



**HEALTH SCIENCES
GESONDHEIDSWETENSKAPPE**

UFS·UV

FACULTY RESEARCH FORUM

Thursday 27 and Friday 28 August 2015

FAKULTEITSNAVORSINGSFORUM

Donderdag 27 en Vrydag 28 Augustus 2015

The 2015 Faculty of Health Sciences Faculty Research Forum promises to be a very special event. Not only is it the 48th Forum held in this Faculty; it is also characterised by high quality submissions for presentation. It is our hope that this event will serve as a worthy reflection of a Faculty that is known for its high academic standards, efficient service and quality research.

The 2015 Faculty of Health Sciences Faculty Research Forum showcases the research activities of our people and we can be truly proud of each individual who has contributed in some way to make this event a highlight of the year's activities.

Die 2015 Fakulteit Gesondheidswetenskappe Fakulteitsnavorsingsforum beloof om 'n besondere geleentheid te wees. Dit is nie net die 48^{ste} Forum wat in hierdie Fakulteit aangebied word nie; hierdie jaar se Forum word gekenmerk deur hoë gehalte voorleggings vir aanbieding. Ons hoop dat hierdie grootse geleentheid 'n waardige weerspieëling sal wees van 'n Fakulteit wat bekend is vir sy hoë akademiese standarde, doeltreffende dienslewering en gehalte navorsing.

Die 2015 Fakulteit Gesondheidswetenskappe Fakulteitsnavorsingsforum is die toonvenster van die navorsingsaktiwiteite van ons mense en ons kan met reg trots wees op elkeen wat op die een of ander manier daartoe bygedra het om dit 'n hoogtepunt van ons jaar se werksaamhede te maak.

**Message from Prof GJ van Zyl
Dean
Faculty of Health Sciences**

*Prof GJ van Zyl's messages for the Faculty
Research Forum 2015*



A hearty welcome to the 48th Faculty Research Forum of 2015.

In my address last year I remarked that the heat is on for research! And the Faculty members certainly rose to the occasion. We successfully increased our research output by close to 30%. Well done. The work is, however, not done as we are still gathering momentum. I hope that this year's Forum will again contribute significantly towards reaching the target. Thank you to each researcher who invested the time and effort to participate in this prestigious event.

This year we have the wonderful privilege of welcoming Prof Hester Klopper as the speaker at our FP Retief Lecture. Prof Klopper is internationally recognised as an outstanding scholar and leading researcher in the field of Nursing. I am personally looking forward to her talk. Prof Klopper's session is a must for all committed researchers in the field of Health Sciences, and for those who wish to benefit from an excellent role model.

We are also privileged this year to have our Faculty Forum linked to the Alumni weekend on campus. I sincerely hope that some of our Alumni will attend the Forum of 2015 – they will even gain some CPD points for their effort.

The annual Faculty Research Forum is one of the highlights on the calendar of the Faculty of Health Sciences at the University of the Free State. It is my pleasure to thank each of you for presenting your research, contributing to the programme or attending presentations. May I request you to attend the session that deals with the student winners of 2015? Each year this is a very rewarding session that deserves the attention of all Faculty members. By attending you also give our students the recognition they deserve.

A special thank you to Prof Witthuhn who again sponsored part of the Faculty Forum, and to the Organising Committee for all their hard work behind the scenes. Finally I would like to invite everyone to attend the FP Retief Lecture, as well as the presentations by our external evaluators, and to stay on and share in the festivities of the Alumni weekend with our colleagues of former years – may this be a rewarding experience! Welcome and enjoy!

A handwritten signature in black ink, appearing to read 'GJ van Zyl'.

**Prof GJ van Zyl
DEAN**



**HEALTH SCIENCES
GESONDHEIDSWETENSAPPE
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EXTERNAL ADJUDICATORS / EKSTERNE BEOORDELAARS

Professor J Blitz



Associate Professor Julia Blitz is a Family Physician primarily employed in the Division of Family Medicine and Primary Care at Stellenbosch University. In 2008 she completed a Post-graduate Certificate in Higher Education at the University of Pretoria, which gave her the theoretical foundation to complement her interest in health professions education. She works part-time in the Centre for Health Professions Education where she teaches on the MPhil in Health Professions Education and is also facilitating faculty development activities provided for academic staff to strengthen their teaching competence. She has published in, and reviews for, peer-reviewed international medical education journals. In 2014 she became a registered PhD student with the topic "Clinical teaching on an expanding training platform: designing a fit-for-purpose model of faculty development for emerging clinical teachers in a resource-constrained environment".

Professor J Albertyn

Jacobus Albertyn completed his Ph.D. in 1996 and this was followed by a Post-doctoral stay at Rice University, in Houston, Texas, USA. Both his Ph.D. study and post-doctoral research was focussed on osmoregulation in the yeast *Saccharomyces cerevisiae*. After his return to South Africa he changed his research focus to the use of yeast as host for heterologous expression. His research focus includes the taxonomic and biotechnological potential of yeasts, the use of yeast as host for heterologous expression and the study of pathogenic yeasts. Currently he is a Professor of Microbiology in the department of Microbial, Biochemical and Food Biotechnology at the UFS.



Professor JHR Becker



Jan Hendrik Reynor Becker, DOB. 17/08/47, Matriculated 1964 Afrikaans Seuns Hoerskool, MB ChB. (UP) 1972, MMed (Surg.)(UP) 1979 Cum Laude, FCS SA 1980, FRCS (Edin) 1980, FRCS (Glasgow) 1981. Married to Laurel Rose Becker (nee Manley) 13/12/73, three married children: Inge Neill Burger (Pieter Burger); Theunis Christoffel Becker (Mari-Luisa Groenewald); Karen Marie Doyer (Geert Doyer); six grandchildren.
Employed by the Department of Health: 14/12/72 – 31/12/2012 Chief Specialist 1987 – 2012. On the staff of the University of Pretoria: 01/01/1975 – 31/08/2012. Associate Professor from 1982 – 1987; Full Professor from 1987; Head of the Division of Pediatric Surgery from 1981 – 1994; HOD of Surgery from 1994 – 2012. HPCSA registration: Surgeon/Pediatric Surgeon MP0152862. Senior Lecturer: University of Glasgow 1980; Senior Registrar: Pediatric Surgery York Hill, Royal Hospital for Sick Children 1980. Senior Lecturer: University of Leuven Belgium 1997, Gasthuisberg Hospital. Examiner CMSA from 1982 – 2014. External examiner at the Universities of the Witwatersrand, Natal, Free State. External Examiner: Pakistan College of Surgeons in Karachi. Past President: The Association of Surgeons South Africa (ASSA) Past President: Surgical Research Society of Southern Africa (SRS SA) Qualified: 106 MMed (Surg) Surgical Specialists. Qualified: 15 overseas Surgical Specialists. Journal articles: 61. Textbook: Workbook in Paediatric Surgery. 1st and 2nd editions. Chapters in Books: 3. Curriculum Development: MB ChB (years 1 – 6); MMed (Surg) years 1-5; FCS SA (CMSA) Primary, Intermediate and Final. Past and present membership of 16 professional societies. Consultant for CHE, HEQC. Contract research trials: 26 Colonel SANDF. Passed officers' course 1965 Cum Laude; Youngest RSM in SANDF at 19yrs (1966). Active duty in the SANDF Medical Corps, 1967 – present; annual border duty as a surgeon in Northern Namibia for 21 yrs. Citations: 2

22nd Lecture – F.P. RETIEF – 22ste Lesing

INVITED SPEAKER / GENOOIDE SPREKER

Prof H Klopper



Hester Klopper is an international academic and professional leader with extensive international networks in global health, public health, policy development, nursing and health care. She is the Chief Executive Officer of FUNDISA (Forum for University Nursing Deans in SA) and the President of Sigma Theta Tau International (2013-2015) (She is the first person outside of North America to be elected to the position of President of STTI). Prior to this position, she was the Dean of the Faculty of Community and Health Sciences, University of the Western Cape, South Africa, where she continues to hold a full professor appointment. In addition, she holds a professor position with INSINQ, a research focus area, based at North-West University (Potchefstroom Campus). She holds a Master's degree (1992) and PhD (1994) from University of Johannesburg and a MBA (2002) from Luton University in the UK. As a scholar her research programme focuses on positive practice environments, patient safety and quality improvement. A continued interest is global health and the role nurses play in policy influence and strengthening health systems. She has been successful in securing funding for her work over the past decade of more than 50 million ZAR.

Embedded in her work, is the focus on leadership development and capacity development of young scientists. She coordinates the national programme, the PLUME programme, funded by the National Research Foundation (NRF), to support the development of research programmes of university nursing department and post-doctoral candidates. Hester has been the supervisor of more than 25 PhD students and 45+ master's students; she has published 60+ peer reviewed publications, and presented her research and scholarly work at more than 100 international conferences. She is a Fellow of the Academy of Nursing of South Africa (FANSA), an inductee into the Hall of Fame for Excellence in Nursing Research (FUNDISA) and most recently, accepted as a member of the Institute of Directors of South Africa (IODSA).

Faculty of Health Sciences Faculty Research Forum 2015
Fakulteit Gesondheidswetenskappe Fakulteitsnavorsingsforum 2015

ORGANIZING COMMITTEE / REËLINGSKOMITEE

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Prof GJ van Zyl (Dean / Dekaan)
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Dr J van Staden
Dr SM le Grange
Dr L van der Merwe
Mrs / Mev J MacKenzie
Prof A Joubert
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External adjudicator / Eksterne evalueerder:

Prof JHR Becker
Sefako Makgatho Health Sciences University
/ Sefako Makgatho
Gesondheidswetenskappe Universiteit

Adjudicators of research articles /
Beoordeellaars van navorsingsartikels:

Prof JHR Becker
Sefako Makgatho Health Sciences University
/ Sefako Makgatho
Gesondheidswetenskappe Universiteit

Dr I Buccimazza
University of KwaZulu Natal /
Universiteit van KwaZulu Natal
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Prof J Albertyn
University of the Free State /
Universiteit van die Vrystaat

Adjudicators of research articles /
Evalueerders van navorsingsartikels:

Prof J Albertyn
University of the Free State /
Universiteit van die Vrystaat

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Mrs / Mev J MacKenzie
Mrs / Mev T Rauch-van der Merwe

External adjudicator /
Eksterne evalueerder:

Prof J Blitz
University of Stellenbosch /
Universiteit van Stellenbosch

Adjudicators of research articles /
Evalueerders van navorsingsartikels:

Prof J Blitz
University of Stellenbosch /
Universiteit van Stellenbosch

Dr W Nel
University of the Free State /
Universiteit van die Vrystaat
Dr N Geyer
Nursing Education Association

**EVALUATION OF RESEARCH ARTICLES /
 BEOORDELING VAN NAVORSINGSARTIKELS**

PRYSWENNERS / PRIZE WINNERS

John van der Riet-medalje / medal	
Winner / Wenner:	<u>R Lategan</u> , VL van den Berg, CM Walsh Department of Nutrition & Dietetics, School for Allied Health Professions / Departement Voeding & Dieetkunde, Skool vir Aanvullende Gesondheidsberoepe
<i>Body adiposity indices are associated with hypertension in a black, urban Free State Community</i>	
Afr J Prm Health Care Fam Med. 2014;6(1), Art. #581,	
Muller Potgieter-medalje / medal	
Winner / Wenner:	<u>L Mathengtheng</u> , FJ Burt Department of Medical Microbiology and Virology, School of Medicine / Departement van Mikrobiologie en Virologie, Skool vir Geneeskunde
<i>Use of Envelope Domain III Protein for Detection and Differentiation of Flaviviruses in the Free State Province, South Africa</i>	
Vector-Borne And Zoonotic Diseases, Volume 14, Number 4, 2014	
Kerneels Nel-medalje / medal	
Winner / Wenner:	<u>Y Botma</u> School of Nursing / Skool vir Verpleegkunde
<i>Implications of accreditation criteria when transforming a traditional nursing curriculum to a competency-based curriculum</i>	
International Journal of Africa Nursing Sciences 1 (2014) 23–28	
Winner / Wenner:	<u>J Joubert</u> , S Joubert, J Raubenheimer, V Louw Department of Haematology & Cell Biology, School of Medicine / Departement van Hematologie en Selbiologie, Skool vir Geneeskunde
<i>The long-term effects of training interventions on transfusion practice: A follow-up audit of red cell concentrate utilisation at Kimberley Hospital, South Africa</i>	
Transfusion and Apheresis Science 51 (2014) 25–32	

*We express our sincere gratitude to
 the evaluation committees.*

*Ons opregte dank gaan aan
 die beoordelingskomitees.*

BEDANKINGS / ACKNOWLEDGEMENTS

DEELNEMENDE INSTANSIES / PARTICIPATING COMPANIES

We express our sincere thanks to the companies mentioned below for their financial support and valued participation in the 2015 Faculty of Health Sciences Faculty Research Forum of the University of the Free State.

Ons spreek ons opregte dank uit vir finansiële steun ontvang van die ondervermelde instansies asook hul gewaardeerde deelname aan die 2015 Fakulteit Gesondheidswetenskappe Fakulteitsnavorsingsforum van die Universiteit van die Vrystaat.

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School of Nursing UFS
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Dept Chemical Pathology

GOUD / GOLD

None

PLATINUM

Faculty Management Committee, Faculty of Health Sciences
Prof C Witthuhn, Vice-Rector: Research, University of the Free State

UITSTALLERS / EXHIBITORS

- * Novagen
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- * Discovery
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- * Protea Books

Program/ Programme

DONDERDAG, 27 AUGUSTUS 2015 / THURSDAY, 27 AUGUST 2015

		KINE 1		
SESSION 1 08h00-08h15	Chairperson: Dr F Claassen Opening Lecture: Prof GJ van Zyl (Dean: Faculty of Health Sciences)			
SESSION 2 08h20-10h20	KINE 1	KINE 2	KINE 3	
	Chairperson: Prof P Wessels Clinical Papers: KR 1 to 8	Chairperson: Mr W Shaw Laboratory Papers: LR 1 to 8	Chairperson: Dr J Bezuidenhout Educational Papers: OR 1 to 8	
08h20-08h35	KR1: Nadia van der Westhuizen	LR1: Wiliam Rae	OR1: Marius Swart	
08h35-08h50	KR2: Heidi Tromp	LR2: Mmakgabu Khemisi	OR2: Mandie Jacobs	
08h50-09h05	KR3: Aidan Kingwill	LR3: Cebolenkosi Sokhela	OR3: Champion Nyoni	
09h05-09h20	KR4: Anita Conradie	LR4: Hans van den Heever	OR4: Gina Joubert	
09h20-09h35	KR5: Corlia Loots	LR5: Iris Theron	OR5: Jacques Janse van Rensburg	
09h35-09h50	KR6: Carina Vorster	LR6: Wattie Janse van Rensburg	OR6: Jacques Raubenheimer	
09h50-10h05	KR7: Parusha Moodley	LR7: Michael Combrink	OR7: Lynette van der Merwe	
10h05-10h20	KR8: Aubrey Coetzer	LR8: Muriel Meiring	OR8: Marianne Reid	
TEA/TEE (10h20 – 10h30)				
		KINE 1		
SESSION 3 10h30-11h00	Chairperson: Dr LJ van der Merwe Invitation Lecture: Prof J Blitz <i>“Clinician educators: why, what and how.”</i>			
SESSION 4 11h05-13h35	KINE 1	KINE 2	KINE 3	
	Chairperson: Prof RY Seedat Clinical Papers: KR 9 to 18	Chairperson: Prof FJ Burt Laboratory Papers: LR 9 to 18	Chairperson: Dr M Jama Educational Papers: OR 9 to 13	
11h05-11h20	KR9: Corinna Walsh	LR9: Stalyn Mutsakanyi	OR9: Azette Swanepoel	
11h20-11h35	KR10: Deborah Tarlof	LR10: Tumelo Sekee	OR10: Nathaniel Mofolo	
11h35-11h50	KR11: Marizeth Jordaan	LR11: Leandi Liebenberg	OR11: Scarpa Schoeman	
11h50-12h05	KR12: Freddie Claassen	LR12: Maresia Booyens	OR12: Scarpa Schoeman	
12h05-12h20	KR13: Freddie Claassen	LR13: Nichole Rossum	OR13: Yvonne Botma	
12h20-12h35	KR14: Freddie Claassen	LR14: Daniel Franken		
12h35-12h50	KR15: Gerhardus du Toit	LR15: Courage Mahuvava		
12h50-13h05	KR16: Gillian Lai	LR16: Dominique Goedhals		
13h05-13h20	KR17: Ilze Leyll	LR17: Katlego Segoenyane		
13h20-13h35	KR18: Marsha Oberholzer	LR18: Jan Roodt		

LUNCH/MIDDAGETE (13H35-14H00)		
SESSION 5 14h00-14h30	KINE 1	
	<u>Chairperson:</u> Dr SM le Grange Invitation Lecture: Prof JHR Becker <i>“Advances in Surgery: Is there room for more?”</i>	
	<u>Chairperson:</u> Prof G Joubert	
14h35-14h50	Best Student Paper	School of Allied Health Professions
14h50-15h05	Best Student Paper	School of Nursing
15h05-15h20	Best Student Paper	School of Medicine
TEA/TEE (15h20-15h35)		
SESSION 6 15h35-17h35	KINE 1	KINE 2
	<u>Sessievoorsitter:</u> Ms C Brandt Kliniese Referate: KR 19 to 26	<u>Sessievoorsitter:</u> Prof MJ Coetzee Laboratorium Referate: LR 19 tot 24
15h35-15h50	KR19: Marlene Schoeman	LR19: Hester van der Walt
15h50-16h05	KR20: Louis Holtzhausen	LR20: Jan-G Vermeulen
16h05-16h20	KR21: Crosby Mulungwa	LR21: Marsha Oberholzer
16h20-16h35	KR22: Arnold Vlok	LR22: Raul Correia
16h35-16h50	KR23: Marlene Schoeman	LR23: Jaco Oosthuizen
16h50-17h05	KR24: Louis Holtzhausen	LR24: Frank Makosa
17H05-17H20	KR25: Michelle Pienaar	
17h20-17h35	KR26: Michael Pieters	

Program/ Programme
VRYPDAG, 28 AUGUSTUS 2015 / FRIDAY, 28 AUGUST 2015

KINE 1		
SESSIE 7 08h00-08h45	<u>Sessievoorsitter:</u> Prof GJ van Zyl FP Retieflesing: Prof H Klopper – CEO: FUNDISA <i>“Global trends in health care: Implications for research, education and policy”</i>	
	KINE 1	FOYER
SESSIE 8 08h50-10h50	<u>Sessievoorsitter:</u> Ds C Grobler Kliniese Referate: KR 27 to 34	<u>Sessievoorsitter:</u> Mnr JP Roodt Laboratorium Plakkate: LPV 1 tot
08h50-09h05	KR27: Marius Coetzee	LPV1 : Chris Viljoen (08H50-08H55)
09h05-09h20	KR28: Lucia Meko	LPV2: Dries Groenewald (08H55-09H00)
09h20-09h35	KR29: Otto Buchel	LPV3: Charmaine Conradie (09H00-09H05)
09h35-09h50	KR30: Louise van den Berg	LPV4: Jean Kloppers (09H05-09H10)
09h50-10h05	KR31: Ronette Lategan	LPV5: Je'nine Horn-Lodewyk (09H10-09H15)
10h05-10h20	KR32: Riaz Seedat	LPV6: Rethabile Maleka (09H15-09H20)
10h20-10h35	KR33: Tony Tiemesmann	
10h35-10h50	KR34: Ute Hallbauer	
TEA/TEE (10h50-11h05)		
	KINE 1	FOYER
SESSIE 9 11h05-13h05	<u>Sessievoorsitter:</u> Prof R Barry Kliniese Referate: KR35 to 43	<u>Sessievoorsitter:</u> Mr GJ van Zyl Onderwyskundige Plakkate: OPV1 tot 5
11h05-11h20	KR35: Paulina van Zyl	OPV1: Daleen Raubenheimer (11h05-11h10)
11h20-11h35	KR36: Willie Conradie	OPV2: Jaco Joubert (11h10-11h15)
11h35-11h50	KR37: Yolandie Hayden	OPV3: Hannes Coetser (11h15-11h20)
11h50-12h05	KR38: Johann Raats	OPV4: Riana Nel (11h20-11h25)
12h05-12h20	KR39: Joleen Cairncross	OPV5: Mathys Labuschagne (11h25-11h30)
12h20-12h35	KR40: Francis Smit	
12h35-12h50	KR41: Leriska Haupt	
12h50-13h05	KR42: Liska Robb	
13h05-13h20	KR43: Jacobus Otto	
LUNCH/MIDDAGETE (13h20-14h00)		

SESSIE 10 14h00-14h30	KINE 1	
	<u>Sessievoorsitter:</u> Dr J van Staden Uitnodigingslesing: Prof J Albertyn <i>"Candida albicans mutant construction and characterization of selected virulence determinants"</i>	
LUNCH/MIDDAGETE (13h20-14h00)		
SESSIE 11 14h30-14h45	FOYER	
	<u>Sessievoorsitter:</u> Dr M Schoeman Kliniese Plakkate: KPV 1 tot 3	
14h30-14h35	KPV1: Claire Barrett	
14h35-14h40	KPV2: Hanneke Brits	
14h40-14h45	KPV3: Laurisa van Zyl	
SESSIE 12 14h45 – 15h30	KINE 1	
	<u>Sessievoorsitter:</u> Prof M Mulder Replieke: Eksterne Evalueerders	
14h45-15h00	Repliek	Prof J Blitz
15h00-15h15	Repliek	Prof JHR Becker
15h15-15h30	Repliek	Prof J Albertyn
AFSLUITING		
	FOYER	
16H00	AANKONDIGING VAN DIE WENNERS	
	BELANGRIKE KENNISGEWING <i>Alle persone</i> wat voordragte tydens die Forum lewer moet na afloop van Vrydag se verrigtinge in die Foyer aanmeld vir die aankondiging van die prysweners en oorhandiging van pryse tydens 'n skemerelkonthaal.	
	IMPORTANT NOTICE: <i>All persons</i> who present papers during the Forum must assemble in the Foyer directly after the conclusion of Friday's programme for the announcement of the winners and handing over of prizes during a cocktail function.	

Programme / Program
THURSDAY, 27 AUGUST 2015 / DONDERDAG, 27 AUGUSTUS 2015

SESSION 2	KINE 1	KR1 08h20	PATIENT KNOWLEDGE AND ACCEPTABILITY OF THE INTRA-UTERINE CONTRACEPTIVE DEVICE (IUCD) AT A TERTIARY LEVEL HOSPITAL <u>N van der Westhuizen</u> Obstetrics & Gynaecology
		KR2 08h35	CO-MORBIDITY OF AND TREATMENT FOR IRRITABLE BOWEL SYNDROME, DEPRESSION AND ANXIETY IN RESIDENTS OF RETIREMENT VILLAGES <u>A Tromp</u> Pharmacology
		KR3 08h50	THE EFFECTS OF SEVOFLURANE INDUCTION ON THE MYOCARDIAL PERFORMANCE INDEX IN HEALTHY INDIVIDUALS <u>A Kingwill</u> Anaesthesiology
		KR4 09h05	DOSE REDUCTION IN HOLOGIC SELENIA FFDM UNITS THROUGH AEC OPTIMIZATION WITHOUT COMPROMISING DIAGNOSTIC IMAGE QUALITY <u>A Conradie</u> Medical Physics
		KR5 09h20	INTEROBSERVER VARIATION IN DELINEATION OF THE PROSTATE ON CT AND MR, IN RADIOTHERAPY PLANNING AT THE UNIVERSITAS ONCOLOGY DEPARTMENT <u>C Loots</u> Oncology
		KR6 09h35	THE ASSOCIATION BETWEEN LUMBOSACRAL TRANSITIONAL VERTEBRAE (LSTV) AND SURGERY, IN PATIENTS WITH LOW BACK PROBLEMS <u>C Vorster</u> Basic Medical Sciences
		KR7 09h50	HIV INFECTED CHILDREN ADMITTED TO PELONOMI HOSPITAL, BLOEMFONTEIN 2011-2013: THE PREVALENCE, PATIENT PROFILE AND ADMISSION OUTCOME <u>P Moodley</u> Paediatrics & Child Health
		KR8 10h05	THE DIFFERENCE IN PROSTATE SPECIFIC ANTIGEN, GLEASON GRADE AND CLINICAL PRESENTATION OF PROSTATE CANCER BETWEEN AFRICAN AND CAUCASIAN PATIENTS AT THE UNIVERSITY OF THE FREE STATE ACADEMIC COMPLEX FROM 2001 UNTIL 2012 <u>A Coetzer</u> Urology
SESSION 2	KINE 2	LR1 08h20	IMPROVEMENT OF VENTRICLE VOLUMETRIC CALCULATION AND VISUALIZATION IN CARDIAC MRI <u>WID Rae</u> Medical Physics
		LR2 08h35	RE-ENDOTHELIALIZATION OF DECELLULARIZED BABOON ARTERIES <u>MM Khemisi</u> Haematology & Cell Biology
		LR3 08h50	RESTRICTION METHOD FOR DETECTING LOW LEVEL RIFAMPICIN RESISTANCE IN MYCOBACTERIUM TUBERCULOSIS <u>CM Sokhela</u> Medical Microbiology & Virology

Programme / Program
THURSDAY, 27 AUGUST 2015 / DONDERDAG, 27 AUGUSTUS 2015

SESSION 2	KINE 2	LR4 09h05	A SUBCUTANEOUS RAT MODEL TO STUDY THE EFFICACY OF DECELLURIZATION ON CALCIFICATION OF BOVINE PERICARDIUM <u>JJ van den Heever</u> Cardiothoracic Surgery
		LR5 09h20	COMPARISON BETWEEN THE QUALITY CONTROL RESULTS OF THE 3 TESLA AND 1.5 TESLA MAGNETIC RESONANCE IMAGING UNITS AT UNIVERSITAS ACADEMIC HOSPITAL <u>I Theron</u> Medical Physics
		LR6 09h35	SUITABILITY OF THE CHACMA BABOON IN HUMAN TARGETED PRECLINICAL ANTI-PLATELET STUDIES <u>W Janse van Rensburg</u> Haematology & cell Biology
		LR7 09h50	CHARACTERISTICS OF HEREDITARY BREAST CANCER IN THE INDIAN POPULATION OF SOUTH AFRICA <u>HMVE Combrink</u> Human Genetics
		LR8 10h05	DEVELOPMENT OF A VWF PROPEPTIDE ASSAY USING PHAGE- AND YEAST DISPLAY TECHNOLOGIES <u>M Meiring</u> Haematology & Cell Biology
SESSION 2	KINE 3	OR 1 08h20	THE APPLICATION OF THE DELPHI IN A COLLABORATIVE AUTOETHNOGRAPHIC STUDY <u>MK Swart</u> Health Sciences Education
		OR 2 08h35	“THE CHARACTER RESTS HEAVILY WITHIN ME”: DRAMA STUDENTS AS PSYCHIATRIC STANDARDISED PATIENTS <u>AC Jacobs</u> School of Nursing
		OR3 08h50	PERCEPTIONS OF PATIENTS REGARDING DIABETES RELATED HEALTH COMMUNICATION STRATEGIES IN THE FREE STATE, SOUTH AFRICA <u>CN Noyoni</u> School of Nursing
		OR4 09h05	PEER PROTOCOL REVIEW BY SECOND YEAR MEDICAL STUDENT RESEARCH GROUPS: VARIED OR MISSED LEARNING OPPORTUNITIES? <u>G Joubert</u> Biostatistics
		OR5 09h20	IMPROVING POSTGRADUATE RADIOLOGY TRAINING AT THE UNIVERSITY OF THE FREE STATE: RESEARCH-BASED PROPOSALS. <u>J Janse van Rensburg</u> Clinical Imaging Sciences
		OR6 09h35	COMPARISON OF RUBRIC SCORING METHODS <u>JE Raubenheimer</u> Biostatistics
		OR7 09h50	WHAT DOES THE “GOOD LECTURER” IN 21ST CENTURY HEALTH SCIENCES EDUCATION LOOK LIKE? <u>LJ van der Merwe</u> Undergraduate Medical Programme Management

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SESSION 2	KINE 3	OR8 10h05	HEALTH DIALOGUE: A CONCEPT ANALYSIS <u>M Reid</u> School of Nursing
SESSION 4	KINE 1	KR9 11h05	PREOPERATIVE USE OF RESTRICTED ENERGY DIETS TO IMPROVE POSTOPERATIVE OUTCOME IN OBESE PATIENTS SCHEDULED FOR BARIATRIC SURGERY: A SYSTEMATIC REVIEW <u>CM Walsh</u> Nutrition & Dietetics
		KR10 11h20	THE PREVALENCE OF SKIN SCARS ON PATIENTS PREVIOUSLY GIVEN INTRAMUSCULAR DICLOFENAC INJECTIONS, ATTENDING UNIVERSITAS ACADEMIC HOSPITAL PAIN CLINIC <u>D Tarloff</u> Anaesthesiology
		KR11 11h35	ANAEMIA AND ASSOCIATED ANTHROPOMETRIC VARIABLES AMONG WOMEN IN THE RURAL FREE STATE, SOUTH AFRICA <u>EM Jordaan</u> Nutrition & Dietetics
		KR12 10h50	THE OUTCOME AND STRICTURE RECURRENCE IN THE TREATMENT OF ANTERIOR URETHRAL STRICTURES: A 5 YEAR FOLLOW-UP <u>FM Claassen</u> Urology
		KR13 12h05	THE TREATMENT OF HYPOSPADIAS AT THE DEPARTMENT OF UROLOGY AT UNIVERSITY OF THE FREE STATE: PATIENT PROFILE , MANAGEMENT AND OUTCOME <u>FM Claassen</u> Urology
		KR14 12h20	DISINTEGRATING PERINEAL DISEASE IN PATIENTS WITH URETHRAL STRICTURE AND HIV INFECTION: A REVIEW OF 12 CASES <u>FM Claassen</u> Urology
		KR15 12h35	HOW ACCURATE IS ULTRASOUND OF THE OPTIC NERVE SHEATH DIAMETER PERFORMED BY INEXPERIENCED OPERATORS TO EXCLUDE RAISED INTRACRANIAL PRESSURE? <u>GJ du Toit</u> Clinical Imaging Sciences
		KR16 12h50	A RETROSPECTIVE STUDY OF 532 PATIENTS DIAGNOSED WITH OESOPHAGEAL CANCER IN CENTRAL SOUTH AFRICA <u>GN Lai</u> Oncology
		KR17 13h05	LIFESTYLE AND ENVIRONMENTAL RISK FACTORS ASSOCIATED WITH OVERWEIGHT/OBESITY IN WHITE WOMEN FROM THE LEJWELEPUTSWA DISTRICT, SOUTH AFRICA <u>I Leyll</u> Nutrition & Dietetics
		KR18 13h20	MIRROR SYMMETRY OF HIGHER ORDER ABERRATIONS BETWEEN RIGHT AND LEFT EYES <u>M Oberholzer</u> Optometry

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SESSION 4	KINE 2	LR9 11h05	MONTE CARLO STUDY ON MEGA VOLT X-RAY TARGETS FOR EVALUATION OF NANOPARTICLE-ENRICHED TUMOR DOSE ENHANCEMENT <u>S Mutsakanyi</u> Medical Physics
		LR10 11h20	SCREENING OF HUMAN PAPILLOMAVIRUS (HPV) IN PATIENTS WITH CONFIRMED HEAD AND NECK SQUAMOUS CELL CARCINOMA <u>TR Sekee</u> Medical Microbiology & Virology
		LR11 11h35	POSTCRANIOMETRIC ANALYSIS OF ANCESTRY AMONG MODERN SOUTH AFRICANS <u>L Liebenberg</u> Basic Medical Sciences
		LR12 10h50	VERIFICATION OF A MONTE CARLO SIMULATED SIEMENS SYMBIA SPECT/CT <u>M Booyens</u> Medical Physics
		LR13 12h05	EVALUATION OF AN AUTOMATED LUPUS ANTICOAGULANT METHOD USING THE SYSMEX CS-2000I SYSTEM® <u>N Rossum</u> Haematology & Cell Biology
		LR14 12h20	THE NEW WHO CRITERIA FOR HUMAN SEMEN: ACCEPT OR REJECT? <u>DR Franken</u> Obstetrics & Gynaecology
		LR15 12h35	MONTE CARLO EVALUATION OF THE DOSE PERTURBATION EFFECT OF HIP PROSTHESES FOR MEGAVOLTAGE PHOTON RADIOTHERAPY <u>C Mahuvava</u> Medical Physics
		LR16 12h50	IDENTIFICATION OF NOVEL T CELL EPITOPES ON CRIMEAN-CONGO HAEMORRHAGIC FEVER VIRUS AND CONFIRMATION OF LONG-LIVED MEMORY T CELL RESPONSES <u>D Goedhals</u> Medical Microbiology & Virology
		LR17 13h05	INSTALLATION PROCESS FOR A PHILIPS INGENIA 3 TESLA MAGNETIC RESONANCE IMAGING UNIT AT UNIVERSITAS ACADEMIC HOSPITAL <u>RK Segoenyane</u> Medical Physics
		LR18 13h20	N-ACETYLCYSTEINE IS NOT EFFECTIVE IN THE PREVENTION AND TREATMENT OF THE ACUTE EARLY EPISODES OF ACQUIRED TTP IN BABOONS <u>JP Roodt</u> Haematology & Cell Biology
SESSION 4	KINE 3	OR9 11h05	FACTORS INFLUENCING ACADEMIC SUCCESS OF FIRST YEAR OCCUPATIONAL THERAPY STUDENTS AT THE UNIVERSITY OF THE FREE STATE <u>A Swanepoel</u> Occupational Therapy
		OR10 11h20	INTERNSHIP EXPERIENCE OF MEDICAL INTERNS IN THE FREE STATE PROVINCE <u>N Mofolo</u> Family Medicine

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SESSION 4	KINE 3	OR11 11h35	CHANGING STANDARD SETTING BELIEFS AND BEHAVIOURS IN POSTGRADUATE CERTIFICATION EXAMINATIONS – CAN IT BE DONE? <u>FHS Schoeman</u> Internal Medicine
		OR12 11h50	COMPARING THE PERFORMANCE AND UTILITY OF THE COHEN AND ANGOFF STANDARD SETTING METHODS IN HIGH-STAKES POSTGRADUATE ASSESSMENT <u>FHS Schoeman</u> Internal Medicine
		OR13 12h05	TRAINING OF INTERPROFESSIONAL FACILITATORS <u>Y Botma</u> School of Nursing
SESSION 6	KINE 1	KR19 15h35	EXERCISE PRESCRIPTION PART 1: KNOWLEDGE, PRACTICE AND ATTITUDES AMONG SOUTH AFRICAN DOCTORS <u>M Schoeman</u> Sport & Exercise Medicine
		KR20 15h50	EXERCISE PRESCRIPTION PART 2: KNOWLEDGE, ATTITUDES AND SELF-PERCEIVED COMPETENCE TOWARDS EXERCISE PRESCRIPTION AMONG FINAL YEAR MEDICAL STUDENTS <u>L Holtzhausen</u> Sport & Exercise Medicine
		KR21 16h05	THE USE OF TRADITIONAL MEDICINE AND RITUALS IN PROFESSIONAL SOCCER IN SOUTH AFRICA <u>LC Mulungwa</u> Sport & Exercise Medicine
		KR22 16h20	REHABILITATION AND RETURN TO PLAY AFTER ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION: A SYSTEMATIC REVIEW AND DEVELOPMENT OF A CONCEPTUAL REHABILITATION <u>AC Vlok</u> Sport & Exercise Medicine
		KR23 16h35	CLINICAL, HAEMATOLOGICAL AND BIOCHEMICAL CHARACTERISTICS OF SOUTH AFRICAN GOLD- MINERS WHO PRESENT WITH EXERCISE-ASSOCIATED MUSCLE CRAMPS <u>M Schoeman</u> Sport & Exercise Medicine
		KR24 16h50	CLINICAL, HAEMATOLOGICAL AND BIOCHEMICAL CHARACTERISTICS OF SOUTH AFRICAN GOLD- MINERS WHO PRESENT WITH EXERCISE-ASSOCIATED MUSCLE CRAMPS <u>L Holtzhausen</u> Sport & Exercise Medicine
		KR25 17h05	REPORTED CLINICAL MANIFESTATIONS ASSOCIATED WITH HIV STATUS IN PEOPLE FROM RURAL AND URBAN COMMUNITIES IN THE FREE STATE, SOUTH AFRICA <u>M Pienaar</u> Nutrition & Dietetics
		KR26 17h20	The histological underestimation of a 9-gauge stereotactic vacuum assisted breast biopsy system compared with surgical excision at a tertiary hospital in South Africa <u>M Pieters</u> Clinical Imaging Sciences

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SESSION 6	KINE 2	LR19 15h35	COMPARING DIFFERENT FETAL DOSE CALCULATION METHODS <u>HC van der Walt</u> Medical Physics
		LR20 15h50	THE IN VITRO REFOLDING A HUMAN DERIVED SINGLE CHAIN VARIABLE FRAGMENT AGAINST TISSUE FACTOR <u>J Vermeulen</u> Haematology & Cell Biology
		LR21 16h05	A COMPARISON OF THE ABILITY OF THREE COMMON CONTACT LENS SOLUTIONS WITH DIFFERENT CONSTITUENTS TO INHIBIT GROWTH OF STAPHYLOCOCCUS AUREUS <u>M Oberholzer</u> Optometry
		LR22 16h20	IMPACT OF PROLONGED POST-MORTEM COLD ISCHAEMIC TIME ON LEAFLET CALCIFICATION ON THE JUVENILE SHEEP MODEL <u>R Correia</u> Cardiothoracic Surgery
		LR23 16h35	CHALLENGES AND LIMITATIONS ENCOUNTERED WITH MLPA OPTIMIZATION <u>J Oosthuizen</u> Human Genetics
		LR24 16h50	DIAGNOSTIC REFERENCE LEVELS FOR THE VASCULAR, SCREENING AND ADULT CARDIOLOGY UNITS AT UNIVERSITAS ACADEMIC HOSPITAL <u>F Makosa</u> Medical Physics

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SESSION 8	KINE 1	KR27 08h50	A CLINICAL AND GENETIC ANALYSIS OF HEREDITARY HAEMORRHAGIC TELANGIECTASIA IN THE FREE STATE AND NORTHERN CAPE <u>MJ Coetzee</u> Haematology & Cell Biology
		KR28 09h05	THE FOOD ENVIRONMENT AND DIETARY PRACTICES OF STUDENTS ON A FINANCIAL ASSISTANCE PROGRAMME AT THE UNIVERSITY OF THE FREE STATE <u>NML Meko</u> Nutrition and Dietetics
		KR29 09h20	HELICOBACTER PYLORI AS AN OCCUPATIONAL HAZARD IN THE ENDOSCOPY ROOM <u>OC Buchel</u> Surgery
		KR30 09h35	KNOWN DIETARY RISK FACTORS FOR IRON DEFICIENCY AMONG MOTHERS AND THEIR YOUNG CHILDREN IN THE NORTHERN REGION OF GHANA <u>VL van den Berg</u> Nutrition & Dietetics
		KR31 09h50	BODY ADIPOSITY A POOR PREDICTOR OF BLOOD GLUCOSE CONTROL IN BLACK FEMALES WITH TYPE 2 DIABETES MELLITUS ATTENDING DIABETES CLINICS IN BLOEMFONTEIN <u>R Lategan</u> Nutrition & Dietetics
		KR32 10h05	THE EFFECT OF HIV INFECTION ON DISEASE AGGRESSIVENESS IN PATIENTS WITH JUVENILE-ONSET RECURRENT RESPIRATORY PAPILLOMATOSIS <u>RY Seedat</u> Otorhinolaryngology
		KR33 10h20	TEMPORAL EVALUATION OF COMPUTED TOMOGRAPHIC SCANS AT A LEVEL I TRAUMA DEPARTMENT IN A CENTRAL SOUTH AFRICAN HOSPITAL <u>TN Tiemesmann</u> Clinical Imaging Sciences
		KR34 10h35	BLOOD GLUCOSE CONTROL AT THE ANNUAL CHILDREN'S DIABETES CAMP <u>U Hallbauer</u> Paediatrics and Child Health
SESSION 8	FOYER	LPV1 08h50	A PERSPECTIVE ON GM DETECTION IN SOUTH AFRICA <u>CD Viljoen</u> Haematology & Cell Biology
		LPV2 08h55	ANDROGEN AND METABOLIC CHANGES AFTER ORCHIECTOMY <u>AJ Groenewald</u> Chemical Pathology
		LPV3 09h00	SENSITIVITY OF THE PFA-100 TO WILLEBRAND DISEASE AND ASPIRIN INTAKE <u>C Conradie</u> Haematology & Cell Biology

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SESSION 8	FOYER	LPV4 09h05	EVALUATION OF AN AUTOMATED CHROMOGENIC FACTOR VIII ASSAY <u>JF Kloppers</u> Haematology & Cell Biology
		LPV5 09h10	NORMAL BIODISTRIBUTION OF ^{99m}Tc IN RABBITS AND BABOONS <u>J Horn –Lodewyk</u> Nuclear Medicine
		LPV6 09h15	ASSESSMENT OF VON WILLEBAND FACTOR STATUS OF PATIENTS UNDERGOING RENAL BIOPSY <u>R Maleka</u> Haematology & cell Biology
SESSION 9	KINE 1	KR35 11h05	BEER-ONLY DRINKING ALCOHOL DEPENDENT PERSONS ARE DIFFERENT <u>PM van Zyl</u> Pharmacology
		KR36 11h20	AAST HIGH GRADE KIDNEY INJURY CLASSIFICATION: ABC APPROACH TO INJURY GRADING, MANAGEMENT AND RADIOLOGICAL SURVEILLANCE <u>WJ Conradie</u> Clinical Imaging Sciences
		KR37 11h35	ADJUSTING CALCIUM FOR ALBUMIN IS INAPPROPRIATE AT LOW SERUM ALBUMIN LEVELS <u>Y Hayden</u> Chemical Pathology
		KR38 11h50	PROFILE, HUMAN IMMUNODEFICIENCY VIRUS STATUS, AND OUTCOME OF PATIENTS WITH CONJUNCTIVAL SQUAMOUS CELL CARCINOMA TREATED AT THE DEPARTMENT OF ONCOLOGY <u>Jl Raats</u> Oncology
		KR39 12h05	PREVALENCE OF EYE PATHOLOGY IN DIABETIC CLINIC PATIENTS AT NATIONAL DISTRICT HOSPITAL, BLOEMFONTEIN, FREE STATE <u>J Cairncross</u> Family Medicine
		KR40 12h20	IMPACT OF INTERVENTION DURING CARDIOPULMONARY BYPASS BASED ON PEAK INTRA-OPERATIVE SERUM LACTATE <u>F Smit</u> Cardiothoracic Surgery
		KR41 12h35	DETERMINATION OF FUNCTIONAL IRON DEFICIENCY STATUS IN HAEMODIALYSIS PATIENTS AT PELONOMI HOSPITAL AND KIMBERLEY HOSPITAL COMPLEX <u>L Haupt</u> Haematology & Cell Biology
		KR42 12h50	KNOWLEDGE, ATTITUDES AND PRACTICES AND RELATED FACTORS OF HIV-INFECTED MOTHERS REGARDING HIV AND INFANT FEEDING <u>L Robb</u> Nutrition & Dietetics

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SESSION 9	KINE 1	KR43 13h05	POST-TREATMENT SURVEILLANCE ABDOMINOPELVIC COMPUTED TOMOGRAPHY IN CHILDREN WITH WILMS TUMOUR: IS IT WORTH THE RISK? <u>JH Otto</u> Clinical Imaging Sciences
SESSION 9	FOYER	OPV1 11h05	ANATOMY COMPETENCE: IS THE GOAL SCORED? <u>D Raubenheimer</u> Basic Medical Sciences
		OPV2 11h10	THE LONG-TERM EFFECTS OF TRAINING INTERVENTIONS ON TRANSFUSION PRACTICE: A FOLLOW-UP AUDIT OF RED CELL CONCENTRATE UTILISATION <u>J Joubert</u> Haematology and Cell Biology
		OPV3 11h15	PREVENTING LECTURALGIA BY USING MIXED LEARNING STRATEGIES WHEN TEACHING UNDERGRADUATE MEDICAL STUDENTS <u>JA Coetser</u> Internal Medicine
		OPV4 11h20	CORE CURRICULUM GUIDELINESS FOR AN UNDERGRADUATE NUCLEAR MEDICINE MODULE IN THE MBCHB PROGRAMMES IN SOUTH AFRICA <u>MG Nel</u> Nuclear Medicine
		OPV5 11h25	ESTABLISHMENT OF AN INTERPROFESSIONAL HEALTHCARE TEAM: EVIDENCE OF STUDENT LEARNING <u>M Labuschagne</u> School of Medicine
SESSION 11	FOYER	KPV1 14h30	KEY AMULETS AND EPISTAXIS. IS THERE A LINK? <u>C Barrett</u> Internal Medicine
		KPV2 14h35	THE ROLE OF DRAWINGS TO ENHANCE COMMUNICATION AND ASSESS EMOTIONAL WELL-BEING IN CHILDREN RECEIVING PEDIATRIC PALLIATIVE CARE <u>H Brits</u> Family Medicine
		KPV3 14h40	REPORTED EXPOSURE TO TRAUMA AMONG ADULT PATIENTS REFERRED FOR PSYCHOLOGICAL SERVICES AT THE FREE STATE PSYCHIATRIC COMPLEX <u>L van Zyl</u> Psychiatry

INSTRUCTIONS TO PRESENTERS

1. The author whose name is underlined in the abstract delivers the presentation.
2. A paper lasts 15 minutes (including 5 minutes for questions), and a poster session lasts 4 minutes (including 2 minutes for questions). In order to give everyone a fair opportunity, we kindly request presenters to adhere strictly to the set times.
3. Facilities for electronic data projection are available. In view of time constraints, we kindly request presenters to load their presentations onto the computer network well in advance.
4. The poster exhibition is on display in the marble foyer of the F.P. Retief Building for viewing from Wednesday to Friday.
5. A friendly reminder: All winners will be announced at the last session of the Forum, Friday afternoon at 16h00.

Dr FM Claassen

Chairperson: Organising Committee

INSTRUKSIES VIR AANBIEDERS

1. Die outeur wie se naam onderstreep is in die abstrak, lewer die voordrag.
2. 'n Referaat duur 15 minute (insluitend 5 minute vir vrae), en 'n plakkaatvoordrag duur 4 minute (insluitend 2 minute vraetyd). Hoflik versoek ons dat aanbieders streng by die toegekende tyd hou ten einde elkeen 'n billike kans te gee.
3. Fasiliteite vir elektroniese dataprojeksie is beskikbaar. In die lig van die beperkte tyd, versoek ons aanbieders vriendelik om hul aanbiedings betyds op die rekenaarnetwerk te laai.
4. Die plakkaatuitstalling kan besigtig word in die marmervoorportaal van die F.P. Retiefgebou vanaf Woensdag tot Vrydag.
5. 'n Vriendelike herinnering: Die wenners word aangekondig by die laaste sessie van die Forum om 16h00.

Dr FM Claassen

Voorsitter: Reëlingskomitee

KLINIESE REFERATE/ CLINICAL PAPERS

KR -1

**Title: PATIENT KNOWLEDGE AND ACCEPTABILITY OF THE INTRA-UTERINE CONTRACEPTIVE DEVICE (IUCD)
AT A TERTIARY LEVEL HOSPITAL.**

Authors: N van der Westhuizen, GJ Hanekom

Departments: Obstetrics and Gynaecology

Presenter: Nadia van der Westhuizen

Background: The intrauterine device (IUCD) is a highly effective and safe method of contraception. Prevention of unwanted pregnancies has made its use a matter of national priority in certain countries. Despite numerous advantages and suitability the uptake of the IUCD is poor. Patients in South Africa seem to lack knowledge regarding this contraceptive.

Objectives: The aim of this study was to determine the quantity and quality of knowledge of the IUCD, and to evaluate its acceptability for future use.

Methods: A prospective cross-sectional study was conducted at Pelonomi Tertiary Hospital. 201 Patients were interviewed using semi-structured questionnaires.

Results: Awareness of the IUCD was found in almost half (49%, n=95) of our patients. Its use was very low, with only one patient having used it before. Overall qualitative knowledge was poor, even among those that were aware of the IUCD. There was a significant association between level of education and knowledge, with patients having passed Grade 12 or higher significantly more likely to have knowledge of the IUCD than those at lower levels (RR 1.57, 95% CI 1.18-2.08). Forty-five percent (n=86) of patients indicated a desire for future IUCD use.

Conclusion: Despite the availability of the IUCD in South African clinics and hospitals, its uptake is still poor. Awareness of this method seemed to have improved over the past few years, but the qualitative knowledge still lacks considerably. Education plays a major role in the knowledge of contraception and better educational aids in all facilities will increase its use and reduce unwanted pregnancies.

KR -2

**Title: CO-MORBIDITY OF AND TREATMENT FOR IRRITABLE BOWEL SYNDROME, DEPRESSION AND ANXIETY
IN RESIDENTS OF RETIREMENT VILLAGES**

Authors: A Tromp, PM van Zyl

Departments: Pharmacology

Presenter: Heidi Tromp

Introduction and aim: Irritable bowel syndrome (IBS), depression and anxiety are very common and often co-occur. Data for depression prevalence in the elderly in South Africa are available, but there are no data on the prevalence of anxiety and IBS in this population. Further, the existing literature does not report on the influence of medication use on these conditions. The aim of this study was to determine the prevalence and co-morbidity of IBS, depression and anxiety in retirement village residents against the background of the pattern of antidepressant, anxiolytic and gastrointestinal medication use.

Methodology: Two hundred ambulant residents older than 50 years were recruited from 2 retirement villages in an urban setting in South Africa by means of convenience sampling. A cross-sectional observational study was performed with a questionnaire consisting of the Manning criteria and the Hospital Anxiety and Depression Scale, supplemented by custom-designed questions to evaluate medication use.

Results: The prevalence of IBS, depression and anxiety were found to be 4.5%, 3.0% and 4.5%, respectively. Sixty-nine participants (34.5%) reported antidepressant use. Forty-one participants (20.5%) reported the current use of benzodiazepines. Proton pump inhibitors (PPIs) were used by 17.5%. The majority of participants using antidepressants, anxiolytics and PPIs were taking these for one year or longer. Participants taking PPIs or antidepressants were more likely to experience individual symptoms of IBS than those not taking PPIs or antidepressants and these differences were statistically significant. Benzodiazepines did not have an influence on the presence of IBS symptoms.

Conclusion: The lower than expected prevalence of IBS, depression and anxiety diagnosis occurred against the background of a high level of prolonged antidepressant, anxiolytic and proton pump inhibitor use. Yet, the use of the PPIs and antidepressants contributed to individual symptoms of IBS when compared to groups not on these drugs.

KR -3

Title: THE EFFECTS OF SEVOFLURANE INDUCTION ON THE MYOCARDIAL PERFORMANCE INDEX IN HEALTHY INDIVIDUALS

Authors: AC Kingwill, J van der Westhuizen, EW Turton, G Joubert

Departments: Anaesthesiology; Biostatistics

Presenter: Aidan Con Kingwill

Background: The myocardial performance index (TEI) is a simple, reproducible and easily performed measure of cardiac performance. It incorporates diastolic and systolic function into a single value. Its ease of use and proven clinical application make this a highly useful measure peri-operatively. The effects of Sevoflurane on this index could guide the application of TEI peri-operatively.

Methods: 36 patients were included in this study. They were ASA 1 patients scheduled for elective, day-case surgery. They received general anaesthesia with Sevoflurane at end-tidal concentrations equating to 1 MAC, whilst breathing spontaneously. They received no pre-medication and no additional drugs were administered at induction. Baseline haemodynamics and echocardiographic assessments were done before induction and repeated at steady state. Steady state was defined as end-tidal Sevoflurane concentrations of 2.3% for 3-5 minutes. Offline analysis using tissue doppler studies of the lateral mitral annulus, as well as continuous wave doppler studies of the trans-mitral inflow and left ventricular outflow tract.

Results: Changes in haemodynamics were as expected [Systolic blood pressure: mean (95% CI) -13.31 (-17.77 to -8.85); diastolic blood pressure: mean (95% CI) -6.69 (-11.40 to -1.98); heart rate: mean (95% CI) -2.24 (-6.63 to 2.15)]. Isovolumic contraction time decreased from baseline [mean (95% CI) -3.67 (-5.61 to -1.73)]. Isovolumic relaxation time also decreased [mean (95% CI) -6.89 (-9.93 to -3.85)]. Ejection time decreased [mean (95% CI) -8.15 (-13.71 to -2.59)]. This saw a consistent decrease in the TEI-index with a p-value of <0.0001 [mean (95% CI) -0.03 (-0.04 to -0.02)].

Conclusion: Sevoflurane decreases the TEI-index in young, healthy patients during Sevoflurane anaesthesia at 1-MAC during spontaneous respiration. This implies that overall cardiac performance in healthy individuals is not negatively affected by Sevoflurane anaesthesia at 1 MAC.

KR -4

Title: DOSE REDUCTION IN HOLOGIC SELENIA FFDM UNITS THROUGH AEC OPTIMIZATION WITHOUT COMPROMISING DIAGNOSTIC IMAGE QUALITY

Authors: A Conradie, WJ Conradie, S Otto

Departments: Clinical Imaging Science, Medical Physics

Presenter: Anita Conradie

Introduction and aim: Mammographic examinations are performed to aid in the diagnosis and classification of breast abnormalities. Breast tissue is known to be radiosensitive and therefore this study aim to determine if dose reduction in Hologic Selenia FFDM is achievable through Automatic Exposure Control (AEC) optimization. Radiologist preference towards image sets obtained a different doses was also investigated.

Methods: A phantom study was performed to evaluate the systems AEC optimization using the CDMAM phantom. In the before-and-after clinical trial patients were imaged using both current and adjusted AEC settings, the latter providing images at a lower dose. Patients were divided in 3 groups based on breast parenchymal density to have comparable numbers in terms of patient age, breast thickness and density. Corresponding paired dose images were evaluated by two mammography radiologists in terms of diagnostic quality and image preference.

Results: The Phantom study proved that the systems AEC could be optimized. Twenty one patients were recruited after their routine mammography study and had one additional lower dose acquisition per breast. Forty –two paired dose images were evaluated. Radiologists neither found a significant difference in diagnostic quality nor clearly preferred any set of dose images. Concerns raised about image quality were mostly attributed to patient re-positioning and benign calcifications. Notably 50% of these concerns were seen in higher dose images. Lower dose images were preferred for less dense breasts. Higher dose images were preferred in thinner breasts irrespective of breast density.

Conclusion: A 25% dose reduction, without loss in diagnostic image quality, was achieved through AEC optimization. Data showed that radiologists did not necessarily prefer higher- over lower dose images, in fact, it was found that lower dose images were often preferred in thicker breasts irrespective of breast parenchymal density.

KR -5

Title: INTEROBSERVER VARIATION IN DELINEATION OF THE PROSTATE ON CT AND MR, IN RADIOTHERAPY PLANNING AT THE UNIVERSITAS ONCOLOGY DEPARTMENT

Authors: C Loots, A Sherriff

Departments: Oncology

Presenter: Corlia Loots

Introduction and aim: Contouring of target volumes is an essential part of modern radiotherapy planning. For prostate intensity modulated radiation, CT and MR images are used. This study investigated variation between doctors with regards to delineation of the prostate and identified anatomical areas where concordance was poor. Volumes contoured on CT were compared to volumes contoured on MR, for the same patient. Differences between the consultant group and registrar group were investigated.

Methods: Thirteen doctors including seven consultants and six registrars in Radiation Oncology, contoured the prostate independently on CT as well as MR images of five patients. The maximum volume ratio was calculated to compare the size of CT volumes to MR volumes for the same patient. Eight specific measurements were performed by the researcher on each volume. The coefficient of variation (CV) was calculated for each parameter. To quantify the amount of variation the proximity index was calculated by using the intersecting volume and the total volume contoured by all the doctors on a specific scan.

Results: Maximum volume ratio was calculated as 2.2, which implies that the prostate volume was on average more than double on CT compared to MR. The proximity index was 5.51 on CT imaging and 5.3 on MR, which corresponds to poor concordance. The CV was high for all the parameters (range between 7.12 and 36.79). The highest values were obtained for the apex and base, regardless of the image modality used. Registrars generally overestimated the size of the apex. The CV was mostly similar when the registrar group and consultant group were compared to each other.

Conclusion: Large interobserver variation occurred, especially with the size of the base and the apex. The prostate is contoured much smaller on MR, but the variation in delineation is similar regardless of the image modality used.

KR -6

Title: KR -1 THE ASSOCIATION BETWEEN LUMBOSACRAL TRANSITIONAL VERTEBRAE (LSTV) AND SURGERY, IN PATIENTS WITH LOW BACK PROBLEMS.

Authors: C Vorster

Departments: : Department of Basic Medical Sciences

Presenter: Carina Vorster

Introduction and aim: The lumbosacral region is one of the danger areas in the spinal column because it is subjected to forces greater than anywhere else in the body. Everyone at some time in their life has had some degree of low back problems. Among the possible causes for this are the developmental anomalies which are particularly common in this region. Lumbosacral transitional vertebra (LSTV) is a congenital vertebral anomaly of the L5-S1 junction of the spine. The association of back problems with LSTV was first described in 1917 by Mario Bertolotti. Since then it has been highly debated.

The aim of this study was to determine whether the presence of a LSTV is associated with a higher incidence of surgery in patients with low back problems.

Methodology: The study population included 158 patients who presented at a private neurosurgery practice in Bloemfontein with low back problems. Their clinical notes as well as x-rays were studied. Patients that were in motor vehicle accidents were excluded.

Results: The results showed that 58.2% of the 141 patients without a LSTV needed surgery, while 64.7% of the 17 patients with a LSTV needed surgery (chi-squared p-value=0.6) .

Conclusion: The reason for this might be because in either case of lumbarisation or sacralisation, the joint above the LSTV had to work harder to compensate for the decrease in movement, due to the LSTV. Patients with a LSTV therefore have a slightly higher incidence of back surgery than their counterparts without a LSTV. A larger sample of patients with a LSTV is needed to confirm these findings.

KR -7

**Title: HIV INFECTED CHILDREN ADMITTED TO PELONOMI HOSPITAL, BLOEMFONTEIN 2011-2013:
THE PREVALENCE, PATIENT PROFILE AND ADMISSION OUTCOME**

Authors: P Moodley, U Hallbauer, G Joubert

Departments: Paediatrics and Child health, Biostatistics

Presenter: Parusha Moodley

Introduction and Aim: There have been numerous changes to the HIV treatment and prevention programs since the initiation of PMTCT in 2002 and the roll-out of ART in 2004. The aim of the study was to assess the prevalence of HIV infection and associated mortality among paediatric admissions.

Methodology: A retrospective descriptive study with a cross-sectional analytic component was conducted at Pelonomi hospital, Bloemfontein for the years 2011-2013. Patient records were used to obtain the following data from HIV-infected children <13 years: age, gender, frequency of admission, ART status and outcome.

Results: There were 516 unique children with more boys (296/516;57.4%) than girls (220/516;42.6%) for all three years ($p < 0.01$). The prevalence of HIV-infection amongst hospitalised children remained constant in 2011 and 2012, 244/1961 (12.4%) and 242/2065 (11.7%), however in 2013 it decreased significantly 168/1690 (9.9%) ($p = 0.05$). The mean age of children at first admission was 3.5, 3.8, 4.7 years for the three years respectively. The percentage of HIV-infected children who were ≤ 18 months was 109/244 (44.6%) in 2011, 92/242 (38.0%) in 2012 and 46/242 (27.4%) in 2013, a significant decrease ($p < 0.01$). The percentage of admitted children who were on ART at the time of admission was higher in 2013 compared to 2011 (37.7% vs. 48.8%; $p = 0.02$). In 2013 significantly fewer patients were sent to other health care institutions for initiation of ART (16.4% in 2011 vs. 10.7% in 2013; $p < 0.01$) as more patients were initiated in the ward when compared to 2011 (29.2% vs. 24.6%). There was a decline in the mortality which was however not significant [2011: 24/244 (9.8%); 2012: 21/242 (8.7%); 2013: 13/168 (7.7%) p value = 0.60].

Conclusion: The percentage of HIV-infected children ≤ 18 months decreased, probably due to successful implementation of the PMTCT program. More children initiated during admission or already on ART reflects increased clinician confidence and better overall ART coverage.

KR -8

Title: THE DIFFERENCE IN PROSTATE SPECIFIC ANTIGEN, GLEASON GRADE AND CLINICAL PRESENTATION OF PROSTATE CANCER BETWEEN AFRICAN AND CAUCASIAN PATIENTS AT THE UNIVERSITY OF THE FREE STATE ACADEMIC COMPLEX FROM 2001 UNTIL 2012

Authors: A Coetzer, FM Claassen, SW Wentzel, G Joubert

Departments: Urology and Biostatistics

Presenter: Aubrey Coetzer

Introduction and aim: There is conflicting evidence from studies suggesting that prostate cancer is more aggressive and more advanced in African men compared to Caucasian men. The aim of our study is to determine if the Gleason score, prostate specific antigen level (PSA) and clinical presentation of prostate cancer differ between African and Caucasian men at our facility where all patients have equal access to our health care facility.

Methodology: A retrospective review was done of 1248 files of patients diagnosed with prostate cancer from 2001-2012. We compared the Gleason score, PSA and clinical presentation of prostate cancer between the African and Caucasian men.

Results: The records of 933 patients' of the 1284 were eligible for review. 263 (28.19%) Caucasian, 614 (65.81%) patients were African and 56 (6%) patients were mixed race. Mean age for Caucasians were 69.79 (range 47-90) years, Africans 69.61 (range 23-97) years and Mixed race 67.63 (range 46-86) years. ($p = 0.079$). The PSA for Caucasians was median 12 (range 6.8-46) ng/ml, Africans median 85.5 (range 17.9-565.5) ng/ml and mixed race median 79 (9.9-295) ng/ml. ($p < 0.01$). The median Gleason grade for Caucasians was 7 (3+4), Africans 8 (4+4) and mixed race 7 (4+3). ($p < 0.01$) Clinical stage had a median of T2a for Caucasians, T3a for Africans and T3a for mixed race patients. ($p < 0.01$)

Conclusion: Our data indicate that Africans presented with a statistically significant higher PSA, Gleason grade and clinical stage compared to Caucasians.

KR-9

Title: PREOPERATIVE USE OF RESTRICTED ENERGY DIETS TO IMPROVE POSTOPERATIVE OUTCOME IN OBESE PATIENTS SCHEDULED FOR BARIATRIC SURGERY: A SYSTEMATIC REVIEW

Authors: CM Walsh , A Els, VL van den Berg

Departments: Nutrition and Dietetics

Presenter: Corinna Walsh

Introduction: Excessive abdominal fat and increased liver volume associated with liver steatosis increase surgical complexity of bariatric procedures in obese individuals due to obstruction of anatomical markers, reduced operating space and increased trauma with liver traction. Few studies have been able to convincingly report a link between a pre-operative restricted energy approach and improved intra- and postoperative patient outcome. This review was undertaken to report on the effectiveness of commercial pre-operative restricted energy diet programmes to induce liver-shrinking (both volume and fat content), before bariatric surgery.

Methods: A systematic literature search was undertaken to identify published studies related to the study objective. A two-step search was conducted on trials published from 1980 to 2012. Initial search yielded 33 studies. Twenty-one studies were excluded based on title or level one screening and three more were excluded based on level two screening. To be included trials had to report on at least one of the following outcome measures: effect on liver size, liver fat, surgical difficulty, operating time, blood loss, post-operative complication and patient compliance.

Results: The final review included nine trials, of which most were of poor quality with moderate to high risk of bias. Six studies reported on data relevant to the primary study objective and indicated that preoperative energy restriction significantly reduces liver volume and liver fat content. Studies that reported on intra-operative factors (surgical complexity, operating time and blood loss) could not confirm that liver shrinking is of benefit to the surgeon or to the patient. One study indicated that patients may have better 30-day postoperative outcome.

Conclusion: Restricted energy diets, used for two to four weeks before bariatric surgery, significantly reduce liver volume and fat content in obese patients. Data is lacking to confirm whether these changes to liver morphology improve other outcome parameters.

KR-10

Title: THE PREVALENCE OF SKIN SCARS ON PATIENTS PREVIOUSLY GIVEN INTRAMUSCULAR DICLOFENAC INJECTIONS, ATTENDING UNIVERSITAS ACADEMIC HOSPITAL PAIN CLINIC

Authors: D Tarloff, G Lamacraft

Departments: Anaesthesiology

Presenter: Deborah Tarloff

Introduction: An incidental finding of scarring after intramuscular Diclofenac was made at the Pain Clinic, Universitas Academic Hospital. The primary objective of our study was to document the prevalence of scars caused by these injections and also to determine how patients obtained intramuscular diclofenac and who administered it to them.

Methods: A descriptive study was performed at the Pain Clinic. Informed consent was obtained and all patients attending (2nd December 2013 – 27th August 2014) were included. Participants completed a questionnaire and the attending doctor examined the injection site. Data captured at examination included: site of injection(s) and skin changes.

Results: 131 participants were enrolled and data analysis was performed on 118 participants (these participants were completely sure injection they had received was diclofenac). Scarring was identified in eleven participants (8.47%). 51.7% (n=61) participants received the injection from a general practitioner; 38.1% (n=45) a private pharmacist; 18.6% (n=22) a hospital pharmacy; 5.9%(n=7) at home; 1.18% (n=2) from nurses; 1.18% (n=2) at a clinic, 4.24% (n=5) in hospital and 1 participant did not specify. Only 17.5% (n=10) answered that they always had a prescription. Ninety-three participants (78.8%) had not been warned against skin scars. Associated complications included pain, pruritis, erythema at the injection site, ulceration or skin damage, scarring and nausea. Five (4.24%) required medical treatment for a skin ulcer or abscess and 2 participants required surgical treatment.

Discussion: This study shows that the prevalence of scarring after intramuscular diclofenac injections in our study population is 8.47%. In the population studied, 28.2% of participants had the drug administered by an unqualified person, and only 17.54% of the study population always had a prescription. This study shows that 78.81% of the study population had never been warned about skin scars as a potential side effect.

KR-11

Title: ANAEMIA AND ASSOCIATED ANTHROPOMETRIC VARIABLES AMONG WOMEN IN THE RURAL FREE STATE, SOUTH AFRICA

Authors: EM Jordaan, CM Walsh, VL van den Berg, FC van Rooyen

Departments: Nutrition and Dietetics, Biostatistics

Presenter: Marizeth Jordaan

Introduction and aim: Both obesity and anaemia remain global public health problems. Optimal nutritional status, including optimal body composition, remains important in ensuring optimal health of women, particularly women of childbearing age. This study aimed to determine body composition, anaemia prevalence, contraception use and associations between variables in rural women, 25–49 years, in the Free State, South Africa.

Methodology: A cross-sectional descriptive study design was applied in a sample of 134 women. Anthropometric variables were measured according to standard techniques. Weight and height were used to calculate body mass index (BMI), categorised as underweight, normal weight, overweight, obesity class I, II and III. Waist circumference was categorised as normal, at risk and high risk. Body fat percentage, determined with the sum of the four skinfolds (triceps, biceps, subscapular and suprailiac), was categorised as too low, acceptable lower end, acceptable upper end and too high. Blood samples were collected according to standard techniques and analysed for full blood counts, transferrin saturation, ferritin, homocysteine and red cell folate levels. Contraceptive use information was obtained with a questionnaire.

Results: Median body mass index (BMI) (28.7kg/m²), waist circumference (90.8cm) and body fat percentage (38.8%) were among unhealthy ranges. Only 1.5% had iron deficiency and 0.7% suffered from iron deficiency anaemia. Homocysteine levels were high in 7.5% of the women, with 3.8% presenting with low levels of red cell folate. More than half (54.1%) reported that they regularly menstruate and almost three quarters (71.6%) currently or had previously used injectable contraceptives. Significant associations were found between median MCV, MCH levels and transferrin saturation across categories of BMI, waist circumference and body fat percentage. Medians for these blood parameters decreased with increasing adiposity levels.

Conclusion: A predominant pattern of malnutrition, characterised by overweight and obesity, particularly abdominal obesity, and unhealthy body fat percentages were prevalent. Risk for iron deficiency was associated with obesity.

KR -12

Title: THE OUTCOME AND STRICTURE RECURRENCE IN THE TREATMENT OF ANTERIOR URETHRAL STRICTURES: A 5 YEAR FOLLOW-UP

Authors: FM Claassen, SW Wentzel

Departments: Urology

Presenter: Freddie Claassen

Introduction and Aim. The objective of this study was to determine the five-year outcomes of direct vision internal urethrotomy (DVIU), DVIU with urethral dilatation, excision and primary anastomosis (E&H), buccal mucosa onlay (BM), and penile skin island flap (PIF), urethroplasties as first procedures in treating anterior urethral strictures.

Methodology: The files of 155 patients, treated for urethral stricture disease between 2005 and 2009, were studied retrospectively.

Results: The mean age of the patients was 48.7 (range: 18-95) years and the mean stricture length (MSL) was 2.1cm (range: 0.2-8.0cm). DVIU had a success rate of 25.0% (2/8, MSL: 0.7cm for successful-, 0.9cm for unsuccessful-procedures). When DVIU was combined with urethral dilatation, the success rate was 53.2% (42/79, MSL: 1.6cm for successful-, 1.9cm for unsuccessful-procedures). The success rate for DVIU with dilatation is higher than for DVIU alone ($p=0.029$) however, this is not a robust result since the groups are unbalanced. The E&H urethroplasty success rate was 70.7% (29/41, MSL: 1.5cm for successful-, 1.7cm for unsuccessful-procedures). The success rate for ventral BM urethroplasty was 50% (5/10). The MSL was 2.5cm for successful, and 3.4cm for unsuccessful, patients. Circumferential PIF urethroplasty patients had a success rate of 21.4% (3/14). The MSLs were 4.3cm and 4.9cm, for the successful and unsuccessful procedures, respectively. The difference between the ventral BM and PIF outcomes was not statistically significant ($p=0.204$). The mean number of days to stricture recurrence was 408.5 for DVIU, and 422.2 for DVIU with urethral dilatation. Recurrence occurred after a mean of 567.5, 236.0 and 252.2 days in the E&H, ventral BM, and circumferential PIF groups, respectively.

Conclusion: Urethral dilatation appears to improve DVIU outcomes. Follow-up of at least five years is recommended to determine the outcome of urethroplasty procedures.

KR -13

Title: THE TREATMENT OF HYPOSPADIAS AT THE DEPARTMENT OF UROLOGY AT UNIVERSITY OF THE FREE STATE: PATIENT PROFILE , MANAGEMENT AND OUTCOME

Authors: FM Claassen, SW Wentzel, G Joubert

Departments: Urology and Biostatistics

Presenter: Freddie Claassen

Introduction and Aim: The reported success rates for repairing proximal hypospadias were 25% in the 2010 audit at our institution. We decided to use buccal mucosa graft (BMG) in repairing these hypospadias hopefully improving the outcome. Patients with poorly developed glans groove, narrow urethral plate, proximal hypospadias and hypospadias cripple's (multiple previous repair failures) were selected to undergo single or staged repair with BMG. The aim of this study was to determine the outcome of proximal hypospadias repair with BMG.

Methodology: The files of 30 patients who had proximal hypospadias repair with BMG were retrospectively studied.

Results. The median age was 3 years 7 months. Twenty patients underwent staged repair with BMG which included 6 hypospadias cripple patients. The outcome of staged BMG hypospadias repair in patients without previous procedures were 71% (n = 10/14). The success repair rates of hypospadias cripple patients were 66.6% (n = 4/6), complications include glans dehiscence and fistula formation. The Bracka procedure combined with BMG were successful in 40% (n = 2/5) patients with complications reported as meatal stenosis 2/3 and distal break down 1/3. The Konyagi one stage technique combined BMG were successful in 60% (n = 3/5) with distal repair breakdown as reported complications.

Conclusions: The study sample is small but it appears BMG improves the outcome of hypospadias repair.

KR -14

Title: DISINTEGRATING PERINEAL DISEASE IN PATIENTS WITH URETHRAL STRICTURE AND HIV INFECTION: A REVIEW OF 12 CASES

Authors: FM Claassen, SW Wentzel, CF Heyns, G Joubert

Departments: Urology and Biostatistics

Presenter: Freddie Claassen

Introduction and Aim: To define disintegrating perineal disease (DSD) and to determine if the fulminating nature of the condition can be explained by urine and perineal swab microbiology or perineal histology.

Methodology: A retrospective study was performed in 12 male patients with urethral strictures and DPD, which was defined as a chronic, destructive, purulent perineal inflammation with multiple fistulae or sinuses of the perineum, scrotum or penoscrotal area, which continues for more than 6 weeks despite a patent urethra after direct vision internal urethrotomy (DVIU) or urinary diversion by means of suprapubic cystostomy. **Results:** The median patient age was 43.5 years (range 25 to 73). All 12 patients tested positive for human immunodeficiency virus (HIV) infection. The fistulae were perineo-scrotal in six (50%) patients, scrotal in two (17%), peno-scrotal in two (17%) and perineal in two (17%). The organisms cultured from the perineal swabs did not correspond to the organisms cultured from the urine, Histology of the fistula tracts showed non-specific inflammation in eight (67%) patients, tuberculosis (TB) in two (19%), hydradenitis suppurativa in one and squamous cell carcinoma in situ with condylomata accuminata in one patient. DVIU was performed in ten patients and patency of the urethra for more than 6 weeks could be achieved in only three patients. Perineal urethrostomy after failed DVIU was performed in three patients. Ileal conduit urinary diversion and simple cystectomy was performed in three patients, and cure of the DPD was achieved in two of them.

Conclusions: DPD is related to urethral stricture disease in HIV-positive men with secondary infection as the initiating cause, but no predominant micro-organism responsible for the condition. We recommend perineal skin biopsies in men with DPD to exclude treatable skin conditions such as TB. Simple cystectomy with urinary diversion may be the only solution to this debilitating disease.

KR -15

Title: HOW ACCURATE IS ULTRASOUND OF THE OPTIC NERVE SHEATH DIAMETER PERFORMED BY INEXPERIENCED OPERATORS TO EXCLUDE RAISED INTRACRANIAL PRESSURE?

Authors: GJ du Toit, D Hurter, M Nel

Departments: Clinical Imaging Sciences, Department of Radiology Kimberley Hospital, Department of Biostatistics

Presenter: Reghard du Toit

Background: It has been well documented that ultrasound measurement of the optic nerve sheath diameter performed by an experienced operator shows good correlation with raised intracranial pressure, irrespective of the cause.

Objective: To establish the accuracy of this technique performed by inexperienced operators.

Method: A prospective analytical cross-sectional study was conducted. All patients > or = 18 years of age who presented at our medical casualty and emergency departments with suspected meningitis were enrolled in the study. All patients were evaluated with the use of optic nerve sheath diameter ultrasound with or without computed tomography brain scan prior to lumbar puncture. Lumbar puncture opening pressure measurements were compared with the ultrasound measurements.

Results: A total of 73 patients were enrolled in the study, of whom 14 had raised intracranial pressure. The study had a sensitivity of 50% (95% confidence interval (CI) 26.8%; – 73.2%) and specificity of 89.8% (95% CI 79.5%; – 95.3%) with a positive predictive value of 54.8% (95% CI 29.1%; – 76.8%) and negative predictive value of 88.3% (95% CI 77.8%; – 94.2%). The likelihood ratio of a positive test was 4.92 (95% CI 1.95; – 11.89) and that of a negative test 0.56 (95% CI 0.29; – 0.83). Cohen's kappa value was 0.41 which indicates a moderate agreement. The receiver operating characteristic (ROC) curve had an area under the curve (AUC) of 0.73 (95% CI 0.51; – 0.95).

Conclusion: Ultrasound measurement of the optic nerve sheath diameter can be used to exclude raised intracranial pressure, even in the hands of inexperienced operators.

KR -16

Title: A RETROSPECTIVE STUDY OF 532 PATIENTS DIAGNOSED WITH OESOPHAGEAL CANCER IN CENTRAL SOUTH AFRICA

Authors: GN Lai, A Sherriff

Departments: Oncology

Presenter: Gillian Lai

Introduction and Aim: To describe the characteristics of patients with Oesophageal Cancer (OC) in Central South Africa; looking at associations with gender, race, smoking status, HIV status, histology and survival.

Methodology: a retrospective review of case files of patients presenting to our unit from 2002 to 2008. 532 patients with histologically proven squamous cell carcinoma (SqCCa) or adenocarcinoma (AdenoCa) of the oesophagus were evaluated.

Results: The majority had SqCCa (502(96.4%) vs. 19(3.6%)) with adeno ca. Patients were predominantly male (3:1). 402(89.5%) were black patients, 34(7.6%) coloured patients and 13(2.9%) white patients. 98% of black patients had SqCCa vs 62% of white patients (p<0.0001). Histology and smoking status was available for 505 patients (95%). Patients with SqCCa were more likely to be smokers than patients with adenoCa (89.7% vs. 73.7%, p = 0.045). 20/336 patients were HIV positive. There was no statistical difference between patients with SqCCa and adenoCa respectively, regarding their HIV status (6.2% vs. 0%, p = 0.64). Of 503 patients, 173(34%) had distal lesions, 278(55%) mid-oesophageal and 52 (10%) proximal lesions. Many patients were lost to follow-up. Time to loss-to-follow-up was taken as a surrogate for survival. Follow up data was available for 323 patients. The median time for follow-up was 2 months. Data on radiotherapy was available in 313 patients. Radiotherapy was given in 201(64.2%) patients. The median follow-up time for patients receiving radiotherapy was 3 months vs. 1 month for patients not receiving radiotherapy (p<0.0001).

Conclusion: The majority of patients with OC had SqCCa and were male. Median age at presentation was 60 years. White patients were more likely to have adenoCa and black patients more likely to have SqCCa. The majority of both histological groups were smokers; the likelihood was higher amongst patients with SqCCa. HIV positivity was uncommon and not different between histological groups. Radiotherapy was associated with prolonged median follow-up time; suggesting a survival benefit.

KR -17

Title: LIFESTYLE AND ENVIRONMENTAL RISK FACTORS ASSOCIATED WITH OVERWEIGHT/OBESITY IN WHITE WOMEN FROM THE LEJWELEPUTSWA DISTRICT, SOUTH AFRICA

Authors: I Leyll, VL van den Berg, J Raubenheimer

Departments: Nutrition and Dietetics; Biostatistics

Presenter: Ilze Leyll

Introduction and aim: No study has yet assessed the risk factors for overweight/obesity among rural white women in South Africa. This study profiles the white women of the Lejweleputswa district, Free State, regarding known lifestyle and environmental risk factors for overweight/obesity.

Methodology: A descriptive study was conducted on 142 women recruited at the NAMPO Harvest Day Fair in 2014. Body mass index (BMI), body adiposity index (BAI), waist circumference (WC), waist-hip-ratio (WHR), and waist-to-height ratio (WHtR), dietary intakes, physical activity (PA), TV watching, smoking, alcohol intake, sleeping patterns, sunlight exposure, hobbies, religious service attendance, social functioning, emotional eating, depression, and addictive eating behaviour were assessed by means of a self-reported questionnaire incorporating validated measuring instruments.

Results: Overall 66.9% of the study population were overweight/obese, and 82.5% were at risk for metabolic complications based on WC. Below minimum recommended intakes were reported for starches (95.1%), vegetables (83.4%), fruit (50.7%), and fat (96.5%); and above maximum recommended intakes for meat (31.2%) and added sugar (34.3%). Sugar intake was inversely associated with BMI, BAI and WHR; while BAI was inversely associated with meat and added fat consumption. PAL was inversely associated with BAI and WHR and 43.6% had low PAL. BMI, WC, WHR and WHtR were significantly higher in participants who watched >2h TV/day than those who watched less. Around 9% of participants smoked, 66.6% did not use alcohol; 31.9% reported sensible alcohol consumption. 23.2% slept <6 hrs/night; 77.5% received excessive sunlight exposure; 77.5% practiced a hobby (24.8% while snacking); 82.4% attended a religious service at =1x/month; 59.2% suffered from various degrees of depression. No associations were found between these measurements and anthropometry. BMI, WC, WHR and WHtR with overall addictive eating behaviour scores.

Conclusion: This study identifies very high levels of overweight/obesity, inactivity, unhealthy eating habits and depression among white rural women in the study area which warrants intervention.

KR -18

Title: MIRROR SYMMETRY OF HIGHER ORDER ABERRATIONS BETWEEN RIGHT AND LEFT EYES

Authors: M Oberholzer, WDH Gillan, A Rubin

Departments: Optometry UFS, Optometry UJ

Presenter: Marsha Oberholzer

Introduction: There is evidence that certain measures of visual function show some type of relationship between right and left eyes in the same individual. Similarly, particular ocular maladies may be related, or be symmetric, in the right and left eyes of the same person. There is also evidence to suggest that certain relationships do not exist between eyes in an individual. For example, diseases such as glaucoma are often asymmetric in their progression in the two eyes of an afflicted individual. Inter-ocular mirror symmetry between right and left eyes, when considering ocular wavefront aberrations (WAs), has been shown to exist by some authors. This study investigates whether mirror symmetry of high order aberrations (HOAs) exists between the right and left eyes in a cohort of South African subjects.

Method: Third to 5th order Zernike coefficients (HOAs) were measured on both eyes of 66 subjects (132 eyes) using a Zywave aberrometer. A total of 15 Zernike coefficients for each eye were obtained. Mirror symmetry was investigated using correlation coefficients between the various measurements obtained from each eye.

Results: Pearson product-moment correlation coefficients provide evidence that the majority of the 15 Zernike coefficients suggest the presence of mirror symmetry between right and left eyes of the 66 subjects. Examples of individual scatter plots comparing right and left eyes are presented.

Conclusion: The results of this study suggest that mirror symmetry exists in the HOAs obtained from the 132 eyes measured and thus care should be exercised when combining eyes of individuals for analysis.

KR -19

Title: EXERCISE PRESCRIPTION PART 1: KNOWLEDGE, PRACTICE AND ATTITUDES AMONG SOUTH AFRICAN DOCTORS

Authors: M Schoeman, M Roos, L Holtzhausen, G Joubert

Departments: Sport and Exercise Medicine; Biostatistics

Presenter: Marlene Schoeman

Introduction and aim: Physical inactivity is fourth on this list of leading causes of deaths worldwide. South Africans have low physical activity (PA) levels which increase the morbidity and mortality associated with various chronic diseases. GPs play a key role in motivating a large proportion of the sedentary population to become physically active. Very little is known about the exercise prescription practices of South African GPs. This study aimed to determine the practices, attitudes toward and knowledge on exercise prescription among GPs in SA and identify possible barriers why they do not prescribe exercise (ECUFS 190/2010).

Methods: A self-administered, anonymous electronic questionnaire was circulated to a database of GPs via email on three separate occasions, two weeks apart and was completed by a total of 349 GPs. Exercise prescription practices, attitudes towards exercise prescription and the importance thereof as preventative modality for chronic diseases were assessed. Knowledge on benefits, risk factors, contraindications and complications of exercise prescriptions were also assessed.

Results: Substantially higher prescription rates were reported compared to international literature. A minority (18.0%) of the participants felt that exercise prescription will be too time consuming, while almost half (46.0%) of the non-prescribing doctors reported a lack of confidence in their knowledge to be able to prescribe exercise. Approximately 98% of the GPs believed that it should be part of their practice to prescribe exercise to their patients, despite the fact that their knowledge regarding recommendations for physical activity and the formulation of an exercise prescription was poor.

Conclusion: Although GPs reported a high incidence of exercise prescription, insufficient knowledge about exercise prescription and appropriate lifestyle modifications were noticed. Barriers to exercise prescription differ from international literature and should be investigated further. A lack in confidence and knowledge to enable safe and effective exercise prescription highlights a need to rethink the undergraduate medical curricula.

KR -20

Title: EXERCISE PRESCRIPTION PART 2: KNOWLEDGE, ATTITUDES AND SELF-PERCEIVED COMPETENCE TOWARDS EXERCISE PRESCRIPTION AMONG FINAL YEAR MEDICAL STUDENTS

Authors: LJ Holtzhausen, J Myburgh, GJ van Zyl

Departments: Sport and Exercise Medicine; Dean, Faculty of Health Sciences

Presenter: Louis Holtzhausen

Introduction and aim: Physical activity (PA) promotion is an integral part of preventative health care and reducing morbidity and premature mortality. Many barriers exist in implementing exercise prescription into the health care paradigm, possibly including inadequate undergraduate medical training. The aim of the study was to investigate the knowledge, attitudes, and self-perceived competence towards exercise prescription and exercise habits of final year medical students from two South African universities (ECUFS 06/2012).

Methods: A descriptive, cross-sectional study was conducted by means of an anonymous, self-reported questionnaire. Descriptive statistics was used, and correlations calculated at 95% confidence intervals.

Results: Only 16.9% of South African medical students obtain knowledge regarding exercise prescription from their medical curriculum (24.7% from University A and 9.6% from University B). Only 62% of students have satisfactory knowledge of fundamental principles of exercise prescription. The vast majority (97.9%) of University B students do not know formal guidelines for exercise prescription and 35.1% of them are unlikely to prescribe exercise ($p=0.0001$), compared to 22.5% from University A. University B students feel more competent in prescribing exercise correctly than University A (23.6% vs. 15.2%). Formal guidelines for exercise prescription are regarded as highly important by 57.8% of students, but only 19.3% feel highly competent in using it to prescribe exercise. A correlation exists between students' health habits and attitudes toward preventive counselling.

Conclusions: The knowledge of South African final year medical students on exercise prescription is inadequate, rendering them unlikely to prescribe exercise. Minimal curricular input on exercise prescription at one university made a significant difference in knowledge and attitudes. Review of curricular content is recommended to include principles of exercise prescription. The promotion of physical activity to medical students during their training years is also recommended.

KR-21

Title: THE USE OF TRADITIONAL MEDICINE AND RITUALS IN PROFESSIONAL SOCCER IN SOUTH AFRICA

Authors: LC Mulungwa, L Holtzhausen
Departments: Sport and Exercise Medicine
Presenter: Crosby Mulungwa

Introduction and aim: Traditional medicine(TM) and Traditional rituals (TR) are anecdotally widely used in soccer in South Africa. There is no scientific information on content of substances, efficacy, possible adverse effects, or anti-doping status of TM and TR in sport in South Africa. The aim of the study was to investigate the types, indications and beliefs regarding TM and TR in South African professional soccer as baseline data for further investigation (ECUFS 56/2012).

Methodology: A descriptive study was conducted, with qualitative and quantitative components. The study population was selected using purposive sampling because of the rarity of people willing to divulge information on this topic. Five former South African professional soccer players were interviewed using a semi-structured interview guide. Descriptive data was extracted, categorised and tabulated.

Results: The use of TM and TR was confirmed among South African professional soccer players. A list of TM and TR was identified. The main indications for TM and TR use are injury and illness management, performance enhancement and protection. The perceived efficacies of TM versus western medicine and of TM or TR for team success are equivocal. Secrecy about the use of TM and TR complicated research on this topic.

Conclusion: The common use, types, their indications and beliefs about TM and TR in South African professional soccer were recorded for the first time. An attempt was made to contextualise TM and TR use in soccer. There is insufficient scientific evidence or knowledge on efficacy, safety and legality of TM and TR in South Africa for healthcare workers to recommend it to athletes. Further scientific and socio-cultural investigation is strongly recommended.

KR -22

Title: REHABILITATION AND RETURN TO PLAY AFTER ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION: A SYSTEMATIC REVIEW AND DEVELOPMENT OF A CONCEPTUAL REHABILITATION

Authors: AC Vlok, L Holtzhausen, M Shoeman
Departments: : Exercise and Sports Sciences; Sport and Exercise Medicine
Presenter: Arnold Vlok

Introduction and aim: There is a high risk for subsequent injury after Anterior Cruciate Ligament Reconstruction (ACLR) when post-operative rehabilitation is not managed according to physiological principles. The primary aims of this study was 1) to conduct a systematic literature review on the influence of the physiological healing process of the graft on the physical rehabilitation process leading up to return to sport (RTS) following ACLR, and 2) to develop a conceptual framework for rehabilitation and RTS (ECUFS 15/2013).

Methodology: A systematic review was conducted according to the PRISMA guidelines. Randomised controlled trials (RCTs), prospective cohort (PC), cross sectional (CS) studies and descriptive epidemiological studies from 1985 to 2013 were reviewed. Electronic databases which were searched included MEDLINE, Academic Search Complete, Pubmed and SPORTDiscus. Twenty eight articles were selected for data extraction, which were categorised in three main categories, namely graft healing (5 articles), rehabilitation protocols (15 articles) and return to sport criteria (8 articles).

Results: There is a dearth of literature aligning the physiological healing process after ACLR and the physical rehabilitation thereof. Major differences occur in methodology and in rehabilitation protocols in the literature. Physiological healing of the autograft and quadriceps recruitment deficits take up to 2 years for full restoration. Rehabilitation interventions after ACLR include strength, neuromuscular and functional training according to the physiological responses of the ACL graft and neuromuscular adaptation. Current trends in rehabilitation planning and intended outcomes follow these principles. Weakness or asymmetry of the injured versus uninjured side often persists after RTS.

Conclusion: A 0-3 months/3-6 months/6-12months/RTS conceptual framework for rehabilitation of ACLR was developed from the literature, considering the interdependence of the healing process of the ACL graft and neuromuscular, strength and functional training. ACLR patients need to be managed within a time based as well as individualized criterion based rehabilitation progression model.

KR -23

Title: CLINICAL, HAEMATOLOGICAL AND BIOCHEMICAL CHARACTERISTICS OF SOUTH AFRICAN GOLD- MINERS WHO PRESENT WITH EXERCISE-ASSOCIATED MUSCLE CRAMPS

Authors: M Schoeman, R de Wet, L Holtzhausen, G Joubert

Departments: Sport and Exercise Medicine; Biostatistics

Presenter: Marlene Schoeman

Introduction and aim: Consensus on the pathogenesis of exercise associated muscle cramps (EAMC) has not been reached. Two main schools of thought exist, either proposing that (1) dehydration and electrolyte depletion or (2) altered neuromuscular control with muscle fatigue cause EAMC. Several factors within these hypotheses are conflicting and unexplained, possibly because of a lack of good data, making it difficult to inform evidenced based practices for the prevention of EAMC. Underground miners are especially prone to muscle cramps, yet no data were available to gain insight into the pathogenesis of EAMC in this population group. The aims of this study were to describe environmental, biochemical and haematological variables in gold miners with EAMC and compare it with a control group of miners without EAMC (ECUFS 198/2011). The study consisted of two parts (retrospective and prospective) which required detailed methodological considerations and yielded extensive results and conclusions. Therefore, this study will be presented in two parts.

Methodology: The retrospective descriptive study involved underground mine workers who presented with EAMC over 18 months in a SA gold mine (CRA group). The prospective study consisted of a collection of biological data and blood profiles before (CONPRE) and after (CONPOST) 8 hour shifts on a volunteer group of underground mine workers not presenting with EAMC to generate normative data for underground mine workers and comparative data for the CRA group. Participants were classified into four groups based on the functional nature of the specific job descriptions comprising physical stresses such as vibration, cramped body positions for prolonged periods, high physical exertion and distance walking. Despite the large number of CRA participants, data were generally non-parametric. Results and discussions are categorised under hydration, electrolyte disturbances, muscle damage and inflammation to align with aspects from the two schools of thought regarding EAMC.

KR -24

Title: CLINICAL, HAEMATOLOGICAL AND BIOCHEMICAL CHARACTERISTICS OF SOUTH AFRICAN GOLD- MINERS WHO PRESENT WITH EXERCISE-ASSOCIATED MUSCLE CRAMPS

Authors: L Holtzhausen, R de Wet, M Schoeman, G Joubert

Departments: Sport and Exercise Medicine; Biostatistics

Presenter: Louis Holtzhausen

Introduction and aim: The pathogenesis of exercise-associated muscle cramps (EAMC) in mine-workers and other exercising populations is not clear. The aims of the study were to describe clinical, biochemical and haematological variables in gold miners with EAMC (ECUFS 198/2011).

Methodology: A retrospective descriptive study of the data of underground mine workers who presented with EAMC over 18 months in a South African gold mine (CRA group) was compared with a control group of similar workers without EAMC from which data were collected before (CONPRE) and after (CONPOST) 8 hour shifts.

Results: There were 450 cases of EAMC in a population of 18430 mine workers over an 18-month period (2.5%). Markers which were significantly different in the CRA group compared to the CONpost group were signs of dehydration (increased haematocrit and haemoglobin), muscle fatigue (elevated CK), muscle damage (elevated myoglobin), inflammation (elevated total white cell and lymphocyte count), elevated urea and creatinine, increased body temperature and lower fluid intake. The control group were well- to slightly over hydrated, with progressive muscle injury (increased CK levels, but no increase in myoglobin) and well maintained kidney function during a working week.

Conclusion: EAMC is associated with elevated inflammatory markers, dehydration and haemoconcentration, reduced absolute serum sodium and chloride levels, elevated creatinine and protein levels, and muscle damage (myoglobin). This study is the first to present a comprehensive profile of a population with EAMC, compared to a control group. The interpretation of these results should be done cautiously. Further investigation into the pathogenesis of EAMC will be guided by these results. Instead of compartmentalised theories, EAMC seems to occur in a collective set of systemic and local contributing factors.

KR-25

Title: REPORTED CLINICAL MANIFESTATIONS ASSOCIATED WITH HIV STATUS IN PEOPLE FROM RURAL AND URBAN COMMUNITIES IN THE FREE STATE, SOUTH AFRICA

Authors: M Pienaar, FC van Rooyen, CM Walsh3

Departments: Department of Nutrition and Dietetics, Biostatistics

Presenter: Michelle Pienaar

Introduction and Aim: HIV-infection impacts heavily on overall health status. The objective of this study was to determine significant independent clinical manifestations associated with HIV status in rural and urban communities in the Assuring Health for All (AHA) study.

Methodology: The AHA study was undertaken in rural Trompsburg, Philippolis and Springfontein and urban Mangaung. Adults between 25-64 years were eligible to participate. A questionnaire related to tobacco and alcohol consumption patterns; medical history; and medication use was completed in a structured interview with each participant. All blood were analysed in an accredited laboratory using standard techniques and controls.

Results: Of the 567 rural participants, 97 (17.1%) were HIV-infected. Of the 424 urban participants, 172 (40.6%) were HIV-infected. Twenty five percent of HIV-infected urban respondents were using ART compared to only 4.1% HIV-infected respondents in rural areas.

More than half of HIV-infected rural participants smoked and more than 40% used alcohol. In rural areas, HIV-infection was positively associated with losing weight involuntarily (>3kg in the past 6 months) (odds ratio 1.86, 95% CI 1.08; 3.20); ever being diagnosed with TB (odds ratio 2.50, 95% CI 1.18; 5.23) and being on TB treatment (odds ratio 3.29, 95% CI 1.00; 10.80). In the urban sample, HIV-infection was positively associated with having diarrhoea for at least 3 days in the past 6 months (odds ratio 2.04, 95% CI 1.23; 3.41) and having ever been diagnosed with TB (odds ratio 2.49, 95% CI 1.37; 4.53).

Conclusion: Of all the symptoms experienced during the last 6 months, involuntary weight loss (rural) and diarrhoea (urban) were most likely to predict the presence of HIV. In addition, present or past diagnosis with TB increased the odds of being HIV-infected. Information related to diarrhoea, weight loss and past or present TB is easy to obtain from patients and should prompt healthcare workers to screen for HIV.

KR-26

Title: The histological underestimation of a 9-gauge stereotactic vacuum assisted breast biopsy system compared with surgical excision at a tertiary hospital in South Africa

Authors: M Pieters, G Joubert, S Otto

Departments: Department of Clinical Imaging Sciences, Department of Biostatistics

Presenter: M Pieters

Introduction and aim: Breast cancer is a major cause of morbidity and mortality worldwide. Certain lesions encountered on mammography require histological assessment of biopsy samples in order to clarify benign versus malignant disease. Stereotactic vacuum assisted breast biopsy (SVAB) is a useful technique especially for non-palpable microcalcific lesions and was introduced at our institution in 2011. The aim of this study was to determine whether the histological underestimation from 9-gauge stereotactic vacuum assisted breast biopsies, performed at our institution is within acceptable limits.

Methodology: : In this cross-sectional study, 9-gauge stereotactic biopsy histology results of 158 lesions (from 153 patients) were analyzed and histological findings were compared to open surgical biopsy histology results (54 patients) in order to determine histological underestimation (upgrade rates).

Results: One of eight cases of ductal carcinoma in situ (DCIS) was underestimated yielding a DCIS underestimation rate of 12,5%. The DCIS underestimation obtained from this study for our institution is on par with other author's findings and is thus within acceptable limits. Atypical ductal hyperplasia (ADH) underestimation could not be reliably obtained with the small study population.

Conclusion: The histological underestimation of stereotactic vacuum assisted breast biopsy using a 9-gauge needle system at our institution falls within acceptable limits with a DCIS underestimation of 12.5%.

KR-27

Title: A CLINICAL AND GENETIC ANALYSIS OF HEREDITARY HAEMORRHAGIC TELANGIECTASIA IN THE FREE STATE AND NORTHERN CAPE

Authors: MJ Coetzee, G Marx, R Seedat, AD Jafta

Departments: Haematology & Cell Biology; Otorhinolaryngology

Presenter: Marius Coetzee

Introduction and aim: Hereditary haemorrhagic telangiectasia (HHT) is an autosomal dominant vascular disorder that causes substantial morbidity and mortality. HHT in people of black African descent is a rarity. Clinical diagnosis of HHT is based on the Curaçao criteria, including epistaxis, and multiple telangiectases on skin and nose and internal organs. The three main causative genes are: ENG, ACVRL1, and SMAD4 BMP9. To date only two papers report mutations in HHT black adult patients. The aim of the study is to document the pedigree, phenotype, and genotype of patients and their families in central South Africa.

Methodology: This was a descriptive study on a fifteen members of a family with HHT in Free State and the Northern Cape. Diagnosis of HHT was based on the history and clinical examination according to Curaçao criteria. The pedigree was set up using Genopro software. Genotyping was performed by sequencing the ENG gene.

Results: Clinical screening identified that 11 individuals suffering from HHT. All patients had telangiectasia involving the nasal and oral mucosa. Two had proven internal arteriovenous malformations. The patients had a median haemoglobin of 12.6 g dL (range 7.1-15.3) and median serum ferritin of 18 µg/L (range 4-96). Most of the patients received iron supplements constantly. Results from the ENG gene exon 6 sequence genotyping only revealed silent single nucleotide polymorphisms (SNPs) throughout the family with no association to HHT. This result is noteworthy, since several insertion and deletion mutations have been identified in HHT patients in the ENG exon 6 regions globally.

Conclusion: The results showed that mutations of the ENG gene are not involved in causing HHT in the study population and sequencing of additional gene regions is required. We have also identified three extended families in central South Africa whom we are investigating at present.

KR-28

Title: THE FOOD ENVIRONMENT AND DIETARY PRACTICES OF STUDENTS ON A FINANCIAL ASSISTANCE PROGRAMME AT THE UNIVERSITY OF THE FREE STATE

Authors: NML Meko, M Jordaan

Departments: Nutrition & Dietetics

Presenter: Lucia Meko

Introduction and aim: Enrolment at institutions of higher learning is associated not only with poor eating habits, but food insecurity as well. The No Student Hungry (NSH) Campaign provides financially challenged students with financial assistance to purchase food at specified food outlets on the University of the Free State (UFS) campuses. This study aimed to determine the food environment and for students registered with the campaign and the students' dietary practices.

Methodology: An observational descriptive study was conducted on the main campus of the UFS on fifty students registered with the NSH campaign during 2013. Six food outlets providing food for these students also formed part of the study. A self-administered structured questionnaire was completed by the students to determine their dietary practices (including dietary diversity, purchasing and cooking practices and food security). All food items sold at the specified outlets were recorded by the researchers using a store audit form.

Results: Most students (94%) on the campaign had a medium to high dietary diversity score. Half the students (51%) indicated that the money they received as part of the campaign was enough and 49% of the students shared cooking duties. Starchy food items were consumed by 73% of the students with only 25% reporting eating fruit. The food outlets allocated to the NSH campaign recipients were two take aways, three cafeteria and one tuckshop. Of the food items sold in these food outlets only 1% could be classified as dairy. Sugar-containing foods, starches and protein foods made up 29.2%, 19.3% and 18.6%, respectively of the food items sold.

Conclusion: The students' daily intake tended to reflect the proportion of the food groups available at the food stores. When food insecurity is addressed through various interventions, the availability of healthy, nutritious foods should also be ensured.

KR-29

Title: HELICOBACTER PYLORI AS AN OCCUPATIONAL HAZARD IN THE ENDOSCOPY ROOM

Authors: OC Buchel, T du Toit, SJA Smit

Departments: General Surgery

Presenter: Otto Buchel

Introduction/Aim: Whether health care workers on upper gastro-intestinal endoscopy teams are at risk for Helicobacter pylori (H.pylori) infection remains controversial. Studies in this regard have not been conducted in Africa. The need for this study emanated from three variables i.e.

*Is the high prevalence of H. pylori in Africa resulting in an increased risk of occupational transmission of H. pylori?

*The lack of video instrumentation in developing countries. Redundant fiber-optic instruments (the old "eye scope") are still being used. This instrument brings the endoscopist into close contact with the patient's secretions.

*The third variable is the unique composition of our local society: very high as well as very low socio-economic societies co-exist.

Methods: We performed a cross-sectional study to determine the prevalence of H. pylori infection amongst endoscopy personnel versus a control group of other health care workers

Participants were divided into three groups comprising of non-endoscopy users, endoscopy users performing between 1 and 10 gastroscopies per week and endoscopy users performing more than 10 gastroscopies per week.

Results: 92 Participants were included in the study. In the control group 32 (55.2%) tested positive for H. pylori. In the combined endoscopy groups (34 in total), 20 participants (58.8%) tested seropositive for H. Pylori. These differences were not statistically significant. In the endoscopy groups the seropositive rate was highest amongst those more frequently involved with endoscopies i.e. 55.2% in the control (non-exposure) group were positive compared to 69.6% in the more than 10 endoscopies per week group, but the difference was not statistically significant (p-value of 0.1778%).

Conclusion: Both the study and the control groups displayed a H. pylori infection rate similar to the national prevalence rate which is estimated at 51-71%. We were unable to confirm that endoscopy as a risk factor for contracting H. Pylori.

KR -30

Title: KNOWN DIETARY RISK FACTORS FOR IRON DEFICIENCY AMONG MOTHERS AND THEIR YOUNG CHILDREN IN THE NORTHERN REGION OF GHANA

Authors: VL van den Berg, BAZ Abu, V Louw, J Raubenheimer

Departments: Nutrition and Dietetics, Internal Medicine and Biostatistics

Presenter: Louise van den Berg

Introduction and aim: Globally, iron deficiency (ID) anemia is a major cause of mortality. This study assessed the prevalence of dietary risk factors for ID in Northern Ghana where around 60% and 80% of women of childbearing age and young children, respectively, suffer from anemia.

Methodology: A descriptive study included 161 mothers and their 175 children, 6-59 months, from two randomly selected communities in Northern Ghana. BMI and WHO Z-scores were assessed for mothers and children, respectively. Socio-demographics, household food security (CHIP index), daily dietary intakes (3x24-hour recalls) and food frequencies were recorded during structured interviews with the mothers.

Results: Most mothers (33.0 ± 8.3 years) were married (97.5%); uneducated (91.9%); engaged in subsistence farming (100%); lived in huts (100%); and had electricity (79.2%). Only 36.9% had piped water. Despite high energy intakes, 10% of mothers were underweight and 30.4% of the children were moderately, and 16.7% severely stunted. Overall, 43.8% of households risked food insecurity and 6.9% experienced chronic hunger, mainly due to annual food shortages (11.5 ± 6.7 weeks/year). The children's anthropometry were significantly associated with food security (p<0.0001). Most children were exclusively breastfed for 4-6 months (80%) and then weaned (82.3%) onto the family diet of unrefined, unfortified maize meal. Green leafy vegetables, butternut, tomatoes, onions and legumes, were consumed when in season; meat on occasion, and tea frequently. Mean fibre intakes were high (mothers: 47.8 ± 19.0 g/day; children: 19.8 ± 13.9 g/day). The probability of inadequate iron intake (at 5% bioavailability) was 80.3% for mothers and 67.3% for children. Inadequate intakes of protein (mothers: 30.6%; children: 17.7%), vitamin A (mothers: 9.9%; children: 36.6%), folate (mothers: 46.6%; children: 26.2%) and vitamin B12 (mothers: 98.8%; children: 98.2%) were recorded.

Conclusion: Periods of food shortage, seasonality of vegetables, low intakes of meat, and high intakes of fibre, phytates and tea, may exacerbate ID risk in Northern Ghana.

KR -31

Title: BODY ADIPOSITY A POOR PREDICTOR OF BLOOD GLUCOSE CONTROL IN BLACK FEMALES WITH TYPE 2 DIABETES MELLITUS ATTENDING DIABETES CLINICS IN BLOEMFONTEIN

Authors: R Lategan, I van Niekerk, G Marx, J Raubenheimer

Departments: Nutrition and Dietetics, Haematology and Cell Biology, Biostatistics

Presenter: Ronette Lategan

Introduction and Aim: Poor glycaemic control in individuals with type 2 diabetes mellitus (T2DM) has been associated with increased microvascular and macro vascular complications. Despite the benefits of maintaining optimal blood glucose control, poor control remains a problem in a substantial number of individuals with diabetes, increasing the risk for long-term complications. This study describes blood glucose control and investigates body adiposity as a predictor of blood glucose control in black females with type 2 diabetes mellitus (T2DM) attending diabetes clinics in Bloemfontein, South Africa.

Methodology: A descriptive study, including a convenience sample of 72 females between 20 and 60 years of age, attending diabetes clinics at Pelonomi Tertiary Hospital and Universitas Academic Hospital in Bloemfontein, were performed. Glycosylated haemoglobin (HbA1c) values were captured from clinic records. Weight and height were measured to calculate body mass index (BMI) and dual-energy X-ray absorptiometry (DXA) to measure body adiposity.

Results: The mean HbA1c was 8.4% (SD \pm 2.2), with a minimum of 5.3% and a maximum of 13.8%. The mean BMI of the study population was 36.4 kg/m² \pm 7.6 (SD). No significant correlation was found between blood glucose control and BMI (r -0.00591; p=0.9607), or blood glucose control and body fat percentage (r -0.06648; p=0.5790).

Conclusion: Blood glucose control in this black female population with T2DM was poor. BMI and body adiposity were not associated with blood glucose control as measured by HbA1c, and blood glucose control was not associated with age in this population. Poor blood glucose control as reflected by high HbA1c levels put this population with T2DM at a high risk for developing complications. Dietary counselling and optimal management are essential to improve blood glucose control and prevent complications and early mortality.

KR -32

Title: THE EFFECT OF HIV INFECTION ON DISEASE AGGRESSIVENESS IN PATIENTS WITH JUVENILE-ONSET RECURRENT RESPIRATORY PAPILLOMATOSIS

Authors: RY Seedat, FJ Burt, G Joubert

Departments: Otorhinolaryngology, Medical Microbiology and Virology, Biostatistics

Presenter: Riaz Seedat

Introduction and aim: Recurrent respiratory papillomatosis (RRP) is a condition caused by human papillomavirus (HPV), usually HPV types 6 and 11, with the larynx being the most common site of involvement. HPV11 disease is generally more aggressive than HPV6 disease. The prevalence and incidence of HPV infection and HPV-associated diseases are greater in HIV-positive individuals when compared to HIV-negative individuals. There are no studies on the effect of HIV infection on disease severity in patients with juvenile-onset RRP (JORRP). The aim of this study was to determine if there was any association between HIV infection and the severity of disease in patients with JORRP.

Methods: The records of patients with JORRP treated at Universitas Hospital between 1 January 2006 and 31 December 2012 whose HIV status was known were reviewed. The following markers of disease aggressiveness were compared: HPV type, average Derkay score, extra-laryngeal involvement, need for tracheostomy, age at diagnosis, total procedures, and average procedures per year.

Results: The HIV status of 57 of 70 patients was known; 6 were HIV positive and 51 were HIV negative. Three of the HIV positive patients were on antiretroviral treatment. HPV typing had been performed in five of the HIV positive patients, all of whom had HPV6 disease, while in the 46 HIV negative patients in whom HPV typing had been performed, 24 (52.2%) had HPV6 disease and 22 (47.8%) HPV11 disease. There was no significant difference in any of the markers of disease aggressive between the patients with HPV6 disease who were HIV negative and those who were HIV positive.

Conclusion: HIV infection does not result in more aggressive disease in patients with JORRP, but this may be due to treatment with ARVs. However, the number of HIV negative patients was very small, which makes comparison difficult.

KR -33

Title: TEMPORAL EVALUATION OF COMPUTED TOMOGRAPHIC SCANS AT A LEVEL I TRAUMA DEPARTMENT IN A CENTRAL SOUTH AFRICAN HOSPITAL

Authors: TN Tiemesmann, J Raubenheimer, C de Vries

Departments: Clinical Imaging Sciences, Biostatistics

Presenter: Tony Tiemesmann

Background: Time is a precious commodity, especially in the trauma setting, which requires continuous evaluation to ensure streamlined service delivery, quality patient care and employee efficiency.

Objectives: This study dissects our multi-detector computed tomography (MDCT) scan process as part of the imaging turnaround time of the trauma patient. It is intended to serve as a baseline for our institution, to offer a comparison to international institutions and to improve service delivery.

Method: Relevant categorical data were collected from the trauma patient register and radiological information system (RIS) from 1 February 2013 to 31 January 2014.

A population of 1107 trauma patients who received a MDCT scan was included in this study. Temporal data were analysed as a continuum with reference to triage priority, time of day, type of CT scan and admission status.

Results: The median trauma arrival to MDCT scan time (TTS) and reporting turnaround time (RTAT) of 69 (39–126) and 86 (53–146) minutes, respectively. TTS was subdivided into the time the patient arrived at trauma to the radiology referral (TTRef) and submission of the radiology request to the arrival at the MDCT (RefTS). TTRef was statistically significantly longer than RefTS ($p < 0.0001$). RTAT was subdivided into the arrival at the MDCT to the start of the radiology report (STR) and time taken to complete the report (RT). STR was statistically significantly longer than RT ($p < 0.0001$).

Conclusion: Our time to scan (TTS) is comparable, but unfortunately the report turnaround time (RTAT) lags behind the findings of some first-world institutions.

KR -34

Title: BLOOD GLUCOSE CONTROL AT THE ANNUAL CHILDREN'S DIABETES CAMP

Authors: U Hallbauer, R Lombard, R Lategan, G Joubert

Departments: Department of Paediatrics & Child Health, Nutrition & Dietetics, Biostatistics

Presenter: Ute Hallbauer

Introduction and aim: Camps for children with diabetes are presented to provide an educational program in a medically safe environment to encourage self-management. The aim of the study was to record and describe blood glucose control, carbohydrate intake and physical activity for the duration of the camp.

Methodology: A descriptive study with cross-sectional analytic components was undertaken during May 2015. Twenty children who attended the weekend camp were included. Blood glucose and ketones and HbA1c were measured using point-of-care meters. Carbohydrate intake was calculated (grams). Intensity of physical activity was recorded. Blood glucose was measured before meals (breakfast, lunch, supper), at bedtime and 02h00.

Results: HbA1c was $\leq 9.5\%$ in 4/20(20%) children, $>9.5-13.9\%$ in 13/20(65%) and $\geq 14\%$ in 3/20(15%) children, with a median of 12.2%. Five stunted children and one underweight child had HbA1c $\geq 12.0\%$. 270 blood glucose measurements were taken. Average of glucose readings per child correlated moderately with their HbA1c measurement, ($r=0.54$, $p=0.01$). 111/270(41.1%) measurements indicated hyperglycaemia (≥ 11.1 mmol/l) of which 3/15(20%) which were tested for blood ketones showed a value of ≥ 0.6 mmol/l. Most of the other hypoglycaemic readings occurred between mid-morning and evening of day 2, after intense physical activities. Hypoglycaemia (<4 mmol/l) was present in 30/270(11.1%) measurements, of which 10(33.3%) were 2.1-2.9 mmol/l and 20(66.6%) were 3.0-3.9mmol/l. There were five moderate and one severe nocturnal (02h00) hypoglycaemic events. Total carbohydrate intake per child was 415 – 500g during the camp. Average glucose readings per child correlated weakly with total carbohydrate intake ($r=0.42$, $p=0.07$)

Conclusion: Few children attending the diabetes camp have well-controlled diabetes. Despite this, only 13 of 270(4.8%) glucose measurements required immediate attention, the other abnormal glucose readings could be managed with dietary means, extra insulin doses or physical activity. Regular testing and anticipation of blood glucose levels ensured safe 'sweetness' at the children's diabetes camp

KR -35

Title: BEER-ONLY DRINKING ALCOHOL DEPENDENT PERSONS ARE DIFFERENT

Authors: PM van Zyl, G Joubert

Departments: Pharmacology; Biostatistics

Presenter: Paulina van Zyl

Introduction and aim: We previously reported that acetaldehyde production capacity of salivary microflora (sAPC) has a remarkable predictive value with regard to early resumption of drinking for beer-only drinkers after detoxification. Our initial findings showed a sensitivity of 86.7% and specificity of 100% for sAPC levels on day 2 at a cut-off point of ≥ 170 $\mu\text{mol/ml}$ predicting continued abstinence at 12 weeks for beer-only drinkers. Here we report on the differences between beer-only drinkers and other alcohol dependent individuals in our study population.

Material and methods: Thirty new admissions admitted for treatment of alcohol dependence were recruited from a rehabilitation centre on the second day of admission. Potential participants were excluded if they used other drugs of abuse (except nicotine or cannabis) or antibiotics during the preceding month. After obtaining informed consent, demographic data, drinking, smoking and treatment histories were recorded. sAPCs were determined by gas chromatography. Telephonic follow-ups were conducted every third week to complete a 12 week observation period. One participant was lost during follow-up.

Results : Beer-only drinkers ($n=14$) differed significantly from the rest of study population ($n=15$) in the minimum number of reported units of alcohol consumed per week ($p=0.002$). Beer-only drinkers reported a median consumption of 25.9 units (ranging from 3 to 60) compared to the rest of the population's median consumption of 77 units (ranging from 15-210). The groups also differed significantly in terms of ethnicity ($p=0.02$); and family history of alcoholism ($p=0.03$). They did not differ significantly in age at onset; duration of drinking problem; or outcome at 12 weeks. Beer-only drinkers tended to smoke less ($p=0.04$).

Conclusion: The predictive value of sAPC for beer-only drinkers co-occurs with differences in alcohol dose and level of smoking. The study cannot distinguish between cultural and genetic influences that may underlie the ethnic and familial differences.

KR -36

Title: AAST HIGH GRADE KIDNEY INJURY CLASSIFICATION: ABC APPROACH TO INJURY GRADING, MANAGEMENT AND RADIOLOGICAL SURVEILLANCE

Authors: WJ Conradie, CS de Vries

Departments: Department of Clinical Imaging Sciences

Presenter: Willie Conradie

Introduction and aim: Confusion exists in terms of grading and management of kidney injuries, largely due to an out dated surgical grading system which lack key MDCT findings. Aim is to develop a proposed amendment to the AAST OIS classification of high grade kidney injuries, based on recent literature that will be more descriptive and prognostic. Determine the sensitivity and specificity of the proposed classification through a retrospective clinical audit.

Methodology: Evidenced based CT findings were incorporated into a grading system called the "ABC approach" (A = arterio-venous, B = parenchyma and C = collecting system) which predicted renal injury management.

Retrospective cohort analysis was done of all patients with renal trauma at Pelonomi Tertiary hospital between January 2014 and May 2015. Patients were divided in a "conservative" or "intervention" group, based on renal injury management. The study population were reclassified according to the new "ABC approach" and compared to actual patient management.

Results: Forty-seven patients, the majority male (41; 87%), sustained 47 kidney injuries during the study period. Stab wounds (30; 63.8%) were the dominant mechanism of injury. Based on the 2011 revised AAST criteria, 19 patients had grade 4 and 1 patient grade 5 renal injuries. Eleven (55%) of these patients were managed conservatively. The sensitivity and specificity of the ABC approach to predict renal management were 72.7% and 66.7% respectively with a 72.7 % PPV and NPV of 66.7%. Increased peri-renal haematoma size, complex lacerations, devitalised tissue and vascular injuries were likely to be managed with intervention. Urine leak of >10 mm in diameter on initial imaging was also linked to interventional management.

Conclusion: Study results confirm the predictive value of CT findings in high grade kidney injury management. Despite the small study numbers and retrospective design the "ABC approach" appears to be more descriptive and prognostic than the current grading system.

KR -37

Title: ADJUSTING CALCIUM FOR ALBUMIN IS INAPPROPRIATE AT LOW SERUM ALBUMIN LEVELS

Authors: Y Hayden, JM Kuyl

Departments: Chemical Pathology

Presenter: Yolandie Hayden

Introduction and aim: The serum free ionized calcium represents the biologically active component of calcium and remains the preferred method for determination of patients' calcium status. Analytical methods for ionized calcium are not universally available. Since about 45% of calcium is albumin bound it has been customary to apply a correction formula to total calcium to account for the amount of binding of albumin to calcium. A recent position paper suggests that laboratories should adjust total calcium for albumin concentration with equations developed for their specific calcium and albumin analytical methods. Our research aim is to evaluate albumin and total calcium values from patients at Universitas Academic Laboratories to develop a local formula for adjusting total calcium for albumin and to evaluate the formula's utility against serum ionized calcium values for classifying patients' calcium status.

Methodology: Serum total calcium and albumin results from 14932 patients received from 1 Jan 2013 to 30 May 2015 were included in calculating an adjustment equation. In addition the serum ionized calcium, total calcium and albumin results of 234 patients were taken and adjustment formulas, new and historic, were used to classify them as hypocalcaemic, normocalcaemic or hypercalcaemic.

Results: A laboratory specific formula for adjusted calcium = Total [Calcium] + 0.017 x (32.3 - albumin) was derived. This formula was applied in classification of calcium status of 146 patients with albumin < 32g/L compared to ionized calcium, total calcium alone and corrected calcium.

Conclusion: Total calcium correctly identified 39 hypocalcaemic patients out of the 48 patients with albumin <32g/L and low calcium levels. This data is in favour of not adjusting total calcium for albumin levels in patients with low albumin.

KR-38

Title: PROFILE, HUMAN IMMUNODEFICIENCY VIRUS STATUS, AND OUTCOME OF PATIENTS WITH CONJUNCTIVAL SQUAMOUS CELL CARCINOMA TREATED AT THE DEPARTMENT OF ONCOLOGY

Authors: JI Raats, A Sherriff, G Joubert, C Coetzee

Departments: Oncology and Biostatistics

Presenter: Johann Raats

Introduction and aim: The aim of the study was to determine the prevalence and nature of HIV infection, patient characteristics, treatment, and outcome in patients with squamous carcinoma of the conjunctiva over a period of fifteen years.

Methodology: The clinical records of 215 patients seen between 1998 and 2012 were studied retrospectively. Patient demographic data, tumour, and treatment related data were entered on data sheets. The Chi-square and Fisher's exact tests were used to test associations of factors with recurrence. The Kaplan-Meier method was used to determine and compare progression free survival.

Results: The median age was 39 years (range 25 – 97 years). Gender distribution was female patients 135 (62.8%) and male patients 80 (37.2%). Racial distribution was Asian 1 (0.5%), Black 205 (95.3%), Mixed Race 7 (3.3%), and White 2 (0.9%) patients. HIV status was positive in 182 (84.7%), negative in 19 (8.8%), and unknown in 14 (6.5%) patients. Seventy two (33.5%) patients were followed after surgery without adjuvant therapy. Adjuvant radiotherapy therapy was administered as brachytherapy in 107/113 (94.7%) and external beam radiation therapy in 5/113 (4.4%). Sixteen patients (7.4%) were lost to follow up after surgery. Treatment related toxicity was generally mild. Gender, HIV status, CD4 count, pathologic features, and surgical margins were not significantly associated with the risk of recurrence. Adjuvant radiotherapy significantly reduced the risk of recurrence ($p=0.0001$). The median progression free survival was 38.6 months for all patients, 18.2 months for patients who did not receive adjuvant radiotherapy, whereas the 25th percentile was 25.6 months for patients who did ($p < 0.0001$).

Conclusion: The majority of patients (84.7%) were HIV positive and 62.8% were female. Adjuvant radiotherapy was well tolerated with minimal long term toxicity and the only factor found to reduce the risk of recurrence and improve progression free survival significantly.

KR-39

Title: PREVALENCE OF EYE PATHOLOGY IN DIABETIC CLINIC PATIENTS AT NATIONAL DISTRICT HOSPITAL, BLOEMFONTEIN, FREE STATE

Authors: J Cairncross, WJ Steinberg, M Labuschagne

Departments: Family Medicine

Presenter: Joleen Cairncross

Introduction and aim: Uncontrolled diabetes may lead to multi-organ disease. In South Africa diabetic retinopathy accounts for 8% of blindness. It is the third most common cause for blindness after cataract and glaucoma. The provision of eye-care services plays an important role in preventing these eye complications in diabetic patients. The aim of this study was to determine the prevalence of eye pathology in a group of diabetic clinic patients at National District Hospital by using non-mydratic digital fundus photography as a screening tool.

Methodology: Two hundred and three diabetic patients participated in the study. A short interview with patients was conducted to obtain a diabetic and previous retinopathy screening history. Visual acuity was assessed, intra-ocular pressure was measured and non-mydratic digital fundus photography was used as the screening method. Diabetic retinopathy grading was done.

Results: Over the last year 46 of the 203 patients (23%) complained to their Dr about their vision, 170 (85%) the Dr never enquired about their vision, 95.5% did not have their vision checked with a Snellen Chart in the last year and 164 (82%) were not examined with an ophthalmoscope. Since diagnosis of diabetes only 31 (15.5%) have ever been referred to an Ophthalmologist. Only 136 (68%) of patients knew that diabetes can worsen their vision. Of the 203 patients screened 97 (48%) were referred to Ophthalmology and 87 (43%) to Optometry. Of those referred to Ophthalmology, 37 (18%) has suspected glaucoma, 30 had cataracts (14.7%) and 22 (10.8%) for diabetic retinopathy.

Conclusion: This study confirms that glaucoma, cataracts and diabetic retinopathy are prevalent eye conditions amongst diabetic patients presenting for follow up at NDH. Just under a half needed referral. Offering eye screening at primary healthcare level leads to early detection and early referral for sight-saving treatment.

KR-40

Title: IMPACT OF INTERVENTION DURING CARDIOPULMONARY BYPASS BASED ON PEAK INTRA-OPERATIVE SERUM LACTATE

Authors: L Botes, S Rossouw, L Thompson-Jooste, FE Smit

Departments: Dept of Cardiothoracic Surgery, UFS; Dept of Health Sciences, CUT

Presenter: Francis Smit

Introduction and aim: Predictors of mortality is important for the optimal management of cardiac surgical patients. Serum lactate levels predicting adverse outcomes in intensive care settings is well established. In paediatric cardiac surgery lactate levels are used to identify patients at risk for adverse outcomes. A blood lactate concentration of 4mmol/l or higher during CPB identifies a subgroup of patients with increased risk of postoperative morbidity and mortality. The aim of this study was to investigate the impact of using a peak lactate level greater than 4mmol/l as an indicator for intervention and its relationship with adverse outcomes during coronary artery bypass graft (CABG) surgery.

Methodology: Peri-operative data of 237 elective adult patients with ACS receiving on-pump CABG were included in this prospective longitudinal observational cohort. Group 1 (n=144) included patients with peak intra-operative lactate values <4mmol/l and Group 2 (n=93) included patients with peak intra-operative lactate values >4mmol/l. If the patient's lactate level rose above 4mmol/l intra-operatively the surgical team intervened by managing oxygen delivery by altering sevoflurane, flow rates, hemoglobin and zero-balancing. Demographics, pre-operative risk factors, perfusion and hemodynamic data, and post-operative adverse events and complications were recorded and compared between Group 1 and Group 2.

Results: The study groups were well balanced with respect to demographic characteristics and pre-operative risk factors. The cohorts did not differ significantly with respect to the length of ICU and hospital stay or the length of ventilation time. Patients with lactate levels of 4mmol/l or higher had a mortality rate of 3/144 patients (2.1%) versus 2/93 patients (2.2%).

Conclusion: The results suggests that an isolated peak intra-operative lactate greater than 4mmol/l during CPB surgery is not associated with an increased risk of peri-operative mortality if the surgical team intervenes. Using a lactate threshold trigger for intervention during CPB surgery improves peri-operative outcomes.

KR-41

Title: DETERMINATION OF FUNCTIONAL IRON DEFICIENCY STATUS IN HAEMODIALYSIS PATIENTS AT PELONOMI HOSPITAL AND KIMBERLEY HOSPITAL COMPLEX

Authors: L Haupt, R Weyers

Departments: Department of Haematology and Cell Biology

Presenter: Leriska Haupt

Introduction and Aim: Functional iron deficiency (FID) is characterised by adequate body iron stores with an inadequate rate of iron delivery for erythropoiesis. Patients with chronic kidney disease (CKD) are predisposed to develop FID. Iron availability is best assessed in CKD using the mature red cell parameter, percentage of hypochromic red cells (%Hypo). The aim of our study was to determine the FID status of a population of haemodialysis patients in central South Africa, using the %Hypo parameter. Another objective was to evaluate the ability of the biochemical tests currently in use, transferrin saturation (TSat) and serum ferritin to diagnose FID, using the %Hypo as the diagnostic gold standard.

Methodology: For this study, 49 patients on chronic haemodialysis were recruited. Demographic and clinical data was recorded for each participant. Haemoglobin (Hb), mean cell volume (MCV) and %Hypo were measured on the Advia 2120i instrument. Traditional parameters for monitoring iron status (serum ferritin, TSat) and C-reactive protein (CRP) levels were also recorded.

Results: Of the 49 participants, 21 (42.9%) were diagnosed with FID (%Hypo > 6%). A large number of patients (91.8%) were anaemic. The TSat demonstrated poor sensitivity and specificity for diagnosing FID compared to %Hypo.

Conclusion: A significant proportion of the patients in the study have FID, most likely due to the suboptimal identification of FID by the currently employed biochemical diagnostic tests. Using %Hypo as a single parameter to diagnose FID will lead to more appropriate use of limited resources and a reduction in treatment related complications.

KR-42

Title: KNOWLEDGE, ATTITUDES AND PRACTICES AND RELATED FACTORS OF HIV-INFECTED MOTHERS REGARDING HIV AND INFANT FEEDING

Authors: L Robb, C Walsh, R Nel

Departments: Nutrition and Dietetics & Biostatistics

Presenter: Liska Robb

Introduction and aim: Confusion regarding the infant feeding options that HIV-infected mothers experience is common and can lead to inappropriate choices. HIV-infected mothers should be equipped with sufficient knowledge in order to ensure the best chance of HIV-free child survival.

Methodology: Knowledge, attitudes and practices and related factors of HIV-infected mothers in the postnatal ward of Pelonomi Regional Hospital regarding HIV and infant feeding were determined using private interviews.

Results: A total of 100 mothers were interviewed, most of whom were unmarried and unemployed. A large percentage of mothers had a relatively low (< 350 cells/mm³) CD4 count (46.3%), and a low (< 11.0 g/dL) haemoglobin level (37.3%). Prematurity was classified in 26.2% of infants. Most mothers planned to breastfeed their infant/s (70.9%). When mothers decided on formula feeding it was mainly done in an attempt to prevent postnatal HIV transmission (76.7%). A large percentage of the mothers were not aware of the fact that HIV can be transmitted to an infant via breastfeeding (43.0%). Only half of the mothers were shown how to either breastfeed or formula feed, depending on their choice and mothers could not adequately explain the concept of exclusive breastfeeding.

Conclusion: Many HIV-infected mothers are not fully informed regarding infant feeding. Providing scientifically-based, unbiased information is fundamental during infant feeding counselling sessions and public health education to ensure the success of the prevention of mother-to-child transmission (PMTCT) programmes. If women feel confident in their acquired knowledge, they will be self-empowered and can take better control over their unique infant feeding situations.

Title: POST-TREATMENT SURVEILLANCE ABDOMINOPELVIC COMPUTED TOMOGRAPHY IN CHILDREN WITH WILMS TUMOUR: IS IT WORTH THE RISK?

Authors: JH Otto, DK Stones, J Janse van Rensburg

Departments: Clinical Imaging Sciences, Paediatrics and Child Health, Clinical Imaging Sciences

Presenter: Jacobus Otto

Background: Wilms tumour is a comparatively common paediatric malignancy with a relatively good prognosis. Routine post-treatment surveillance at our institution currently includes regular abdominopelvic CT over a two year period for the early detection of disease recurrence. The rationale is that early salvage therapy may improve overall patient survival, and that this justifies the exposure to potentially harmful ionising radiation.

Objectives: To critically evaluate the routine use of post-treatment abdominopelvic CT by determining the detection rate of disease recurrence and associated clinical outcomes.

Methods: Sixty-four patients in remission following initial treatment for Wilms tumour were included in this retrospective study. Variables obtained from patient records included gender, age, histological grading and tumour stage at presentation, number of abdominopelvic CT scans, site(s) of relapse, method of recurrence detection and confirmation, time to recurrence and clinical outcome.

Results: The patients received a total of 334 surveillance abdominopelvic CT scans. Nine (14%) patients developed disease recurrence during the follow-up period. In three cases the initial detection method was abdominopelvic CT. All three of these patients subsequently died despite salvage therapy (22 months median survival). Five false positive diagnoses of recurrence occurred, with two being made on abdominopelvic CT.

Conclusion: Routine post-treatment abdominopelvic CT showed a low detection rate of disease recurrence in children treated for Wilms tumour, while subjecting patients to a large radiation burden. The recommendation is that current practice be changed in line with the ultrasound-based European SIOP imaging guidelines.

KLINIESE PLAKKATE/ CLINICAL POSTERS

KPV-1

Title: KEY AMULETS AND EPISTAXIS. IS THERE A LINK?

Authors: CL Barrett, MJ Webb, J LeR Malherbe, S du Plooy

Departments: Internal Medicine, Dept Anthropology (UFS)

Presenter: Claire Barrett

Introduction and aim: The researchers have noted an association between epistaxis and wearing a key amulet/ talisman in some Black South African patients treated at the Universitas Academic Complex. We explored this link to see whether there was any significance to this practice.

Methodology: Informal, unstructured interviews as well as a literature search was performed to determine whether there was any link between wearing a key amulet and epistaxis. Permission to present this case series was granted by the Ethics Committee of the University of the Free State.

Results: Four patients who were noted to be wearing a small key as an amulet were included in a case series. All patients had clinically significant epistaxis; two had immune thrombocytopenic purpura and two had uraemic platelet dysfunction. All patients reported that they had been advised by their "elders" to wear a key amulet as a measure to treat epistaxis. A traditional practitioner confirmed that wearing a small key is the local traditional treatment of epistaxis. Wearing of a key amulet as treatment or prevention of epistaxis has not been noted in the literature. Subsequent to obtaining ethics permission to present this case series, numerous other patients with a history of epistaxis have been noted to be wearing key amulets.

Conclusion: All patients whom we noted to be wearing a key amulet had clinically significant causes of epistaxis. We believe that a Black patient who is noted to be wearing a key amulet should prompt medical practitioners to enquire specifically about epistaxis. Further exploration is needed to establish what the term "elder" or "batho ba baholo" means in this context.

KPV-2

Title: THE ROLE OF DRAWINGS TO ENHANCE COMMUNICATION AND ASSESS EMOTIONAL WELL-BEING IN CHILDREN RECEIVING PEDIATRIC PALLIATIVE CARE

Authors: H Brits

Department: Family Medicine

Presenter: Hanneke Brits

Introduction and aim: Communication is a cornerstone of palliative care. In children it can be very challenging, especially when they are ill and from different cultural and language groups. Drawings are a way to reveal thinking and can reflect emotions difficult to express. In 2014 we introduced drawings to try and enhance communication and assess emotional status in primary school children receiving pediatric palliative care (PPC). The aim of this study was to describe trends in the drawings and look for possible links with clinical depression as part of PPC assessment.

Methodology: Children between the ages of seven and 12 years, admitted for PPC were asked to draw a human figure according to guidelines of Koppitz. These pictures were assessed with a standardized emotional indicator scale (EI's). Pictures were also assessed according to the criteria set by Skybo *et al* and focused on the global impression, content analysis, behavior during drawing and child's feedback on the picture. Two people had to interpret each picture and 95% agreeability was accepted. Each picture was discussed with the specific child afterwards and concerns were addressed

Results: Twenty children completed at least one human figure drawing (HFD). Nine other pictures were also assessed. The minority of children draw a child of his/her age or gender, they mostly drew the doctor. Small figures and the presence of more than two EI's correlated with clinical depression.

Conclusion: Picture drawing is a very inexpensive, noninvasive tool that can facilitate communication and enhance the expression of emotion in children receiving PPC. It can also help the doctor or therapist to identify emotional distress.

**Title: REPORTED EXPOSURE TO TRAUMA AMONG ADULT PATIENTS REFERRED FOR
PSYCHOLOGICAL SERVICES AT THE FREE STATE PSYCHIATRIC COMPLEX**

Authors: L van Zyl, C Nel, M du Toit, G Joubert

Departments: Psychiatry and Biostatistics

Presenter: Laurisa van Zyl

Introduction and aim: Information regarding lifetime exposure to potentially traumatic events is critical in the management of various psychiatric disorders. However, a comprehensive assessment of traumatic exposure is frequently excluded from routine psychiatric interviews, resulting in the potential underdiagnosis of trauma-related disorders. The study aimed to explore the extent to which trauma-related information was obtained during the initial assessment of adult patients referred for psychological services at the Free State Psychiatric Complex.

Methodology: A total of 192 files of adult mental health care users who received psychological services during a one year period at the adult out-patient unit and in-patient affective ward at the FSPC were included in this cross-sectional study. Information regarding demographic variables, diagnostic morbidity and co-morbidity, and presence and type of reported trauma exposure were noted on data record forms.

Results: Of the 192 adults (63 male and 129 female) referred for psychological services, 76 % were diagnosed with a mood disorder, 27% with an anxiety disorder (including Post-Traumatic Stress Disorder), 22% with a substance related disorder and 21% with cluster B personality disorders or traits. A total of 154 (75.5%) reported past trauma during their initial assessment. The most frequently reported types of trauma exposure were death/injury of a loved one (41.2%), physical assault (31.3%), witnessed / threatened violence (20.8%) and sexual assault (20.3%). Women were more likely to have been exposed to trauma than men (Odds ratio 4.02, 95% CI 1.87 to 8.62), in particular to death of a loved one (OR 3.13), physical assault (OR 4.08) and sexual assault (OR 5.43).

Conclusion: The findings of this project have contributed to current data regarding the incidence of exposure to trauma and its possible association with mental illness. The findings highlighted the need for comprehensive trauma exposure screening in routine psychiatric interviewing practices.

LABORATORIUM REFERATE/ LABORATORY PAPERS

LR-1

**Title: IMPROVEMENT OF VENTRICLE VOLUMETRIC CALCULATION AND VISUALIZATION IN
CARDIAC MRI**

Authors: Y Brijmohan, N Ramchunder, SH Mneney, W I D Rae

Departments: Electronic Engineering, UKZN (YB, NR, SM), Medical Physics, UFS (WR)

Presenter: William Rae

Introduction and Aim: Magnetic resonance imaging (MRI) is widely used in medical care services to perform visualisation of the human heart in order to assist in the diagnosis of several cardiovascular diseases. The severity of these disease states is often diagnosed and evaluated by analysing the blood volumes and flow rates within the ventricles. An accurate segmentation of the left and right ventricle from MRIs, at the end diastolic and end systolic cardiac phases, is the first step required for the volumetric calculations. Simpson's rule for measuring volumes is currently the most commonly used method in the literature, in which the volume at a particular cardiac phase is obtained by multiplying the segmented area by the slice thickness per slice and performing a summation over all slices. This method results in volumetric errors for imaging performed with large (non-isotropic) slice thicknesses.

This study aims to use three sets of orthogonal images and a mesh fit to reduce the errors in calculating ventricular volumes.

Methodology: Three sets of orthogonal cardiac MRIs were obtained from 5 volunteers and these were segmented and the information was superimposed to eliminate end approximation effects and Delaunay triangulation was performed. A high resolution voxel representation was created so as to calculate volumes for the left and right ventricles.

Results: The volumes were more consistent than those calculated using the conventional method and the stroke volume error between ventricles was less than 4%.

Conclusion: In this paper, methods of surface modelling are introduced to interpolate the volume between slices, providing a smooth surface visualisation of the ventricles. Furthermore, by using segmentation information from three orthogonal MRI views, improvements in the visualisation and volume calculation are formulated.

LR-2

Title: RE-ENDOTHELIALIZATION OF DECELLULARIZED BABOON ARTERIES

Authors: MM Khemisi, FE Smit, M Meiring

Departments: Haematology and Cell Biology and Cardiothoracic Surgery

Presenter: Mmakgabu Khemisi

Introduction and aim: Tissue-engineering studies currently focus on the use of decellularized biological scaffolds for the reconstruction of small-diameter vascular grafts. These decellularized vessels are thought to be ideal graft materials for replacement of diseased vessels. However, thrombogenicity is a major cause of obstruction in these vessels. Seeding of the decellularized vascular constructs with endothelial cells is an attractive proposition as the endothelial layer incorporates many of the anti-thrombogenic properties of blood vessels. The aim of this study was to successfully re-endothelialize decellularized baboon arteries and then perfused it with whole blood to investigate surface thrombus formation.

Methodology: The histology of the decellularized arteries was compared to normal arteries. Human umbilical vein endothelial cells were cultured and the cell viability measured. Cultured endothelial cells were used to seed the luminal surfaces of the decellularized baboon arteries. A confluent endothelial monolayer of the seeded decellularized arteries was assessed using scanning electron microscopy (SEM) after 7 days and tested for viability. Lastly, normal, decellularized and seeded decellularized arteries were perfused with baboon blood and examined with SEM to detect thrombus formation on the luminal surfaces.

Results: Although the decellularized arteries were not completely cell free, the ECM was preserved. Enough viable ECs were obtained in culture to seed three decellularized baboon arteries. After 7 days post seeding, a confluent endothelial monolayer was observed on the luminal surfaces of the decellularized scaffolds. The blood-perfused normal artery and the seeded decellularized arteries showed no thrombus formation on their luminal surfaces. The decellularized arteries however showed widespread platelet adhesion and activation on the surface.

Conclusion: The decellularization process produced morphologically preserved extracellular matrix. The endothelialization process was successful since the endothelialization of decellularized vascular grafts does prevent thrombus formation on artery surfaces after perfusion with whole blood, while a decellularized scaffold does promote thrombus formation.

LR-3

Title: RESTRICTION METHOD FOR DETECTING LOW LEVEL RIFAMPICIN RESISTANCE IN MYCOBACTERIUM TUBERCULOSIS

Authors: CM Sokhela, A van der Spoel van Dijk

Departments: Medical Microbiology and Virology, National Health Laboratory Service Universitas Academic Laboratory

Presenter: Cebolenkosi Sokhela

Introduction: Multidrug resistant Mycobacterium tuberculosis (MDR-TB) is resistant to rifampicin and isoniazid. A mutation in codon L511P of the rpoB gene will result in variable levels of resistance to rifampicin. In such cases GenoType MTBDRplus [a line probe assay (LPA)] testing is inconclusive for rifampicin resistance and time consuming phenotypic testing is required.

Aim: To develop a restriction method to identify isolates with the L511P mutation in the rpoB gene.

Methods: MDR-TB isolates (n=12) with a possible mutation at codons (510-513) of the rpoB gene depicted by an absence of a wild type probe (W2) as determined with LPA were collected. Six isolates with absent W8 (codons 530-533) were used as negative controls. Drug susceptibility testing using agar proportion method was used to confirm rifampicin resistance and sequencing was performed to confirm the presence of the L511P mutation. A restriction assay was performed using the enzyme PvuII that recognises the restriction site 5'CAG//CTG3' adjacent to codon 511 of the rpoB gene.

Results: Of the 12 isolates with an absent W2, 7 had a L511P mutation with MICs between 0.12-2 µg/ml. Of the remaining five, two Q513P and two Q513K had MICs between 2->16µg/ml while one L511R had MIC of >16µg/ml. All control isolates had a MIC =8 µg/ml and were phenotypically resistant. The restriction enzyme PvuII successfully restricted all isolates that did not contain a codon 511 mutation.

Conclusion: Isolates that have an absent W2 with the LPA confer some degree of resistance to rifampicin at a low level and are detectable by restriction. All isolates with mutations other than L511P within W2 in our settings showed high level resistance. A restriction assay can be used to distinguish these isolates, but larger study numbers are needed before implementation in a diagnostic laboratory.

LR -4

Title: A SUBCUTANEOUS RAT MODEL TO STUDY THE EFFICACY OF DECELLULARIZATION ON CALCIFICATION OF BOVINE PERICARDIUM

Authors: FE Smit, R Correia, JJ vd Heever, D Bester, L Botes, J Goedhals, PM Dohmen

Departments: Dept of Cardiothoracic Surgery, UFS; Dept of Cardiovascular Surgery, Charite; Anatomical Pathology, UFS; Dept of Biomedical Sciences, CUT

Presenter: Hans van den Heever

Introduction and aim: Glutaraldehyde (GA) cross-linked bovine pericardium is widely used in cardiovascular surgery. The pericardium deteriorates due to calcification, cytotoxicity and the absence of regeneration and growth potential. Premature degeneration of xenograft tissue through immunological responses to donor cells remains a challenge

Aim: To compare biological interaction and tissue integrity of decellularized and decellularized-&-fixed bovine pericardium to GA-fixed pericardium in the subcutaneous rat model.

Methodology: Bovine pericardial samples of 1x2cm were divided into 3 groups: 0.625% GA-preserved (Group 1; n=8), decellularized (Group 2; n=8) and decellularized-&-fixed (Group 3; n=8). Samples were implanted subcutaneously in rats for 8 weeks. After explantation, mechanical properties were examined by tensile strength (TS) & Young's modulus (YM) tests, histology by H&E, von Kossa and Picrosirius Red staining, immunohistochemistry by α -actin, CD-31 and CD-34 staining. Transmission electron microscopy (TEM) & quantitative Ca^{2+} -content analyses were done on all explanted samples.

Results: TS of explanted samples in Group 1 showed values of 6.87 ± 0.75 MPa vs 3.52 ± 2.65 MPa in Group 2 and 5.88 ± 1.11 in Group 3. YM reported for Group 1 were 53.25 ± 18.74 MPa, 11.23 ± 4.95 MPa for Group 2 and 7.89 ± 1.5 for Group 3. Significant loss in TS from pre- to post implantation samples was observed in all groups. Histology revealed complete decellularization with well-preserved scaffolds in both decellularized groups pre-implantation, and cellular activity and well-preserved extracellular matrices at explantation. von Kossa staining exposed significant calcification of GA-treated tissues compared to groups 2 & 3, and this result was confirmed quantitatively (Group 1: 1555.8 ± 453.13 , Group 2: 16.07 ± 9.45 , Group 3: 67.54 ± 18.73 µg/mg/dry weight).

Conclusion: Extracellular matrix of bovine pericardium is well preserved during decellularization. However, mechanical properties of the pericardium are reduced in the non-dynamic subcutaneous rat model in all groups. Decellularization of bovine pericardium reduces calcification significantly compared to GA-fixation. Explanted decellularized pericardium demonstrated cellular activity with a well preserved and organized extracellular matrix.

LR-5

Title: COMPARISON BETWEEN THE QUALITY CONTROL RESULTS OF THE 3 TESLA AND 1.5 TESLA MAGNETIC RESONANCE IMAGING UNITS AT UNIVERSITAS ACADEMIC HOSPITAL

Authors: IW Theron, WID Rae

Departments: Medical Physics

Presenter: Iris Theron

Introduction and aim: Quality control (QC) is an essential part of quality assurance in a diagnostic radiology department, and is done to ensure the production of high-quality diagnostic images. A well-structured, well documented QC program which is performed regularly and reliably is essential for consistent production of high quality Magnetic Resonance Imaging (MRI) images. Recent dramatic advances in medical MRI technology have increased interest in clinical imaging at 3 Tesla (3T). These units are now commercial available and promise an increased signal-to-noise-ratio (SNR). A new 3T MRI unit was recently installed at the Universitas Academic Hospital. This study compares the results of the quality control testing done on the 3T and 1.5T MRI whole body scanners.

Methodology: The tests for this study were done on the 3T Phillips Ingenia and the 1.5T GE MRI scanners. A System Performance Test (SPT) was performed using the phantoms provided by the respective vendors. The Diffusion Weighted Imaging (DWI) test was performed using the phantom provided for this test by GE. Lastly, the American College of Radiology (ACR) quality control was performed using the ACR MRI phantom to measure and then compare the image quality properties of the scanners.

Results: The SNR of the 1.5T MRI scanner is 57.05, compared to the 94.37 of the 3T MRI scanner. The resulting increase in SNR is as expected due to increased proton alignment along the main magnetic field axis. The improved SNR achieved with the 3T MRI scanner also improved results obtained for other QC tests, including improved spatial resolution. Detailed results will be presented including the ADC and T1 values obtained for the standard phantoms imaged.

Conclusion: As anticipated QC testing on the 3T MRI showed some of the benefits of higher field strengths, and will ensure that the improved image quality is maintained.

LR-6

Title: SUITABILITY OF THE CHACMA BABOON IN HUMAN TARGETED PRECLINICAL ANTI-PLATELET STUDIES

Authors: W Janse van Rensburg, P Badenhorst, A de Kock

Departments: Department of Haematology and Cell Biology; Division of Clinical Haematology

Presenter: Walter Janse van Rensburg

Introduction and aim: Anti-platelet agents play an essential part in the management of acute thrombotic events. However, the current agents have disadvantages ranging from patient resistance to potentially fatal side-effects. Discriminating animal models are needed for development of novel agents that overcome these disadvantages. The chacma baboon (*Papio ursinus*) has been extensively used as a model to evaluate anti-platelet agents. However, inadequate data exists to substantiate the translatability of this species to the human clinical setting. We aimed to determine whether the chacma baboon is a suitable model to use in preclinical human targeted GPIIb/IIIa, GPIba and P2Y12 studies.

Methodology: Light transmission platelet aggregometry (LTA), GPIIb, GPIIIa and GPIba receptor number quantification and Sanger genomic DNA sequencing were performed.

Results: ADP and arachidonic acid induced aggregation results differed significantly between baboon and human control values, even at increased agonist concentrations. Ristocetin-induced agglutination was comparable between species. However, baboon platelets needed twice the concentration of ristocetin than humans to elicit a similar response. The amount of GPIIb, GPIIIa and GPIba was significantly more on the baboon platelets compared to healthy human volunteers. None of the amino acids deemed vital for receptor function, ligand binding or receptor inhibition, were radically different between the species for any of the receptors. Nonetheless, a conservative change in a calcium binding region of GPIIb may render the baboon platelets more sensitive to calcium binding agents, such as sodium citrate. Thus, influencing aggregation results.

Conclusion: The chacma baboon is believed to be a suitable animal model for the assessment of human targeted GPIIb/IIIa, GPIba and P2Y12 inhibiting agents. However, the best anticoagulant, optimal agonist concentrations, increase in receptor number and sequence differences must be considered for any future studies.

LR-7

Title: CHARACTERISTICS OF HEREDITARY BREAST CANCER IN THE INDIAN POPULATION OF SOUTH AFRICA

Authors: HMVE Combrink, J Oosthuizen, PJ Moeti, NC van der Merwe

Departments: Division of Human Genetics, UFS & NHL, Bloemfontein

Presenter: Michael Combrink

Introduction and aim: The familial breast cancer (BC) genes BRCA1 and BRCA2 play a major role in transcription, DNA repair of double-stranded breaks and recombination. Mutations in these genes account for 40% of inherited BC families and more than 80% of familial breast- and ovarian cancer families. Knowledge of the prevalence of these mutations in a specific population, such as the Indians of South Africa (SA), is necessary to provide accurate genetic testing on a diagnostic platform. A study was conducted on SA Indian BC patients requesting screening for the presence of BRCA mutations.

Methodology: All the families had extensive pedigrees which confirmed a familial inheritance. Fifty unrelated Indian patients with a moderate to high risk for carrying BRCA mutations were evaluated. Screening commenced with PTT for BRCA1 exon 11 and BRCA2 exons 10 & 11, followed by High Resolution Melting analysis (HRMA) of the remaining sections of the genes. All samples deviating from the base line were DNA Sanger sequenced.

Results: During the screen, 5 deleterious mutations, each unique to a specific family, were identified in BRCA1/2 exon 11. Four additional disease-causing mutations were identified using HRMA. Two recurrent mutations were detected, namely two families carried a single base change in BRCA1 exon 5 and three families exhibited the splice-site mutation in BRCA2 exon 21. The detection rate for pathogenic mutations within this unique SA population proved to be quite high, namely 28%.

Conclusion: This study was the first of its kind to examine the characteristics of hereditary BC in the Indian population of SA. This data led to the compilation of a population directed test option which specifically tests for these mutations in the SA Indian population.

LR-8

Title: DEVELOPMENT OF A VWF PROPEPTIDE ASSAY USING PHAGE- AND YEAST DISPLAY TECHNOLOGIES

Authors: M Meiring, P Setlai, R Bragg

Departments: Haematology and Cell Biology and Biotechnology

Presenter: Muriel Meiring

Introduction and aim: Von Willebrand disease (VWD), the most common bleeding disorder in the world, is largely under-diagnosed or misdiagnosed. Most VWD patients are diagnosed with a quantitative defect of von Willebrand factor (VWF) and about half of them present with increased clearance of VWF. These patients do not respond well to treatment because the efficacy is reduced. The ratio between von the Willebrand factor propeptide (VWFpp) and the mature VWF antigen can be used to diagnose these patients. The current commercially available assays for the VWFpp in plasma are very expensive because the antibodies used in these assays are produced using animals. In this study, we developed a cost-effective ELISA assay to determine the plasma levels of VWFpp.

Methodology: The VWFpp was first displayed on yeast, since no commercial preparation exists. By using phage display technology, we selected two single chain variable antibody fragments (ScFv) from almost two-hundred phage colonies that bind specific to the VWFpp and not to the yeast on which it was displayed. The antibody fragments were purified on protein A columns and tested for specific binding to the VWFpp.

Results: The purified ScFv were able to detect VWFpp in normal plasma. Our antibody fragments showed a higher binding affinity for VWFpp in plasma than commercial antibodies. Our assay is also more cost-effective, since it was not necessary to use experimental animals. The production of ScFv can also be amplified cost-effectively in E.coli cells.

Conclusion: The combination of yeast- and phage display could be the reason why the 2 ScFv were selected successfully without alterations in specificity as both technologies are known to produce antibodies with the highest binding affinity. The next step is to validate our assay and possibly commercialise it as a cost-effective assay for the determination of VWFpp in plasma.

LR-9

Title: MONTE CARLO STUDY ON MEGA VOLT X-RAY TARGETS FOR EVALUATION OF NANOPARTICLE-ENRICHED TUMOR DOSE ENHANCEMENT

Authors: S Mutsakanyi, FCP Du Plessis

Departments: Medical Physics

Presenter: Stalyn Mutsakanyi

Introduction and Aim: Radiation therapy features prominently in the treatment of cancer. Resistance of tumor cells to this modality still remains a serious concern. Therefore the study of localised dose enhancement has emerged as a persistent hotspot in radiation oncology. Recent studies have shown that tumor dose can possibly be enhanced using metal complexes attached to carbon nanoparticles (NPs). The aim of this study was to simulate various bremsstrahlung targets using the EGSnrc based Monte Carlo (MC) codes. The resulting altered spectral change was observed and will be used in subsequent MC simulations to evaluate dose enhancement in NPs.

Materials and method: MC simulations were run with an altered tungsten (W) based bremsstrahlung target for a 6 MeV beam of incoming electrons. Different thicknesses of carbon and water layers were modeled on top of varying thickness of W. The linac model was simulated with and without a flattening filter. In BEAMnrc the simulation of the radiation beam was done and the resulting phase space (PS) was collected as exit particles below the treatment head. Secondly, this PS source was used to simulate the transport of particles in a water phantom using the DOSXYZnrc code. From these water tank results percentage depth dose alterations could be investigated. This information will further be used to evaluate dose enhancement in NP-enriched tumors.

Results: The addition of carbon and water layers on top of the W target altered the bremsstrahlung x-ray photon spectral distribution as well as the mean energies by creating more low energy photons.

Conclusion: We show that, the x-ray spectral distribution can be altered using water and carbon layers additionally to W which act as a slowing down medium for electrons. This can in principle change the dose enhancement factor (DEF) in the presence of NPs due to generation of additional photo- or Auger-electrons.

LR-10

Title: SCREENING OF HUMAN PAPILLOMAVIRUS (HPV) IN PATIENTS WITH CONFIRMED HEAD AND NECK SQUAMOUS CELL CARCINOMA

Authors: TR Sekee, D Goedhals, R Seedat, FJ Burt

Departments: Medical Microbiology and Virology, Otorhinolaryngology

Presenter: Tumelo Sekee

Introduction and aim: Human papillomaviruses (HPV) belong to the Papillomaviridae family. Low risk HPV types are associated with benign lesions and high risk HPV types with malignancy. Head and neck squamous cell carcinoma (HNSCC) is traditionally associated with alcohol and smoking, however despite a decrease in alcohol consumption and smoking there is still an increased incidence of HNSCC, with some attributed to HPV. The aim of this study was to develop molecular assays to amplify specific HPV types known or likely to be associated with HNSCC.

Methodology: A total of 45 tissue biopsies submitted from patients with confirmed HNSCC were tested. DNA was extracted from each biopsy. The presence of HPV was determined using a previously described universal nested PCR targeting a conserved region of the genome using consensus primers. An in house multiplex PCR was developed in which primers were identified to target the E6 gene of HPV types 6, 11, 16, 18, 31, 33 and 58. The integrity of the DNA was confirmed using PCR and primers targeting the beta-globin gene.

Results: All samples tested positive for the beta-globin gene. Using consensus primers, HPV was detected in 8/45 biopsies. Sequence analysis revealed three high risk-HPV types, 16, 18 and 31, and two low risk-HPV types, 6 and 11. A total of 15 samples have been tested using the E6 multiplex PCR, three tested positive for HPV in concordance with the consensus PCR.

Conclusion: A multiplex PCR targeting the E6 gene of specific HPV types was developed to be used in combination with the universal PCR to circumvent false negative results due to loss of regions of the genome during viral integration. To date the results are in concordance and remaining samples will be tested. The methods can be used for screening however each method has its limitations that need to be considered before using those methods.

LR-11

Title: POSTCRANIOMETRIC ANALYSIS OF ANCESTRY AMONG MODERN SOUTH AFRICANS

Authors: L Liebenberg, EN L'Abbé; KE Stull

Departments: Basic Medical Sciences

Presenter: Leandi Liebenberg

Introduction and aim: The primary role of a physical anthropologist is to provide sufficient information to individualise skeletal remains. This is achieved by establishing the biological profile, of which ancestry is an essential aspect. Several successful craniometric approaches have been developed to facilitate the estimation of ancestry. However, the cranium is not always available for analysis, emphasising the need for postcranial alternatives. The purpose of this study was to explore and quantify postcranial differences among modern, peer-reported black, white and coloured South Africans.

Methodology: A series of 39 standard measurements were taken from 11 postcranial bones, namely the clavicle, scapula, humerus, radius, ulna, sacrum, pelvis, femur, tibia, fibula and calcaneus. The sample consists of the postcrania of 360 modern South African individuals (120 black, 120 white, 120 coloured) housed at the Pretoria Bone Collection (University of Pretoria) and Kirsten Collection (Stellenbosch University). Group differences were explored with both univariate and multivariate approaches, including linear discriminant analysis (LDA) and flexible discriminant analysis (FDA) to facilitate group separation.

Results: Classification accuracies for the univariate models ranged from 43% to 87%, with iliac breadth performing the best. Multivariate bone models created for each bone resulted in accuracies of 46% to 62% (LDA) and 41% to 66% (FDA). Multivariate subsets presenting different possible combinations of predictor variables achieved accuracies as high as 85% (LDA) and 87% (FDA).

Conclusion: Through the use of multiple approaches, postcraniometric differences are shown to exist between peer-reported black, white and coloured South Africans. Multivariate models obtained overall better results than univariate sectioning points. Furthermore FDA, a fairly novel approach in the field of forensic anthropology, achieved higher accuracies than the more traditional approach of LDA. Even in a highly heterogeneous population, postcranial elements can be used to estimate ancestry with high accuracy.

LR-12

Title: VERIFICATION OF A MONTE CARLO SIMULATED SIEMENS SYMBIA SPECT/CT

Authors: M Booyens, M Morphis, J Van Staden, H du Raan

Departments: Medical Physics

Presenter: Maresia Booyens

Introduction and aim: Monte Carlo (MC) simulations can be employed in nuclear medicine to improve the qualitative and quantitative accuracy of planar and Single Photon Emission Computed Tomography (SPECT) images. In this study a Siemens Symbia T2 SPECT/CT system was modelled using the SIMIND MC code. Planar images were simulated and acquired to determine the system performance characteristics in terms of energy resolution, system spatial resolution and sensitivity. SPECT image quality was assessed in terms of image contrast, uniformity and resolution. The aim of the study was to determine if the SIMIND MC code could be used to accurately simulate acquisitions of images obtained with a Siemens Symbia T2 SPECT/CT system.

Methodology: Experimental data was acquired according to National Electrical Manufacturers Association standards. CT images of each setup were acquired and segmented. Segmentation eliminates slight pixel to pixel variations, producing areas of uniform density. Simulations were performed using segmented images. The experimental and simulated results were compared.

Results: The energy spectra for Tc-99m in air compared favourably. Experimental and simulated values were; energy resolution: 9.4 % and 9.6 % respectively, extrinsic spatial resolution: 7.6 mm and 7.1 mm respectively, sensitivity: 97.4 cps/MBq and 97.0 cps/MBq respectively. Extrinsicly measured and simulated image contrast, uniformity and resolution were analysed and found to compare well.

Conclusion: The results of this study show that the SIMIND MC code can be used with confidence to accurately simulate planar and SPECT projections of the Siemens Symbia T2 SPECT/CT. Future studies will determine the accuracy of the SIMIND MC code for simulations with high energy radioactive Au-198.

LR-13

Title: EVALUATION OF AN AUTOMATED LUPUS ANTICOAGULANT METHOD USING THE SYSMEX CS-2000I SYSTEM®

Authors: N Rossum, MJ Coetzee

Departments: Haematology and Cell Biology

Presenter: Nicole Rossum

Introduction and aim: Antiphospholipid syndrome (APS) is an acquired autoimmune disease with obstetric and thrombotic complications in the presence of persistent laboratory evidence of antiphospholipid antibodies. Lupus anticoagulant (LA) antibodies interfere with phospholipid-dependent coagulation tests. As APS is a difficult clinical diagnosis, the laboratory plays an important diagnostic role. However LA assays remain challenging. Our laboratory acquired a new automated coagulation analyser. Before changing from the semi-automated method to the new method we compared them. Simultaneously we aimed to address some controversies in LA testing.

Methodology: The patient sample consisted of 118 sequential requests for LA testing received at our laboratory. Control specimens were obtained from 23 healthy volunteers. Each sample was analysed using both the semi-automated and the fully-automated test methods. The semi-automated method consisted of two tests, the lupus sensitive partial thromboplastin time (PTT-LA) and dilute Russell viper venom time (DRVVT). The fully-automated method consisted of PTT-LA, DRVVT and silica clotting time (SCT) tests.

Results: The fully automated SCT, PTT-LA and DRVVT had a sensitivity of 16.7%, 100% and 25%, and a specificity of 100%, 100% and 99% respectively. By combining the results of SCT with those of DRVVT, and aPTT with those of DRVVT, sensitivities of 18.9% and 100% respectively were achieved, with a specificity of 100%.

Conclusion: The fully automated method compared well with the semi-automated method, based both on quantitative and qualitative data. We therefore accepted the automated method. We found that PTT-LA is the most sensitive assay for LA, and SCT the least sensitive. The highest sensitivity was achieved by combining PTT-LA and DRVVT results. The fully automated method is in fact superior to the semi-automated method. This is probably because operator variability is excluded.

LR-14

Title: THE NEW WHO CRITERIA FOR HUMAN SEMEN: ACCEPT OR REJECT?

Authors: DR Franken, S Grobler, SL Rossouw

Departments: Obstetrics & Gynecology, Department of Cardiothoracic Surgery

Presenter: Daniel Franken

Introduction: The World Health Organization (WHO) periodically publishes manuals for the laboratory examination of human semen. The first was published in 1980, with subsequent editions followed in 1987, 1992, and 1999. These manuals are used as a source of standard methods for laboratories performing semen analyses worldwide. The 5th Edition was published in 2010 which used the results obtained from recent fathers with a known time-to-pregnancy.

Aim: The 2-part retrospective study aimed first to record the semen characteristics of among men referred to the infertility clinic for a routine semen analysis according to the World Health Organization's (WHO) guidelines described in 2010. Second to record the fertility status of the men as evaluated by the WHO criteria set in the 5 manuals for semen analysis since 1980.

Methodologies: The semen analysis of men was assessed according to the criteria for semen described by the World Health Organization manuals of 1980, 1987, 1992 and 1999. The analyses were performed in a private fertility unit in South Africa. Patients: The semen analysis of 3226 men referred for a routine semen analysis was included in the study. Semen was collected after 2-3 days of sexual abstinence following the guidelines according to the WHO 2010 guidelines.

Results: The results indicated that only 3% cases were re-classified as fertile when applying the WHO 1980 criteria (2). Likewise, 36% were re-classified as fertile when applying the 1987 criteria, 41% applying the 1992 criteria, 42% applying the 1999 criteria and, finally, 53% applying the 2010 criteria, respectively.

Conclusion: It seems that routine semen analysis when performed according the new WHO 2010 criteria reflects the true demography of the fertile population. Finally, in the absence of evidence based information concerning the male fertility potential the current guidelines described by the WHO 2010 should be accepted.

LR-15

Title: MONTE CARLO EVALUATION OF THE DOSE PERTURBATION EFFECT OF HIP PROSTHESES FOR MEGAVOLTAGE PHOTON RADIOTHERAPY

Authors: Mahuvava C, Du Plessis F.C.P

Departments: Medical Physics

Presenter: Courage Mahuvava

Introduction: Hip prostheses (HP) are used in hip augmentation to replace diseased hip joints. However, high-Z inserts cause dose perturbations during radiotherapy, resulting in unacceptable dose distributions in the target and in regions surrounding the prosthesis. This study evaluates the dosimetric effect of HP during prostate radiotherapy using Monte Carlo (MC) simulations.

Materials and methods: BEAMnrc MC user-code was used to model an Elekta Precise linac head. DOSXYZnrc was used to calculate dose distributions in a mathematical Rando phantom with and without HP. The 3D dose files from DOSXYZnrc were analysed by MCSHOW software for extracting PDD data. Stainless steel, titanium and ultra-high-molecular-weight polyethylene HP were used. Prosthetic models were drawn into the phantom CT dataset using MCSHOW and then converted into the desired HP material using an IDL code. Various photon beam configurations of 6, 10, 15 and 20 MV were used.

Results: Dose attenuation along the prosthesis ranged between 13% and 33%. Maximum dose attenuation occurred at the head/proximal shaft where the width is thickest; minimum attenuation was at the tip. Higher attenuation occurred at lower beam energy. The shadowing effect is density-dependent, and its maximum effect is caused by stainless steel prostheses. Greater dose perturbation was observed in 4FBOX compared to 6-Field plan.

Conclusion: The dose within/beyond prostheses drops significantly due to attenuation by the prostheses. MCSHOW allowed the addition of HP in the phantom from CT dataset of a patient without HP-thus eliminating streak artifacts from CT scan in the presence of HP. This allows one to carry MC calculations for several implant models and patient geometry. The rectum DVH is not significantly compromised by addition of HP in a 6field plan. Results highlight the importance of beam position on the dose distribution and the powerful application of MC in studying complex dosimetric problems.

LR-16

Title: IDENTIFICATION OF NOVEL T CELL EPITOPES ON CRIMEAN-CONGO HAEMORRHAGIC FEVER VIRUS AND CONFIRMATION OF LONG-LIVED MEMORY T CELL RESPONSES

Authors: D Goedhals, JT Paweska, FJ Burt

Departments: Department of Medical Microbiology and Virology, NHLS/UFS; Center for Emerging and Zoonotic Pathogens, National Institute for Communicable Diseases, NHLS

Presenter: Dominique Goedhals

Introduction: Crimean-Congo haemorrhagic fever virus (CCHFV) is a tick-borne virus associated with haemorrhagic fever in humans with a fatality rate of approximately 30%. The negative-stranded RNA genome consists of three segments (S, M and L) coding for the nucleoprotein, the envelope glycoproteins (G_N and G_C), and the viral polymerase respectively. Although T lymphocyte responses are known to play a role in protection from and clearance of many viral infections, immune correlates of protection for CCHFV have not been defined.

Methodology: A panel of 156 overlapping peptides covering the CCHFV nucleoprotein and the structural glycoproteins, G_N and G_C , were screened by ELISpot assay to detect interferon gamma (IFN- γ) production in vitro by peripheral blood mononuclear cells from ten subjects with previous CCHFV infection. Cell depletion studies were performed to confirm whether the responses identified were due to CD8+ or CD4+ T cells. Epitope conservation was evaluated by comparing the amino acid residues to the sequences of CCHFV isolates available on GenBank.

Results: Sixteen novel T cell epitopes were identified predominantly on the nucleoprotein, with only a single subject reacting to two epitopes on the glycoprotein G_C . No single epitope was immunodominant, but all subjects showed reactivity to at least one T cell epitope. These responses were present at high frequency and detectable up to 13 years after the acute infection despite the absence of continued antigenic stimulation. Depletion studies confirmed that IFN- γ production was mediated chiefly by CD8+ cytotoxic T cells. Amino acid sequence conservation was high among southern African CCHFV isolates.

Conclusion: The novel epitopic regions identified in this study represent the first T cell epitopes to be described following natural infection with CCHFV. These findings provide confirmation of long-lived memory T cell responses in survivors which may be useful in vaccine development and evaluation of vaccine immunogenicity.

LR-17

Title: INSTALLATION PROCESS FOR A PHILIPS INGENIA 3 TESLA MAGNETIC RESONANCE IMAGING UNIT AT UNIVERSITAS ACADEMIC HOSPITAL

Authors: RK Segoenyane, WID Rae, A Conradie

Departments: Medical Physics

Presenter: Katlego Segoenyane

Introduction and Aim: Magnetic Resonance Imaging (MRI) uses strong magnetic fields and radio waves to produce cross-sectional images of patients. To achieve this, a large superconducting magnet, of mass approximately 4000 kg, is used to create a 1.5 Tesla (1.5T) or 3 Tesla (3T) magnetic field. Special precautions and planning are thus required during room design. The aim of this study is to review the installation process of the Philips Ingenia 3T MRI installed at Universitas Academic Hospital (UAH) in early 2015.

Materials and methods: Colour digital images were obtained during installation to record the process. Comparison was made between the Philips Ingenia 3T installation and the recent Siemens 1.5T Magnetom Aera MRI installation at Pelonomi Tertiary Hospital (PTH). Acceptance testing was performed based on the American College of Radiology phantom protocol. The influence of the 3T MRI scanner on the adjacent GE 1.5T MRI unit was investigated.

Results: Before installation, floor loading capacity was increased by the installation of T-bar support structures between the structural pillars. The walls were shielded using conductive cladding. The MRI unit was factory assembled and delivered intact. Installation included ramping the magnet and electrical installation. During installation, wraparound and zipper artefacts were identified on images acquired by the adjacent GE 1.5T unit, but were found to be unrelated to the 3T MRI. After installation, the unit passed acceptance testing. A metal detector was installed to ensure that no ferromagnetic objects enter the room.

Conclusion: Installation of the 3T MRI at UAH was similar to that of the 1.5T MRI at PTH. Artefacts on 1.5T images ceased after installation. Installation records should be retained as a reference for installation of 3T units at other hospitals.

LR-18

Title: N-ACETYLCYSTEINE IS NOT EFFECTIVE IN THE PREVENTION AND TREATMENT OF THE ACUTE EARLY EPISODES OF ACQUIRED TTP IN BABOONS

Authors: JP Roodt, WJ Janse van Rensburg, S Lamprecht, J Joubert, D van Jaarsveld, C Tersteeg, K Vanhoorelbeke.

Departments: Department of Haematology and Cell Biology, UFS, Department of Haematology, NHLS, Department of Internal Medicine, UFS, Laboratory for Thrombosis Research, KU Leuven, Experimental Facility, UFS

Presenter: Jan Roodt

Introduction and aim: Acquired thrombotic thrombocytopenic purpura (TTP) is a rare and life-threatening disorder. The disease is characterized by the deficient processing of ultra-large von Willebrand Factor (ULVWF) due to neutralization of ADAMTS13-activity. This leads to spontaneous platelet aggregation in the microvasculature responsible for the severe clinical consequences of TTP. Currently no drugs are available to treat this condition. We have previously shown that drugs that inhibit the binding of platelets to Von Willebrand factor (VWF) can be used to safely and efficiently to treat the symptoms of TTP. Recent reports claim that N-acetylcysteine (NAC), the active drug in some mucolytics and which is also used to treat paracetamol poisoning can be used to treat TTP. This study evaluated the efficacy of NAC to reverse TTP in a preclinical baboon model of acquired TTP.

Methodology: Acute episodes of TTP were induced by administration of an ADAMTS13-inhibiting monoclonal antibody (600ug/kg 3H9). Onset of disease was indicated by a rapid decrease in platelet count and haptoglobin as well as the appearance of schistocytes. 4 Animals received twelve hourly doses of 200mg/kg NAC only after TTP was confirmed starting on day 5 until day 11. Blood was drawn daily and platelet count, schistocyte counts and haptoglobin levels were determined.

Results: There was no effect on any of the parameters measured in this study.

Conclusion: NAC is not effective in the reversal of TTP in baboon models. NAC is a non-specific inhibitor of disulphide bonds. The proposed mechanism by which it can reverse the symptoms of TTP is by breaking down ULVWF into the normal smaller multimers by breaking the disulphide bonds. However, most of the molecules in plasma have disulphide bonds which can act as substrate for NAC and will also be broken down by NAC. ULVWF is probably heavily outnumbered by other molecules in plasma.

LR-19

Title: COMPARING DIFFERENT FETAL DOSE CALCULATION METHODS

Authors: HC van der Walt, C Herbst

Departments: Medical Physics

Presenter: Hester van der Walt

Introduction and aim: Administering any radiopharmaceutical to a pregnant patient may lead to radiation dose to the foetus. The aim of the study is to compare fetal doses calculated using the formal Medical Internal Radiation Dosimetry (MIRD) method, which does not take fetal uptake into consideration with the doses calculated using software that incorporates information regarding fetal uptake (FU).

Methodology: The doses received by the foetus and uterus were calculated for a 3, 6 and 9 month's pregnant patient. The studies analysed comprised of Tc-99m Methylene Di-Phosphonate (Bone study), Tc-99m Tin colloid (liver study), I-123, I-131, I-123 MIBG (Meta-iodobenzylguanidine) and I-131 MIBG. Doses were calculated by using in-house developed software (IHDS) and the Organ Level Internal Dose Assessment (OLINDA) code, which are both based on the MIRD method. This was compared with the fetal doses calculated by the software providing for fetal uptake (FU).

Results: The OLINDA code and the IHDS estimate results for the uterus were in good agreement. The biggest percentage difference between the two methods was 18.4% for the liver study at 6 months. The absolute dose difference was $2.39\mu\text{Sv}/\text{MBq}$ by the OLINDA code compared to $2.02\mu\text{Sv}/\text{MBq}$ by the IHDS. The dose values calculated by the FU software produced higher fetal doses. The biggest percentage difference between the IHDS and FU software was 95.23% for the I-131 study at 9 months. The absolute fetal dose difference was $0.27\text{mSv}/\text{MBq}$ by the FU software compared to $0.013\text{mSv}/\text{MBq}$ by the IHDS.

Conclusion: The differences indicate that it is important to include placental transfer, especially with β – emitters. In cases where the fetal dose needs to be calculated, biokinetic data which include information about placental transfer of radiopharmaceuticals should be used in calculations, leading to a more accurate and realistic dose to the foetus.

LR-20

Title: THE IN VITRO REFOLDING A HUMAN DERIVED SINGLE CHAIN VARIABLE FRAGMENT AGAINST TISSUE FACTOR

Authors: J Vermeulen, SM Meiring, FJ Burt, E van Heerden

Departments: Department of Haematology & Cell Biology, Virology and Biotechnology

Presenter: Jan-G Vermeulen

Introduction: Aberrant Tissue Factor expression has been associated with thrombosis. Previously a novel single chain variable fragment (scFv) against tissue factor was identified using the Thomlinson Human Single Fold scFv Libraries. Preliminary in vitro studies have shown that this antibody fragment directed against tissue factor extended prothrombin times and inhibit thrombin generation in a dose dependent manner. Although the initial findings were promising the further characterisation of the scFv was hampered by low protein yields.

Aim: To produce functional TFI-scFv using in vitro refolding techniques.

Methodology: Methods were optimized for the isolation and purification of TFI-scFv inclusion bodies from bacterial cytoplasm followed by the in vitro refolding of the isolated inclusion bodies order to produce functional TFI-scFv. Briefly, the original gene coding for the TFI-scFv was modified to direct expression to the bacterial cytoplasm. The TFI-scFv gene was condon optimised and cloned into pET22 over-express vector and expressed in E. coli BL 21 (DE3) as insoluble protein aggregates. The protein aggregates were isolated and denatured using 6M Guanidium-HCl. The denatured TFI-scFv was purified by means of nickel based immobilised metal affinity chromatography under denaturing conditions. The purified Tfi-scFv was refolded in vitro to produce functional antibodies. The functionality of the refolded TFI-scFv was confirmed using modified prothrombin times.

Results: The expression level of the TFI-scFv was improved through the use of codon optimised sequence. The redirection of the gene product to the cytoplasm of the expression host not only simplified the isolation of the insoluble TFI-scFv but also improved the purification by nickel based IMAC under denaturing conditions providing pure TFI-scFv for in vitro refolding. Although the refolding of TFI-scFv is complicated due to the presence of stabilising disulfide bonds the refolding matrix was able to produce soluble, functional antibody.

Conclusion: Suitable methods for the production, isolation, purification and refolding of denatured antibody to produce functional TFI-scFv were developed.

LR-21

Title: A COMPARISON OF THE ABILITY OF THREE COMMON CONTACT LENS SOLUTIONS WITH DIFFERENT CONSTITUENTS TO INHIBIT GROWTH OF STAPHYLOCOCCUS AUREUS

Authors: M Oberholzer, J Raubenheimer, M Lyell, S Pieterse, A Keyser, A Rautenbach, S van Rooyen

Departments: Optometry
Presenter: Marsha Oberholzer

Background: Staphylococcus aureus is a common commensal on skin and mucosal surfaces; its contact with the eye may cause a variety of ocular inflammations and infections such as blepharitis, conjunctivitis and keratitis, amongst others. Soft contact lenses provide perfect conditions for the breeding of certain pathogens, and disinfecting solutions for contact lenses are therefore of utmost importance. These solutions should be effective in inhibiting the growth of a variety of pathogens to protect the user from ocular infections.

Aim: To highlight the need for clinicians to be aware of the effects of various recommended disinfecting contact lens solutions.

Method: Three popular disinfecting contact lens solutions readily available in South Africa were chosen. These and a control solution (saline) were prepared and inoculated with S. aureus to evaluate the antimicrobial efficacy of each solution. The primary stand-alone test was used to evaluate the solutions according to the ISO standard specifically for this purpose.

Results: The test results indicated that two of the solutions met the ISO standards; the third failed. Of the two that passed the test, only one showed the required 3-log reduction after 30 minutes, as per the ISO standard, although this solution is marketed as a '10 minute system'.

Conclusion: It is important for clinicians to be aware of the complications that may be caused by contaminated solutions, and patients should be warned about the effects thereof. To ensure healthy eyes for our patients, sufficient knowledge regarding the efficacy of recommended multipurpose solutions is necessary. Solutions that meet ISO standards promote good ocular health and ensure sufficient cleaning and disinfecting of contact lenses.

LR-22

Title: IMPACT OF PROLONGED POST-MORTEM COLD ISCHAEMIC TIME ON LEAFLET CALCIFICATION ON THE JUVENILE SHEEP MODEL

Authors: FE Smit, D Bester, JJ vd Heever, R Correia, F Schlegel, L Botes, PM Dohmen

Departments: Cardiothoracic Surgery, UFS; Cardiovascular Surgery, Charite; Cardiac Surgery, Heart Center Leipzig, University of Leipzig

Presenter: Raul Correia

Introduction and aim: Availability of good quality pulmonary homografts for reconstruction of right ventricular outflow tracts (RVOT) in patients with congenital abnormalities is a global challenge. Extending cold ischaemic harvest time in cadaveric homograft programs might alleviate this problem, but structural integrity and performance should not be compromised. We investigated the effect of extending the post-mortem cold ischaemic harvest time on tissue integrity and leaflet calcification as indicators of immunological response.

Methodology: Pulmonary valves were harvested from juvenile sheep at 24h (Group 1; n=5), 48h (Group 2; n=5) and 72h (Group 3; n=5) post-mortem, and cryopreserved. RVOT reconstructions were performed on sheep with minimum implantation time of 180 days. Valves were evaluated echocardiographically before sacrifice, and a visual examination, histology, scanning electron microscopy (SEM) and quantitative calcium analysis were performed.

Results: Echocardiography demonstrated normal valve function with only trivial regurgitation in some valves. Mild calcification was visible in leaflets from one valve in Groups 1&2, and in three valves in Group 3, however calcification was visible in the homograft walls. No explants had macroscopic abnormalities. Extracellular matrix was well preserved in all valve leaflets, and interstitial cells were present in 3/5 explanted valves in group 1 versus 1/5 in group 2 and 3/5 in group 3, and were always accompanied by mononuclear cells. von Kossa staining showed calcification in only one valve in the 72h group. Confluent endothelial cells were demonstrated by SEM in 88% of valves in group 1 and in more than 60% of valves in groups 2 and 3. There was no statistical difference in quantitative calcium content between the explanted pulmonary leaflets.

Conclusion: By extending the post-mortem harvesting time, we demonstrate no significant difference for the parameters investigated in all three groups of cryopreserved pulmonary valves. This supports safely extending the post-mortem cold ischaemic harvesting time.

LR-23

Title: CHALLENGES AND LIMITATIONS ENCOUNTERED WITH MLPA OPTIMIZATION

Authors: J Oosthuizen, P Moeti, NC van der Merwe

Departments: Division of Human Genetics, UFS & NHLS, Bloemfontein

Presenter: Jaco Oosthuizen

Introduction and aim: Multiplex Ligation-dependent Probe Amplification (MLPA) is a high-throughput, rapid technique for the identification of relative copy number quantification. It is mainly used for the detection of larger rearrangements of one or more parts of a gene. The aim is to optimize MLPA for use on the diagnostic platform, for the screening of familial breast cancer patients for deletions or duplications within BRCA1 and BRCA2.

Methodology: The MLPA technique is based on the hybridization of probes to a targeted exon where after they are ligated. The ligated probes are amplified using PCR, where after fragment analysis is performed using capillary electrophoresis. The experimental design of the assay was performed according to the guidelines of MRC-Holland. Various experimental parameters such as DNA quality, quantity and signal intensity were optimized using positive and negative patients previously tested in Montreal Canada. For BRCA1 (P002-D1) and BRCA2 (P045-B3), both multiplex assays were validated and results were confirmed using a secondary probe set for each gene.

Results: DNA quality and quantity proved to be the critical factors during the assay optimization. The quantity influenced the relative copy number frequency directly whereas the quality of the DNA and its salt concentration influenced denaturation and DNA separation during fragment analysis. Thus, MLPA conditions are more sensitive to these factors than both conventional and qPCR. The analytical sensitivity and specificity have been proven. Optimization resulted in repeatable reactions with regards to the detection of relative copy number differences. It was proven that small deletions and single base pair changes do not affect the ability of this technique to distinguish exon copy number variations.

Conclusion: MLPA was successfully optimized as a copy number quantification technique for familial BC. This resulted in a complete comprehensive screening of these genes for mutational defects.

LR-24

Title: DIAGNOSTIC REFERENCE LEVELS FOR THE VASCULAR, SCREENING AND ADULT CARDIOLOGY UNITS AT UNIVERSITAS ACADEMIC HOSPITAL

Authors: F Makosa, A Conradie

Departments: Medical Physics

Presenter: Frank Makosa

Introduction and Aim: Fluoroscopy guided interventional techniques are known to potentially impart high radiation doses that are above the deterministic levels to the patients, mainly due to the complexity of procedures. The Directorate of Radiation Control (DRC) of the National Department of Health in South Africa gave a directive to all diagnostic radiology centres to establish diagnostic reference levels (DRL) in all fluoroscopy radiology modalities. The study sought to establish DRLs and set benchmarks for the annual quality assurance program to comply with requirements suggested by the DRC.

Methodology: Data was recorded for the period January 2014 to December 2014; dose area product (DAP) meter readings, cumulative dose at reference point ($K_{A,R}$), total fluoroscopic time (FT) and the radiologist /or cardiologist performing the procedure. To estimate the local facility DRL a 75th percentile of the DAP readings per procedure, $K_{A,R}$ and FT was calculated. These DRLs were compared to published data and these results communicated to the respective departments.

Results: The estimated local facility diagnostic reference levels (LDRL) of DAP values for the Interventional theatre were: Cerebral Angiography 143 Gy·cm², Cerebral Angiography and interventions 200 Gy·cm², Transfemoral outflow and Venogram 154 Gy·cm², Percutaneous transhepatic cholangiography 63 Gy·cm² and Permanent catheterization 6 Gy·cm². The Radiology Screening procedures; Endoscopic retrograde cholangiopancreatography 56 Gy·cm², Barium Enema 69 Gy·cm², Barium Meal 24 Gy·cm², and Barium Swallow 5 Gy·cm². The adult Cardiology DAP LDRL estimates obtained in this study was: Coronary Angiography 153 Gy·cm², Pacemakers 43 Gy·cm² and Transcatheter Aortic Valve Implantation 32 Gy·cm².

Conclusion: The study established the benchmark for radiation dose of the screening, vascular and adult cardiology theatres at UAH. The LDRL compared well with published data. The LDRL will be used in an annual quality control program to monitor patient dose levels.

LABORATORIUM PLAKKATE/ LABORATORY POSTERS

LPV-1

Title: A PERSPECTIVE ON GM DETECTION IN SOUTH AFRICA

Authors: CD Viljoen

Departments: Haematology and Cell Biology

Presenter: Chris Viljoen

Introduction and aim: Current levels of (genetically modified) GM production for maize is estimated at 85%, 92% for soybeans and 100% for cotton in South Africa. There is no official national laboratory for GM detection in South Africa and the government relies on companies to obtain GM status certificates from the GMO Testing Facility, University of the Free State. The aim of this study was to document the number of samples commercially processed by the GMO Testing Facility in 2014, in order to understand the challenges of performing GM detection in South Africa which is considered to be a major GM producing country.

Materials and Methods: Data for samples processed by the GMO Testing Facility in 2014 was stratified in terms of the type of sample (grain or processed), the number of GM positive samples, and the percentage GM content in samples.

Results: In 2014, the GMO Testing Facility processed a total of 898 samples. The majority of these samples (73%) were grain samples compared to processed samples (27%). It is interesting to note that 51% of grain samples were GM positive compared to 62% of processed samples. While the majority of grain samples tested below 1% GM (that includes samples below GM LOQ) and could be labelled as non-GM in South Africa, a considerable number of grain samples (26%) and processed samples (33%) had a GM content of above 5%.

Conclusions: The high percentage in GM content of samples tested by the GMO Testing Facility for GM status certification is evidence for a lack of effective non-GM segregation from GM products throughout the food chain. Furthermore, there is no clear guidance on the segregation of non-GM grain in South Africa and comingling with GM grain will result in varying levels of GM contamination in food products.

LPV-2

Title: ANDROGEN AND METABOLIC CHANGES AFTER ORCHIECTOMY

Authors: AJ Groenewald, SW Wentzel

Departments: Chemical Pathology and Urology

Presenter: Dries Groenewald

Introduction and aim: Bilateral orchiectomy is one of the procedures described to reduce serum testosterone (T), an androgen which stimulates the growth and proliferation of both normal- and malignant prostate cancer cells. Epidemiological studies have shown that low T concentrations are associated with obesity, insulin resistance and an adverse lipid profile in men. We aimed to measure the influence of post orchiectomy changes in serum androgen concentrations on markers for metabolic syndrome.

Methodology: In a descriptive study, fasting venous blood samples were obtained at intervals: baseline (at orchiectomy), 1 to 12 hours (every 3 hours) as well as after 1 to 4 weeks (weekly) post orchiectomy from 10 patients (mean age 73.45, ± 12.7 years) with prostate carcinoma and high serum prostate specific antigen (PSA) concentrations. Serum testosterone, free testosterone (FT), PSA, insulin, luteinizing hormone (LH), follicle stimulating hormone (FSH), testosterone, sex hormone binding globulin (SHBG), dehydroepiandrosterone sulfate (DHEA-S) and glucose concentrations were measured using standard laboratory techniques. Serum high molecular weight adiponectin (HMW-A) concentrations were measured on a DSX™ Automated ELISA system. Insulin resistance (IR) was estimated using the homeostasis model assessment for insulin resistance (HOMA-IR). Basal waist circumference and weight changes were compared to values taken after 4 weeks. Ninety five percent confidence intervals (95% CI) for median difference of paired data were calculated to measure the significance of differences between baseline and post orchiectomy results.

Results: Compared to baseline, serum concentrations of T, FT, PSA and DHEA-S decreased and LH, FSH, insulin and IR increased statistically significant at different times after orchiectomy. HMW-A was significantly decreased at 9 and 12 hours and then gradually increased. Serum glucose concentrations remained unchanged. Median weight and waist circumference increased by 3.5 kg and 5 cm respectively within 4 weeks.

Conclusion: Post orchiectomy hormonal changes resembles those found in metabolic syndrome.

LPV3

Title: SENSITIVITY OF THE PFA-100 TO WILLEBRAND DISEASE AND ASPIRIN INTAKE

Authors: C Conradie, FE Smit, L Botes, M Meiring

Departments: Haematology and Cell Biology and Cardiothoracic Surgery

Presenter: Charmaine Conradie

Introduction and aim: Von Willebrand disease (VWD) is the most common bleeding disorder in the world and the laboratory diagnosis is complex and time consuming. The PFA-100 instrument is thought to be sensitive to defects of the binding of von Willebrand factor (VWF) to platelets and collagen, since it measures VWF-platelet binding under high shear conditions as it occurs in-vivo. Furthermore, aspirin is the most common drug used to treat pain and inflammation. Patients on aspirin undergoing surgery have a higher risk for bleeding during surgical procedures. The PFA-100 is able to detect the effect of aspirin on platelets. With this study we aimed to determine the sensitivity of the PFA-100 to aspirin and VWD.

Methodology: The PFA-100 assay was done on 5ml citrated whole blood of 20 patients on aspirin, 20 persons not on aspirin and on 3 type 2 VWD and 3 type 1 VWD patients.

Results: All patients on aspirin showed an aspirin-effect on the PFA-100, while the persons not on aspirin had normal platelet functions on the instrument. Aspirin-effect on the PFA-100 showed a lengthened closure time with the collagen-EPI cartridge. All patients with VWD showed a lengthened closure time on both the collagen-EPI and the collagen-ADP cartridges.

Conclusion: The PFA-100 is very sensitive to aspirin and to VWD. It is thus useful to use this test for screening of patients with VWD and also for measuring the effect of aspirin on platelets before surgical procedures.

LPV-4

Title: EVALUATION OF AN AUTOMATED CHROMOGENIC FACTOR VIII ASSAY

Authors: J F Kloppers, WJ Janse van Rensburg

Departments: Haematology and Cell Biology

Presenter: Jean Kloppers

Introduction and aim: Haemophilia A is an X-linked recessive hereditary bleeding disorder, characterized by a deficiency in coagulation factor VIII (FVIII). The one-stage FVIII assay is the most widely used assay for the quantification of FVIII. Several disadvantages of the one-stage assay have been described. The two-stage and chromogenic FVIII assays purportedly overcome these disadvantages. The chromogenic method is an appealing option as it is easily automated, robust and minimally influenced by external factors. Therefore, our aim was to evaluate the chromogenic FVIII assay on the Sysmex CS 2100i coagulation instrument.

Materials and Methods: We compared the FVIII levels of healthy individuals and haemophilia A patients as determined by the automated one-stage and chromogenic FVIII assays on the Sysmex CS 2100i Automated Coagulation instrument, respectively. The effect of unfractionated heparin on the one-stage and chromogenic FVIII assays were also evaluated.

Results: FVIII levels differed significantly between the respective assays for the healthy individuals. The addition of heparin led to a decrease in FVIII levels detected by the one-stage assay, but had no effect on the chromogenic assay results. Neither of the assays could quantify the FVIII levels of severe haemophilia A patients. The chromogenic assay proved to be more accurate and precise when normal controls were evaluated.

Conclusion: The chromogenic FVIII assay was more accurate, precise and less influenced by external factors such as unfractionated heparin than the one-stage assay. Therefore, the chromogenic assay can be introduced in the diagnostic laboratory for accurate and precise monitoring of haemophilia A patients and other cases where FVIII needs to be monitored. The inability of both assays to quantify very low FVIII levels remains problematic. However, the one-stage FVIII assay can't be discarded as it had a lower detection limit and was more cost effective.

LPV-5

Title: NORMAL BIODISTRIBUTION OF ^{99m}Tc IN RABBITS AND BABOONS

Authors: J Horn-Lodewyk, SL Rossouw, AC Otto, JM Wagener, JR Zeevaart, GHJ Engelbrecht, AM Jooste

Departments: Department of Nuclear Medicine, Department of Cardiothoracic Surgery, Department of Animal, Wildlife

Presenter: Je'nine Horn-Lodewyk

Introduction and aim: The findings in this research have not been reported in the literature. This was an inadvertent observation in the control group from another study. This research reports normal biodistribution of $^{99m}\text{TcO}_4^-$ in rabbits compared to baboons (*Papio ursinus*).

Materials and methods: Whole-body imaging was performed 0.1-, 1- and 2 hour (h) post injection and SPECT/CT at 1- and 2 h. The biodistribution of $^{99m}\text{TcO}_4^-$ to the different organs was determined by drawing regions of interest (ROIs). ROIs were drawn on anterior and posterior images. Whole-body quantification was performed, taking into account background radiation and physical decay of $^{99m}\text{TcO}_4^-$.

Results: The biodistribution was similar in the two species in the following major organs/tissues: heart, salivary glands and the thyroid with excretion of the kidneys into the bladder. The mean (\pm SD) percentage biodistribution of $^{99m}\text{TcO}_4^-$ in the stomachs' of the rabbits was 1.59 ± 0.14 , 1.78 ± 0.15 and 1.54 ± 0.11 compared to the baboons 8.56 ± 1.57 , 13.86 ± 3.30 and 17.98 ± 1.54 at 0.1-, 1- and 2 h, respectively. The mean (\pm SD) percentage biodistribution of $^{99m}\text{TcO}_4^-$ in the livers' of rabbits was 8.85 ± 0.96 , 6.55 ± 0.71 and 6.17 ± 0.59 compared to the baboons 3.80 ± 0.45 , 2.62 ± 0.40 and 2.04 ± 0.40 for the different time intervals.

Conclusion: $^{99m}\text{TcO}_4^-$ biodistribution in baboons followed the patterns described in the literature for humans. The greatest differences in the biodistribution of $^{99m}\text{TcO}_4^-$ between the rabbits and the baboons were found in the liver and stomach. This research emphasises the importance of careful consideration when selecting animal species for radiopharmaceutical testing. Physiological and anatomical differences between species may influence results that would otherwise provide relevant information in predicting human physiology and biochemistry.

LPV-6

Title: ASSESSMENT OF VON WILLEBAND FACTOR STATUS OF PATIENTS UNDERGOING RENAL BIOPSY

Authors: R Maleka, D Jafta, L Pretorius, M Meiring

Departments: Haematology and Cell Biology

Presenter: Rethabile Maleka

Introduction and aim: Impaired renal function is a frequent condition and cardio-vascular disease is common in these patients. It is also a complex clinical entity and involves hormonal, metabolic and haemostatic changes. The haemostatic changes are however not elucidated yet. This study investigates the hypercoagulable state and von Willebrand factor status associated with kidney disease as well as the effect of renal impairment on platelet function.

Methodology: We assessed global haemostasis of 100 patients with renal failure by using thrombo-elastography. Platelet function was assessed using the platelet function analyzer (PFA-100). VWF levels and ADAMTS13 levels were measured in plasma by using enzyme-linked immune assays (ELISAs).

Results: Sixty percent of patients showed hypercoagulability on TEG profiles. Five percent showed secondary fibrinolysis, while 35% had normal TEG profiles. Platelet function was impaired in 55% of patients while aspirin was the cause in 30% of these patients. The VWF levels were severely increased with a mean and standard deviation of $260\pm 129\%$. ADAMTS13 levels on the other hand were slightly decreased with a mean and standard deviation of $44\pm 16\%$. A slight inverse relationship existed between the VWF and ADAMTS13 levels.

Conclusion: There is no doubt that VWF do play an important role in the hypercoagulable state of these patients and ADAMTS13 and VWF levels are useful indicators of thrombosis in these patients. The reduced platelet function in these patients is mostly due to aspirin-intake. Furthermore, TEG may aid in thrombosis risk stratification and determining the subsequent need for anti-coagulant prophylaxis in patients with kidney disease.

ONDERWYSKUNDIGE REFERATE/ EDUCATIONAL PAPERS

OR-1

Title: FACTORS INFLUENCING ACADEMIC SUCCESS OF FIRST YEAR OCCUPATIONAL THERAPY STUDENTS AT THE UNIVERSITY OF THE FREE STATE

Authors: A Swanepoel, SM van Heerden, JF Strydom

Departments: Occupational Therapy, Center for Teaching and Learning

Presenter: Azette Swanepoel

Introduction: The Occupational Therapy program at the University of the Free State is academically and emotionally challenging. Prospective students who wish to study occupational therapy are selected primarily on their academic abilities in high school or in other programs in higher education institutions. However, once entering higher education some students seem unable to meet the demands of the program while others deliver consistent academic achievements. The question arose as to which factors influence the first year occupational therapy students' academic success.

Aim of the study: The aim of the study was to explore the factors that influence academic success among first year occupational therapy students at the University of the Free State.

Methodology: Eighteen first year occupational therapy students, with no prior higher education experience, were randomly selected to take part in the study. A qualitative approach with a collective, multiple case study research design was used during the execution of the study. Data was collected from documentation and Nominal Group Technique discussions. A thematic analysis was used to analyse the data.

Findings and conclusion: The factors identified as influential to academic success should be viewed holistically as they are all interrelated thus, indicating the importance of acknowledging more than academic factors influence academic success in higher education. Academic-, social -, cultural-, physical -, cognitive - and psychological factors were identified as influencing academic success of first year occupational therapy students. This study succeeded in identifying and describing possible factors influencing academic success of the first year occupational therapy student. The finding furthermore correlate with literature.

OR-2

Title: "THE CHARACTER RESTS HEAVILY WITHIN ME": DRAMA STUDENTS AS PSYCHIATRIC STANDARDISED PATIENTS

Authors: AC Jacobs, DE van Jaarsveldt

Departments: School of Nursing and Centre for Teaching and Learning

Presenter: Mandie Jacobs

Introduction and aim: The believable and accurate portrayal of a psychiatric patient during standardised patient (SP) simulation is complex. Though vital to the creation of an authentic learning experience, the unique contribution of the SPs is not well described in literature. The purpose of the study was therefore to explore and describe the experiences of the drama students engaged in psychiatric simulation at the School of Nursing.

Methodology: A qualitative approach was taken by employing an explorative and descriptive design. In this presentation, the experiences of 11 drama students engaged in psychiatric simulation for nursing students are explored. Data were gathered directly after a simulation session by the use of a structured group interview and an in-depth individual interview with the coordinator of the drama students. A qualitative survey was also conducted after two consecutive simulation sessions.

Results: Content analysis revealed that these SPs negotiate three roles during this interdisciplinary learning experience, that of: a facilitator of learning, a drama student and the person within.

Conclusion: The study provided valuable insight into the world of an SP for the enrichment of future simulated practice learning endeavours. The reciprocity of the learning experience, not only for the students, but also for the nurse educators involved in the process, was confirmed. Whilst drama students learn about authentic character portrayal and improvisation, the personal investment required raises critical questions to nurse educators about the responsible and ethical provision of learning support for them. Interdisciplinary learning opportunities such as these should continuously be explored to enhance professional identity development and for students to learn to value and respect the authenticity of others.

OR-3

Title: PERCEPTIONS OF PATIENTS REGARDING DIABETES RELATED HEALTH COMMUNICATION STRATEGIES IN THE FREE STATE, SOUTH AFRICA

Authors: CN Nyoni, M Reid

Departments: School of Nursing

Presenter: Champion Nyoni

Introduction & aim: Patients with diabetes are expected to manage their own condition throughout their lives. Self - management is enabled through health information presented using health communication strategies. Various health communication strategies related to diabetes health information are used within the Free State. Perceptions regarding health communication strategies affect adherence to disease management strategies and health outcomes. The study explored the perceptions of patients with diabetes regarding health communication strategies.

Methods: A descriptive, exploratory, qualitative design through a phenomenological approach was used. Semi - structured interviews were conducted in Community Health Centres and Primary Health Care clinics among patients with diabetes (N=34) within the Free State. Data was analysed integrating Atlas.ti and Creswell's steps of qualitative data analysis.

Results: Two themes emerged; Guidance and Self- management. The theme Guidance was divided into five categories; motive, content, source, technique and evaluation. The theme Self- management was divided into two categories; influencing factors and lifestyle modifications. The category influencing factors was divided into two sub-categories; intrapersonal factors and interpersonal factors while the category lifestyle modification was divided into two sub-categories; nutrition and outcomes. Recommendations made were based on the findings of the study.

Conclusion: Patients with diabetes appreciated the role of health communication strategies. Such perceptions will inform the development of a health dialogue model for patients with diabetes in the Free State.

OR-4

Title: PEER PROTOCOL REVIEW BY SECOND YEAR MEDICAL STUDENT RESEARCH GROUPS: VARIED OR MISSED LEARNING OPPORTUNITIES?

Authors: G Joubert, WJ Steinberg

Departments: Biostatistics, Family Medicine

Presenter: Gina Joubert

Introduction and aim: In research modules students can acquire and practice a variety of skills. In this presentation we describe our experience of introducing peer evaluation of student protocols into the undergraduate medical research modules.

Methods: This descriptive study with an analytical component has qualitative and quantitative elements. In 2015 all second year UFS medical student project groups (n=27) were requested to submit their draft protocol to another second year project group for evaluation, before submission to the module leader for feedback. After the module leader's feedback session each project group was interviewed regarding the process and value of the peer protocol evaluation.

Results: Two thirds of the 27 groups asked another project group to evaluate their protocol. Most of the 9 groups who did not do so gave lack of time as reason. Of the 18 groups who had their protocols peer evaluated, 56% felt that it had no value, whereas 44% felt that it had value, in particular identifying practical and technical issues. Students' suggestions for improvement of the process included providing a peer review form and deadlines. By the time of the feedback sessions a third of the groups had evaluated the protocol of another group. Three of these groups felt that they could contribute little to the other group's protocol whereas the other six groups indicated that the peer review was of value to them in preparation of their own protocol.

Conclusion: Student groups experienced the process and value of peer protocol evaluation differently, possibly in part due to varying levels of insight and reflection. The important question raised for the module leaders is to which extent the process should be formalized by the module leaders, since time management, organization and self- directed learning are also skills which students need to develop.

OR-5

Title: IMPROVING POSTGRADUATE RADIOLOGY TRAINING AT THE UNIVERSITY OF THE FREE STATE: RESEARCH-BASED PROPOSALS.

Authors: J Janse van Rensburg

Departments: Clinical Imaging Sciences

Presenter: Jacques Janse van Rensburg

Introduction: Recent times have witnessed a shift in the educational philosophy of postgraduate radiology training programmes. Internationally, curricula have undergone revision, with many changes based on the principles of outcomes-based education. As such, these curricula prescribe learning outcomes and essential competencies – including generic competencies central to all competent physicians (CanMEDS framework). Continuous assessment is commonplace and many curricula prescribe regular formal formative workplace-based assessments that contribute to learning and training. This study is based on the premise that it is the responsibility of a postgraduate radiology training programme to ensure the competence of radiology graduates. Therefore, the purpose of this study is the improvement of postgraduate diagnostic radiology training at the University of the Free State (UFS) in an attempt to ensure the quality and competence of its graduates.

Aim of the research: To review the current UFS postgraduate radiology curriculum and develop a suitable structured competency-based, continuous assessment programme.

Methodology: The conceptualisation and contextualisation of postgraduate radiology education was accomplished through a literature overview that garnered information on the concepts of competence and performance-based education, as well as essential concepts related to assessment in education. A Delphi questionnaire survey was used to solicit consensus opinion from a panel of experts about the knowledge, skills and behavioural aspects of a radiodiagnosis curriculum, which in turn informed suggestions about changes to the current UFS curriculum and helped define certain outcomes. Semi-structured interviews, centred around important aspects relating to workplace-based continuous assessment in postgraduate radiology, were held with pivotal role-players involved in South African postgraduate radiology education. Qualitative analysis of these discussions informed decisions about a proposed continuous assessment programme for postgraduate radiology training at the UFS.

Findings & conclusion: This study culminated in the development of a performance-based continuous assessment programme – consisting of regular formative workplace-based assessments conducted both informally and formally – meant to not only assess, but also contribute, to student learning. The assessment programme is furthermore blueprinted on a revised postgraduate radiology curriculum, which identifies and describes radiology-appropriate learning outcomes and competencies according to different levels of training.

OR-6

Title: A COMPARISON OF RUBRIC SCORING METHODS

Authors: JE Raubenheimer

Departments: Biostatistics

Presenter: Jacques Raubenheimer

Introduction and aim: Rubrics are a common evaluation method for oral presentations. Most literature on rubrics discusses rubric application. The scant rubric meta-literature that discusses how rubrics should be constructed and used generally covers:

- a) How rubric items should be constructed
- b) The topic of inter-rater agreement
- c) Which contexts are suitable for using rubrics

One topic that is seldom discussed is the actual values used for scoring rubrics, i.e., the scoring scale, and how this scale should be weighted. Even the few examples found always assume that the rubric will use a limited number of categorical scale points.

This study investigated the issue of rubric scoring, not rubric item content or context, specifically whether, given the same items, better inter-rater reliability was obtained by substituting a percentage based scoring system instead of a rating-scale rubric scoring system.

Methodology: Third year students from four departments of the School of Allied Health Sciences, UFS were asked to participate in a descriptive cross-sectional study at the 4th year research presentations. Those consenting (n=111) rated the presentations using the departmental rubric, randomly assigned as using either a categorical- or percentage-based scoring system.

The inter-rater reliabilities of the two scoring systems were compared by calculating the intraclass correlation and the coefficient of concordance.

Results: For two rubrics, the categorical scale showed better interrater reliability than the percentage-based scale, but the reverse held true, and with greater margins, for the remaining two.

Conclusion: Shifting to a percentage-based scoring system for rubrics may have promise, but more research is needed to understand why the categorical system sometimes outperforms the percentage system, and how this can be rectified.

OR-7

Title: WHAT DOES THE “GOOD LECTURER” IN 21ST CENTURY HEALTH SCIENCES EDUCATION LOOK LIKE?

Authors: LJ van der Merwe, GJ van Zyl, MM Nel

Departments: Undergraduate Medical Programme Management and Office of the Dean, Faculty of Health Sciences, UFS

Presenter: Lynette van der Merwe

Introduction And Purpose: Lecturers in Health Sciences Education must model the ethical, caring and reflexive behaviour required from students (Leibowitz et al., 2010), displaying authenticity (Barnett, 2008). Attention should be paid to the emotional and cognitive aspects of learning affecting both students' and lecturers' motivation to achieve educational outcomes. Lecturers must be equipped for their demanding and complex role in 21st century higher education. This paper reports on the findings regarding core attributes lecturers should display to address the educational needs of current undergraduate students who belong to Generation Y (born 1981 – 2000).

Method: As the sequential explanatory phase of this study using mixed methods research design, a focus group interview was used to expand on the findings from questionnaire surveys. Purposive sampling identified ten participants based on their educational expertise in the Faculty of Health Sciences. Content analysis was done by means of the consolidated criteria for reporting qualitative research (Tong et al., 2007). Data from the final transcript (audio recording and contextual field notes) were coded, and major themes identified based on key concepts, thematic categories and codes used in qualitative data analysis of open questions in the questionnaire survey. Ethics approval was obtained (ETOVS 205/09).

Results: The qualities of the lecturer are vital aspects to the educational approach for Generation Y students in health sciences. Distinct personal characteristics and expertise emerged as major themes including: communication skills; role-modelling/mentoring; feedback; a positive attitude and reflective professional practice. The lecturer should also display both content knowledge and teaching skill, based on the practical implementation of pedagogical theory.

Conclusion: The significance of the lecturer-student relationship was underlined by the qualitative findings, highlighting the lecturer's personal qualities and teaching expertise. Successful teaching and learning for the unique needs of 21st century health sciences students is enhanced by the lecturer's core attributes and attitude.

OR-8

Title: HEALTH DIALOGUE: A CONCEPT ANALYSIS

Authors: M Reid

Departments: School of Nursing

Presenter: Marianne Reid

Introduction: Health dialogue, a component of health communication, encompasses strategies to inform and influence individual and community decisions in ways that improve health. In order to improve health it is necessary to develop a definition for health dialogue with a sound theoretical base, simultaneously promoting consistency in using the concept and understanding the underlying defining characteristics of the concept.

Aim: To present a concept analysis of health dialogue

Methodology: Using Walker and Avant's (2011) steps in concept analysis, a multi-stage search strategy of literature from 2000-2013 was conducted. Dictionaries (N=792 identified; n=143 used) from the Credo Reference data basis assisted to complete a search string, with abstracts (N=1570 identified; n=1154 used) and resultant articles (N=324 identified; n=147 used) from EBSCOhost interface. Search words included the concepts stated as "health" and "dialogue" independently and in relation to one another.

Results: The defining characteristics of health dialogue include: 1) an equal, symbiotic health relationship between the patient and health provider and 2) reciprocal health communication towards reaching an identified health goal via a health message. Antecedents of health dialogue are that patient and health provider should 1) present with a positive attitude towards health dialogue; 2) be sensitive for cultural, contextual and societal factors; and 3) receive training on health matters and communication skills. The consequence of health dialogue is an improved health outcome. Empirical referents of the concept consist of 1) sharing an understanding of responsibility/decision making, 2) establishing a health plan, 3) applying context sensitive health communication strategies, and 4) declaring mutual beneficence received from the health relationship.

Conclusion: Concept analysis of health dialogue serves to clarify the concept within theory development and research. The defined characteristics of health dialogue further assist health providers with ways to measure the concept in their work environment and so encourage health communication.

OR-9

Title: THE APPLICATION OF THE DELPHI IN A COLLABORATIVE AUTOETHNOGRAPHIC STUDY

Authors: MJ Swart, JA van den Berg, GJ van Zyl

Departments: HSE; Dean Health Sciences; Practical Theology

Presenter: Marius Swart

Objective: Cardiac surgeons should have many skills. But, what could be the spiritual experience of a cardiac surgeon? In a narrative reflection on negative outcomes after coronary artery bypass graft surgery (CABG) this question was asked and spiritually experienced in a qualitative, auto ethnographic research project. Other cardiac surgeons were involved in a shared spirituality by using the Delphi.

Methods: Fellow cardiac surgeons were approached through a local society of cardiothoracic surgeons. Eleven open-ended, qualitative questions were circulated via email. The responses were integrated by the author and re-circulated, maintaining quasi-anonymity.

Results: Fifteen surgeons from a potential 85 members responded. Seven surgeons completed the process with the author. During the third round the surgeons had nothing more to add. From this Delphi-process it was clear that other surgeons reflect too on their surgical outcomes. Negative outcomes after CABG have an oppressing influence within the different relationships of the surgeon. Their believe in God was consoling for the surgeons. The researcher discovers several images of God in the fellow surgeons' responses. These images can be grouped as familiar and comforting; images that have theological implications; and finally images that are important for the author's own spiritual experience of negative CABG outcomes.

Conclusions: Fellow cardiac surgeons, through the Delphi-method as part of collaborative autoethnography, contributed to the lived spirituality of the author.

OR-10

Title: INTERNSHIP EXPERIENCE OF MEDICAL INTERNS IN THE FREE STATE PROVINCE

Authors: N Mofolo, TD Moji

Departments: Family Medicine

Presenter: Nathaniel Mofolo

Introduction: It is a worldwide practice to have supervised training for newly qualified medical doctors before they register as medical practitioners. Internship training refers to the period of training in an accredited facility i.e. hospital, clinic, health centre or complex of facilities. Internship training in South Africa is 24 months for newly qualified doctors..

Aim: To evaluate the experience of newly qualified medical doctors enrolled in a 2 year internship programme in the Free State, focusing on working conditions and changes in their future plans.

Methodology: This study was a cross sectional study. Questionnaires were distributed to all consenting interns from the Free State Province completing their second year during 2013 and 2014. Sections included in the questionnaire are (1) Demographic data, (2) Review of experiences during internship, (3) Future plans as influenced by the interns experience of the last 2 years and (4) Suggestions for working as an intern in the Free State. A biostatistician assisted with the analysis of the data.

Results: A total of 80 second year internship doctors (out of 111) from 4 facilities completed the questionnaire. The majority (87%) indicated that they believe internship prepared them well for community service and 65% were positive about the supervision they received. However, only 53% felt that they were properly orientated in the beginning. Seventy percent (70%) of the participating internship doctors acknowledged that being on internship changed their career plans.

Conclusions: Overall, Internship doctors felt positively about their experiences at their allocated institutions and acknowledged they were better prepared for their careers. Although they were pleased with their supervision, they felt they could have been better orientated in the beginning of the internship training. From this study it can be concluded that Internship has a big influence on career plans of doctors.

OR-11

Title: CHANGING STANDARD SETTING BELIEFS AND BEHAVIOURS IN POSTGRADUATE CERTIFICATION EXAMINATIONS – CAN IT BE DONE?

Authors: FHS Schoeman, V Burch, MM Nel

Departments: Internal medicine (UFS), Medicine (UCT), Div of HPE (UFS)

Presenter: Scarpa Schoeman

Introduction and aim: While setting pass standards for examinations is a critical component of assessment, finding feasible and sustainable methods in a resource-constrained context is challenging. Until recently the Colleges of Medicine of South Africa (CMSA), the national specialist licensing examination body, used a fixed pass mark of 50%. This practice fails to acknowledge variances in examination difficulty and the risk of failing competent candidates/ passing incompetent examinees. In 2011, the College of Physicians (CoP), a large CMSA member College, introduced standard setting for the written components of their examinations. The aim of this study was to evaluate changes in the knowledge, attitudes, views and perspectives of CoP examiners regarding standard setting during the study period.

Methodology: An online Likert-type questionnaire survey was used to determine any changes before and after training and 30 months of practical experience using the Cohen and Angoff methods of standard setting. All CoP examiners were invited to participate (n=54), and the response rate was over 70%.

Results: 33 of 54 CoP examiners (61%), with extensive examination experience, participated in both rounds of the survey. By February 2013, when the first survey was done, examiners had 18 months of experience using standard setting and 71% were in favour of the process, specifically the Cohen method. Between February 2013 and the final survey in February 2014, ongoing uncertainties and concerns were addressed during a seminar on standard setting, which further increased the proportion of adopters of standard setting using the Cohen method from 71% to 83%.

Conclusion: Standard setting has been successfully introduced in the CoP. Key factors responsible for the success of this change process included (i) knowledgeable and trusted “champions” driving the process, (ii) customised training targeting specific concerns, and (iii) practical experience using standard setting methods, which helped inform examiners’ opinions about, and understanding of, standard setting in a resource-constrained setting.

OR-12

Title: COMPARING THE PERFORMANCE AND UTILITY OF THE COHEN AND ANGOFF STANDARD SETTING METHODS IN HIGH-STAKES POSTGRADUATE ASSESSMENT

Authors: FHS Schoeman, V Burch, MM Nel

Departments: Internal medicine (UFS), Medicine (UCT), Division of HSE (UFS)

Presenter: Scarpa Schoeman

Introduction and aim: The Colleges of Medicine of South Africa (CMSA), the national specialist licensing examination body in South Africa, uses a fixed pass mark of 50%. In 2011, the College of Physicians (CoP), a large CMSA member College, implemented a standard setting process for the written components of their certification examinations, to improve the defensibility and fairness of its assessments. The aim of this study was to compare the performance and utility of the Cohen and Angoff methods, as used in the CoP, with a view to make a recommendation regarding the standard setting strategy of the CoP going forward.

Methodology: A comparative, quantitative study evaluated the performance (pass marks and failure rates) and utility (framework derived from the literature review) of the Cohen and Angoff methods using five cycles of written examination data, including multiple-choice questions (MCQ), short-answer questions and short-essay questions.

Results: The Cohen method performed well when used for test data with a reasonable number of test items (30+) in homogeneous exit-level cohorts of more than 50 candidates, however its performance was variable for smaller cohorts (< 100) of candidates drawn from heterogeneous populations, such as entry-level Part I MCQ examinees. The Angoff method yielded unacceptable outcomes regardless of test format. The utility comparison identified the Cohen method as the preferred standard setting method for the CoP.

Conclusion: The findings of this study support the introduction and ongoing use of the Cohen method as a feasible and sustainable method of setting pass marks for the written components of the CoP certification examinations. More data are needed to evaluate the true impact of cohort size on the stability of the Cohen method for entry-level, heterogeneous cohorts of examinees. The purist Angoff strategy, used in this study due to resource limitations, performed poorly and was deemed ‘not fit for purpose’ by the CoP examiners.

Title: TRAINING OF INTERPROFESSIONAL FACILITATORS

Authors: Y Botma, M Labuschagne

Departments: School of Nursing & School of Medicine

Presenter: Yvonne Botma

Introduction and background: Health professions educators and clinicians are unfamiliar with the underpinning principles and philosophies of interprofessional education and collaborative practice. A faculty of health sciences, training students in 7 professions, initiated interprofessional education (IPE) through simulation with standardised patients for the first time in 2014. IPE happens when participants learn with, from and about each other. During 2014 the IPE sessions were primarily in a developmental and piloting phase. Interprofessional facilitators (IPFs) met informally 15 minutes before a contact session to discuss the learning activities planned for the session. Since then a formal training session was developed and implemented in 2015.

Purpose: The aim of the study was to describe the perceptions of interprofessional facilitators regarding knowledge gained during a training session and the perceived challenges regarding facilitation of interprofessional groups.

Methodology: Sixteen respondents completed a questionnaire that consisted of open and closed ended questions on completion of the formal training session. Frequencies and percentages were calculated for closed questions and the narrative data were open coded by both researchers.

Results: There was unanimous agreement that IPFs should be trained because the dynamics of interprofessional groups within health professions in South Africa has historically been challenging. Furthermore they valued the insight into the principles of interprofessional education and the drivers behind the initiative. Furthermore participants realised the extent of the logistical arrangements and the role people's attitudes play. The composition of the interprofessional groups as well as the skill of the facilitator contributes to the success of the intervention.

Recommendations: The recommendation from this small study is that IPFs should be trained with emphasis on the group dynamics and specific challenges of facilitating interprofessional groups. Supportive strategies such as co-facilitation or debriefing should be introduced.

ONDERWYSKUNDIGE PLAKKATE/ EDUCATIONAL POSTERS

OPV1

Title: ANATOMY COMPETENCE: IS THE GOAL SCORED?

Authors: D Raubenheimer, S van Zyl, JE Raubenheimer

Departments: Department of Basic Medical Sciences; Department of Biostatistics

Presenter: Daleen Raubenheimer

Introduction and aim: Recent changes in higher education towards outcomes-based education have led to a focus on competent learners, but a widely accepted definition of competence is still lacking. Although the importance of Anatomy in health professions education has been recognised, and different approaches to teaching and assessing Anatomy have been explored, no means of ensuring anatomical competence of students has been established. The purpose of this study was to suggest an Anatomy competence score, based on the findings of assessments in the medical learning programme at the University of the Free State, South Africa.

Methodology: A retrospective descriptive study was conducted. All assessments within the dissection programme of two groups of medical students (July 2012 to June 2013 and July 2013 to June 2014) were explored to determine the extent of testing Knowledge, Skill and Application in context (the three domains of competence established for this study). Descriptive statistics were calculated to compare the representation of the three domains and Cronbach's Alpha coefficients were computed to evaluate the reliabilities of testing the three domains in the various assessments.

Results: Overall, Knowledge had the largest representation in the assessments, and the representation of Skill and Application was almost equal. With a few exceptions, the Knowledge domain also had the biggest representation in assessment of the different body regions.

Conclusion: This study suggests a ratio of 2:1:1 between Knowledge, Skill and Application, respectively, as appropriate assessment of anatomical competence. However, this ratio depends on the type of assessment, the stage of the Anatomy course (e.g., more knowledge testing earlier) and the institutional context, but it could provide a guideline for anatomists when planning assessments.

OPV-2

Title: THE LONG-TERM EFFECTS OF TRAINING INTERVENTIONS ON TRANSFUSION PRACTICE: A FOLLOW-UP AUDIT OF RED CELL CONCENTRATE UTILISATION

Authors: J Joubert, S Joubert, J Raubenheimer, VJ Louw

Departments: Haematology and Cell Biology, Internal Medicine, Biostatistics

Presenter: Jaco Joubert

Introduction and aim: In patients with chronic anaemia, most guidelines recommend that the decision to transfuse be guided by haemoglobin concentration as well as symptoms of anaemia. This forms the basis of transfusion protocols at Kimberley Hospital Complex (KHC). Training interventions are frequently used in an attempt to improve transfusion practices. Such interventions have also led to significant improvements in transfusion practice at KHC, as found during a 2010 prospective clinical audit testing a training intervention. This current audit assesses whether red cell concentrate is transfused according to guidelines, and evaluates the impact of training interventions, compared with the 2010 audit.

Methodology: Retrospectively, 25 transfusion episodes were audited for appropriateness, the investigation of anaemia, threshold achievement, wastage, and informed consent. After training interventions, a further 25 episodes were prospectively analysed.

Results: Current practice at KHC appears to be generally consistent with guidelines. The effects of current training interventions were not shown to have a statistically significant impact. Compared to the 2010 audit, however, a statistically significant improvement was demonstrated in transfusion practice

Conclusion: Current practice at KHC appears to be generally consistent with guidelines. The immediate impact of training during the current audit appeared limited, probably because standards at KHC were already high. The improvements evident since the 2010 audit, however, suggest that training interventions may lead to durable long-term improvements in transfusion practice.

OPV-3

Title: PREVENTING LECTURALGIA BY USING MIXED LEARNING STRATEGIES WHEN TEACHING UNDERGRADUATE MEDICAL STUDENTS

Authors: JA Coetser

Departments: Internal Medicine

Presenter: Hannes Coetser

Introduction and aim: Lecturalgia, a term coined by McLaughlin & Mandin from the University of Calgary, Canada, refers to a painful lecture experience. Earlier feedback from junior medical students at the University of the Free State, South Africa, regarding an introductory clinical skills module, stated lack of organization, lengthy lectures and unnecessary detail as the sources of their painful experiences. In an attempt to prevent lecturalgia, recommendations from Calgary were combined with innovative active learning strategies, including games, audio-visual aids and role-play, to develop a teaching session on cardiovascular history-taking skills.

Methodology: In 2013, 3rd year students (n=115) received an introductory tutorial on cardiovascular history-taking. They were then allocated to six groups, each group attending the newly developed three-hour practical teaching session. Students evaluated this intervention using a questionnaire containing a Likert rating scale and open-ended questions.

Results: The questionnaire response rate was 94%. Students agreed that the purpose of the session was made clear (99%), the content was appropriate for the length of the session (100%), material was organized well (100%), the lecturer had a good relationship with the group (100%), interest was stimulated and maintained (99%), participation was stimulated (99%), and that the session's main points were summarized effectively (95%). Suggestions to improve the session included incorporating additional visual aids, i.e. pictures, videos and real patients.

Conclusion: Students' acceptability of a teaching format with mixed learning strategies was high. The approach by McLaughlin & Mandin to retrospectively diagnose and resolve lecturalgia is useful in the prospective planning of pain-free teaching sessions.

OPV-4

Title: CORE CURRICULUM GUIDELINESS FOR AN UNDERGRADUATE NUCLEAR MEDICINE MODULE IN THE MBChB PROGRAMMES IN SOUTH AFRICA

Authors: M G Nel, J Bezuidenhout, S Brüssow

Departments: Nuclear Medicine, Health Professions Education, Directorate for Institutional Research and Academic Planning (DIRAP)

Presenter: Riana Nel

Introduction and aim: The local Nuclear Medicine Department at the University of Free State experienced problems when patients were referred for nuclear medicine procedures at the Universitas Academic Health Complex, by newly qualified doctors. Lack of basic knowledge, skills, and wrong perceptions regarding nuclear medicine were exposed that can only be solved if undergraduate medical nuclear medicine education is improved according to national and international standards. The research question that emanated was:

- What will the guidelines be for an undergraduate nuclear medicine educational module in the MBChB programmes in South Africa?

To provide such guideliness several sub-questions relating to such an educational module needed answering, including:

- HOW should the module be incorporated into the existing MBChB programmes?
- WHEN will be the most effective time to introduce such a basic module?
- WHICH topics or subjects will be appropriate?
- WHAT should the extent of the contents for each subject or topic be?
- By WHOM should it be taught?
- WHICH teaching and learning and assessment strategies and methods should be used?

Methodology: A literature perspective gave an indication of current national and international trends in undergraduate medical nuclear medicine education. Standardised fixed primary data was acquired from relevant South African nuclear medicine practitioners making use of semi-structured survey questionnaires with quantitative and qualitative components to answer the research sub-questions.

Results: Core curriculum guidelines that could serve as a benchmark for undergraduate nuclear medicine modules in MBChB programmes, were developed from acquired data and participant viewpoints to the research sub-questions.

Conclusion: The researcher acknowledges that circumstances at South African Universities and Schools of Medicine differ significantly and it is therefore recommended that each Medical School should adhere as closely as possible to the core curriculum guidelines taking into account individual needs and abilities of each academic Nuclear Medicine Department.

Title: ESTABLISHMENT OF AN INTERPROFESSIONAL HEALTHCARE TEAM: EVIDENCE OF STUDENT LEARNING

Authors: MJ Labuschagne, Y Botma

Departments: School of Medicine and School of Nursing

Presenter: Mathys Labuschagne

Introduction and aim: Students in the healthcare professions have to develop the ability to work collaboratively with other disciplines. Interprofessional relationships should not be left to chance; but form an integral part of the curriculum. In the Faculty of Health Sciences, four two hour interprofessional sessions were presented where students from seven professions were exposed to theoretical and practical simulation interprofessional sessions. Students had to apply the principles of collaborative practice and compile an interprofessional plan on how to establish a collaborative team by means of a creative representation. The aim of the study was to determine the students' conceptual grasp of collaborative practice.

Methodology: Each interprofessional student group was tasked to create a visual representation of how they would go about establishing a collaborative healthcare team. These representations were qualitatively evaluated against a checklist to appreciate the students' understanding of the principles of collaborative practice.

Results: The visual representations were evaluated to determine if the principles of collaborative practice, communication, shared leadership and shared power were represented. All the projects outlined a process from fragmented to improved healthcare systems and the majority of projects indicated the CanMeds principles of collaboration, communication and professionalism. Shared power and decision making featured strongly in most of the projects. These visual representations depict mechanical devices e.g. bicycle, windmill; figures of a man or body; people holding hands; growth e.g. flower, tree; games e.g. paper jet, paper fortune teller; processes included images of circles and arrows. By itself, these images portray the students' understanding of collaborative practice.

Conclusion: The principles of collaboration, professionalism, communication and a process to an improved healthcare system featured in most of the projects and prove that the students grasped the principles of interprofessional collaboration. Creativity of the team reflects the increased "power" of a group versus an individual.