrees registered, Mrs A Human, Ms H Potgieter.

Effects of warm ischemic times on harvested homografts. M-Tech, Mr D Bester and PhD, Prof F E Smit, registered.

A comparative assessment of the calcification potential and cross-linking stability of three different treatment modalities of bovine pericardium and one commercially available product. Mr JJ vd Heever, M.Sc registered. Project completed.

A model for the development of thoracic surgery in Central South Africa. PhD, Dr A G Linegar, registered

Assessment of the tissue engineered Adapt® treated bovine pericardial patch for cardiac repair procedures (BioMD Limited-Study).

Evaluation of a new mitral ring design in the mitral position of sheep. (Completed for Glycar Pty Ltd) – Project completed.

3. ATTENDANCE OF CONGRESSES/COURSES AND PAPERS PRESENTED

a) Papers

Pan-African Society of Cardiology Congress, Nairobi Kenya 2007. Long M.A., Smit F.E., Brown S.C., Bruwer A.D. 2007. Pulmonary Hypertension in Ventricular Septal Defect and Atrio-ventricular Septal Defect Revisited. *Cardiovascular Journal of Africa* 18:2.

SA Heart Congress, Sun City, North West. 22-25 November 2007. Smit FE, Brink J. Brown SC, Prins C, Botes L, Bruwer AD. 2007. Limitations in preoperative assessment of pulmonary hypertension. *SAMJ* 97 (11): 1106.

SA Heart Congress, Sun City, North West. 22-25 November 2007 Linegar AG. Smit FE. A Systematic Review of the South African Thoracic Surgical literature January 1960 – December 2006.

SA Heart Congress, Sun City, North West. Jonker IdeV. Smit FE, Linegar AG, Jordaan CJ. Surgical management of pulmonary aspergilloma.

Faculty of Health Sciences, Faculty Forum. 23 – 24 August 2007. De Vries WJ. Smit FE. The changing pattern of coronary artery bypass surgery.

Faculty of Health Sciences, Faculty Forum. 23-24 August 2007. Stroebel A. de Vries WJ, Smit FE. Management of MPM: The Current Debate.

Faculty of Health Sciences, Faculty Forum. 23-24 August 2007. Jonker IdeV, Smit FE, Linegar AG, Jordaan CJ. Aspergilloma – A clinical approach.

Faculty of Health Sciences, Faculty Forum. 23-24 August 2007. Brink J, Smit FE, Brown SC, Bruwer AD, Long MA. “The Morphogenic Monster” - The Double Outlet Right Ventricle.

b) Congresses and courses attended

Assuring a Future for Transplantation in South Africa, Kleinmond, SA; 29-31 March 2007; Mr JJ vd Heever

Hannes Meyer Registrars Symposium; Faculty of Health Science, UFS; April 2007; Prof F E Smit, Prof W J de Vries, Drs M A Long, C J Jordaan, R Schulenburg, J Brink, A Stroebel, T de-Huis and I de V Jonker

World Society for Paediatric and Congenital heart surgery, Washington DC, USA; 3-4 May 2007, Prof F E Smit (inaugurated as Founding Member)

87th Annual AATS Meeting, Washington DC, USA, 5-9 May 2007 Prof F E Smit

1st All Africa Cardiology Conference, Nairobi, Kenya; 13-16 May 2007; Dr M A Long.

Faculty Forum; Faculty of Health Science, UFS, 23-24 August 2007; Prof F E Smit, Prof W J de Vries, Drs M A Long, C J Jordaan, R Schulenburg, J Brink, A Stroebel and T de-Huis.

Biennial Congress of the South African Transplantation Society, 8-11 September 2007, Sibaya Conference Centre, Durban, South Africa. Mr J J vd Heever

21th EACTS/ESTS Joint Meeting; ; Geneva, Switzerland; 15-19 September 2007; Prof F E Smit, Dr C J Jordaan.

Heart 2 Heart Africa Congress 2007, Sun City, South Africa, 22-25 November 2007; Prof F E Smit, Dr C J Jordaan, Dr A G Linegar, Dr J Brink, Dr J A S Stroebel.

Latest Techniques in Cardiac Surgery; Leipzig, Germany 6-7 December 2007; Dr M A Long

4. PERSONNEL ACHIEVEMENTS

a) Committees

Prof F E Smit:

- Society of Cardiothoracic Surgeons SA EXCO
- Medical Association of SA Full Time Practise Representative, UFS
- President SA Heart Association Free State Branch
- Practise Management Committee, UFS
- Member SA Heart Association Databases Project Committee
- International Co-operation Committee of European Association of Cardiothoracic Surgery
- Inaugural Member of The World Society for Paediatric and Congenital heart surgery.

Prof W J de Vries:

- Member of Provincial Administration Branch Universitas Private Hospital

Mr J J v d Heever:

- National representative for Tissue Banks on the South African Transplantation Society Exco

5. OTHER ACHIEVEMENTS

Prof F E Smit:

- Member of the International Co-operation Committee of European Association of Cardiothoracic Surgery.
- Chain of Hope: Member of Board of Higher Education,
- Budget Project completed for Free State Provincial Health Department

Mr J J vd Heever: completed M. Sc recommended with distinction.

Dr R Schulenburg – Oxford Rotation and Fellowship Appointment Edmonton, Canada 2009

Dr C J Jordaan – acting head MICU

Me C Prins – Departmental Website re-development and launch

Dr I de V Jonker – Awarded Best Candidate in Intermediary Examination, College of Surgeons of South Africa

Mrs J M Erasmus: Vice President Federation of Dance sport South Africa.

6. FUTURE PROSPECTS

The rotation of registrars through Oxford, overseen by Prof S. Westaby, started in 2007. This will give registrars international experience and exposure to end-stage cardiac disease.

We are developing an end-stage heart disease program within an interdepartmental framework. This project will change the future management of this sub-group of patients.

We are very enthusiastic to develop an interdisciplinary integrated training program aimed at the training of cardiologists, cardiothoracic surgeons and supportive disciplines for African countries.

DEPARTMENT CARDIOTHORACIC SURGERY

HEAD OF DEPARTMENT: PROF F E SMIT

II. PUBLICATIONS

A. SCIENTIFIC PUBLICATIONS

1. *Full-length articles*

Non-subsidy-bearing publications

Abstracts

Smit FE, Brink J, Brown SC, Prins C, Botes L, Bruwer AD. 2007. Limitations in preoperative assessment of pulmonary hypertension. *SAMJ* 97 (11): 1106.

Long MA, Smit FE, Brown SC, Bruwer AD. 2007. Pulmonary Hypertension in Ventricular Septal Defect and Atrioventricular Septal Defect Revisited. *Cardiovascular Journal of Africa* 18:2.

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HEAD OF DEPARTMENT: PROF FRANCIS E SMIT

III. SERVICE DELIVERY

1. DUTY ROSTER

WEEKLY PROGRAM OUTLINE																			
Time	Monday			Tuesday			Wednesday			Thursday			Friday						
06:30	Registrar Round			Registrar Round			Registrar Round			Registrar Round			Registrar Round						
07:00										Academic Round			Handover/Planning						
07:30	Handover/Planning			Handover/Planning			Handover/Planning						Ward Round (working)						
08:00	ICU/Ward Round (working)			ICU/Ward Round (long)			Ward Round (working)						M and M						
08:15	Theatres:		Office	Theatres:			Theatres:		Animal	Theatres									
08:30	Cardiac	Cardiac	Prof Smit	Paediatric	Cardiac		Paediatric	Cardiac	Lab	Thoracic	Cardiac								
09:00	Prof de	Private	Rounds In Pelomomi Dr Jordaan	Prof Smit	Prof de	Vries	Dr Long	Prof de	Vries	Prof				Paediatric Cardiology					
09:30	Vries	Or																	
10:00		Paediatric																	
10:30		Dr Long																	
11:00																			
11:30			Oncotherapy Rounds Dr Jordaan							Dr Jordaan	Dr Jordaan		Dr Long						
12:00											Dr Schul- enburg	Dr Linegar							
12:30																			
13:00	Theatres:		Office	Theatres:		Office	Office		Theatres:		Office								
13:30	Cardiac or	Paediatric	Prof de Vries	Paediatric	Thoracic	Prof de Vries	Prof Smit/Prof de Vries/Dr Long		Major thoracic	Cardiac	Dr Long			Registrar					
14:00	Paediatric	Dr Long	Dr Long	Prof Smit/	Dr Jordaan		Pulmonology		Dr Linegar/	Prof Smit				Admin					
14:30	Training	Or										Adult Cardiac Training						Cardiac	
15:00	List	Cardiac							Dr Jordaan			Emergency		Private					
15:30	Prof Smit	Private																	
16:00			Admissions				Admissions					Journal Club/Lectures		Admissions					
16:30																			
17:00			Ward Rnd				Ward Rnd		Ward Round		Ward Rnd								
17:30			ICU Round				ICU Round		ICU Round		ICU Round		Ward rnd ICU Rnd						
18:00																			

2. CLINIC AND LABORATORY STATISTICS

Tissue Laboratory

CLINIC AND LABORATORY STATISTICS

Tissue Laboratory

A total of 78 aortic valves, 30 pulmonary valves and 21 pulmonary bifurcations were dissected out of 78 donor hearts. From these, 46 valves were not fit for use due to HIV/venereal diseases (8), Positive cultures (6) and calcification/atherosclerosis/pathology (32).

During 2007, a total of 38 aortic allografts, 24 pulmonary allografts and 20 pulmonary bifurcations were cryopreserved for clinical use. Seventeen valves were implanted locally and 28 valves (11 aortic, 14 pulmonary, 3 bifurcations) were distributed to six other units within South Africa. There appears to be an increasing demand for these valves to be transplanted into recipients, while the availability of suitable valves remains extremely limited due to various reasons.

Approximately 70 locally prepared bovine pericardial patches were used in our unit in different cardiac procedures during this period, while an estimated 110 patches were delivered to other units. About 65 samples of Gluteraldehyde were also used and distributed for fixation of autologous pericardial tissue during repair procedures.

3. IN- AND OUT-PATIENTS

Inpatients	1036
Outpatients new	321
Outpatients Follow-up	671
Total	2028

		Mortality
Cardiac Adult	473	27
Cardiac Pediatric	160	11
Thoracic	403	10
Total	1036	48

4. OPERATIVE INTERVENTIONS

CARDIAC ADULT					
Procedure	Data	Mortality	Procedure	Data	Mortality
AVR	26		CABG and ventricular aneurysm	5	1
AVR with homograft	1		CABG and Left Vent reconstruction	3	
AVR with homograft and MV valvotomy	1		CABG and Maze	1	
AVR and MV annuloplasty	2		Aortic root	5	
AVR and MV Mod de Vega	1	1	Aortic arch Aneurysm	1	
AVR and Aortic root	1		Aortic rupture	1	
AVR and Asc Aneurysm	1		Asc Aorta Aneurysm	1	
AVR and VSD	3		Left ventricle aneurysm	1	
MVR	26	1	Aneurysm repair	5	
MVR and Maze	12	1	Aortic dissection	1	
MVR and Tricuspid valve repair	8		Aneurysm valsalva	1	
MVR, Tricuspid valve repair and Maze	1		False aneurysm	1	
TVR	1	1	LA miksoma	2	
Tricuspid valve repair and Maze	1		Sub Aortic membrane resection	1	
Tricuspid valve repair and IVC	1		Sub Mitral Aneurysm	2	
DVR	14	2	Pericarditis	2	1
DVR and Tricuspid valve repair	2	1	Pericard effusion drainage	2	
DVR and Maze	1		Pericardectomy	3	1
DVR and VSD	1		Heart investigations	14	
Aortic valve repair	1				
Aortic valve repair and MV annuloplasty	1				
Mitral valve repair	20				
Pulmonary valve repair					
CABG	133	3			
OPCAB	160	12			
CABG and AVR	9	1	Total	473	27
CABG and MVR	14	1			

PAEDIATRICS					
Procedure	Data	Mortality	Procedure	Data	Mortality
ALCAPA	2	1	MV repair	3	
Ao Arch, PDA, VSD and AS			MV repair (de Vega)	1	
Aortic Arch Aneurysm			MV and TV repair	1	
Aortic Root	1		MV repair & Maze	1	
AS and PDA			MVR and AV repair	2	
ASD	13		Norwood	1	1
ASD & Pulm homograft	1		PA Banding	2	
ASD & Sano shuno	1	1	PA Banding bilateral	1	1
ASD & Trans annular PA patch	1		Pacemaker	1	
ASD, PFO closure and PDA	1		PDA	23	
ASD & PDA	1		Pulmonale stenosis	2	
Atrial septektomie	1		Recons Ao arc, PDA and Sano shunt	1	1
AV kanaal	6	1	RVPA conduit	5	
AVR	2		Sano Shunt	1	
AVSD	6		Sub Aortic stenosis	1	
AVSD & PDA	1		TAPVD	2	
Blalock Tausig shunt	2		Tetralogy	17	1
Central shunt	2		Truncus	3	
Coarctation	3		VSD	21	
Dec Torako Abdominal Aneurysm	1		VSD and PDA	2	
DORV	6	1	VSD/PDA/Hipopl A/Ao Arch	1	1
DVR & TV repair	1		VSD & PA valvotomy	1	
DVR & TV repair	2		VSD & MV repair	1	
Ebstein	1				
Eisenmenger	1				
Fontan	2	1	Total	160	10
Glenn shunt	2				
MAPCA	2				

THORACIC				
Total number operations	240		Operations performed	
Major cases	104	3	Lung resections	46
Minor cases	136	2	Sub-lobar resections	22
			Lobectomy	14
Organ system involved			Pneumonectomy	10
Pulmonary	146			
Pleural	78		Decortication	18
Oesophageal	4		Thoracoplasty	3
Mediastinal	14		Fenestrations	20
Pathology			Other	
Inflammatory	135		Investigations (no operation)	163
Neoplastic	55			5
Trauma	15		Total Thoracic Admissions	403
				10
Tuberculosis	61			
Active	30			
MDR	3			
Sequelae (Old) of TB	28			
HIV status				
Not tested	205			
Tested positive	22			
Tested negative	13			
Empyema	21			
Empyema no fistula	4			
Empyema with fistula	17			
Destroyed lung	15			

5. FUTURE PROSPECTS

We are working steadily at increasing our support personnel compliment. We have increased the number of qualified ICU nurses four fold in the last four years for example. The possibility of a major African Training Program at the UFS can help us to expand our services to our patients in central South Africa.

The completion of the first phase of the Database Project as well as Dr Linergar's PhD on the development of Thoracic Services in Central SA will assist us in putting development issues on firmer scientific base.

DEPARTMENT CARDIOHORACIC SURGERY

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IV. HIGHLIGHTS

1. HIGHLIGHTS OF SPECIAL INTEREST

The development and registration as a long-term project at the UFS of the SAHA National Databases Project is the end-result of years of involvement in this project. Research opportunities for our department as well as the honour of hosting this project at our university are exciting prospects.

Our research projects are coming to fruition after a development phase that included capacity building, protocol and project development, ethical committee applications and sustainability challenges. We can really thank our research staff, Dr L Botes (from the CUT), Mr J vd Heever and Me Carla Prins, for the immense effort they have put into this division to make it work. Laboratory and large animal surgical research is now performed routinely at our institution. This is a great achievement and should be jealously guarded and protected.

Clinical research is also beginning to produce better quality research and we are enthusiastic about a number of studies nearing completion.

2. ACTIVITIES / RESEARCH / ACTIONS

The development of an end-stage heart disease team with national and international support from qualified individuals is a milestone achievement for us. Hopefully this project will deliver a different level of care to our patients.

We shall continue to be involved in sustainability and health economic issues in future, as these issues continue to influence the quality and quantity of our services.