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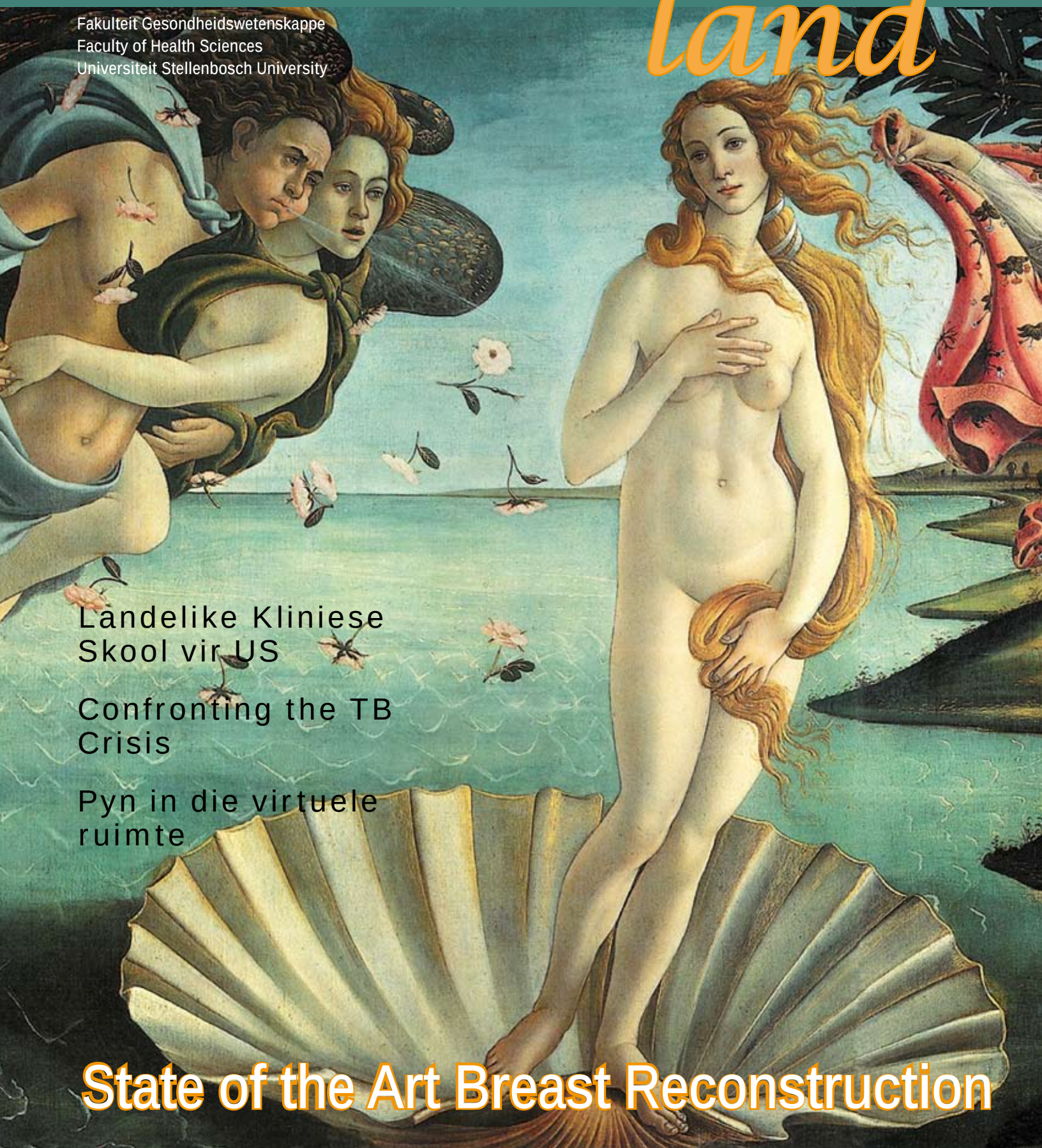
TYGER land

Fakulteit Gesondheidswetenskappe
Faculty of Health Sciences
Universiteit Stellenbosch University



Landelike Kliniese Skool vir US

Confronting the TB Crisis

Pyn in die virtuele ruimte

State of the Art Breast Reconstruction

The Birth of Venus by Sandro Botticelli. It depicts the goddess Venus, having emerged from the sea as a full grown woman, arriving at the sea-shore (Venus Anadyomene motif). The painting is currently in the Uffizi Gallery in Florence.This large picture may have been painted around 1482, or even before.

TYGER *land*

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Tygerland word uitgegee deur die Afdeling Bemarking en Kommunikasie van die Universiteit Stellenbosch se Fakulteit Gesondheidswetenskappe. Die tydskrif word gratis aan oudstudente van die fakulteit en ander belanghebbendes gestuur. Indien u kommentaar wil lewer op die inhoud van die tydskrif, of voorstelle maak ivm toekomstige uitgawes, kontak ons gerus. As u *Tygerland* gratis wil ontvang, stuur asseblief u pos- en e-pos adres aan:

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Om 'n werkbare Afrika-model te vind vir GESONDHEIDSWETENSKAPPE OPLEIDING

Die meeste akademiese inrigtings wat betrokke is by gesondheidswetenskappe-opleiding – of hulle in Suid-Afrika of in die buiteland is – word vandag gekonfronteer met unieke vraagstukke en uitdagings ten opsigte van die wyse waarop hulle klinici en ander gesondheidswerkers oplei, en of hierdie opleiding tred hou met die wyse waarop samelewings verander.

Met die eise en uitdagings wat gesondheidsorg in Suid-Afrika aan 'n instansie soos die US Fakulteit Gesondheidswetenskappe stel, het hierdie Fakulteit oor die afgelope dekade deurlopend innoverende aanpassings gemaak – aan ons kurrikula, studente profiel en die wyse waarop ons studente opgelei word.

Hoewel ons reeds in 2002 begin het om voorgraadse opleiding gedeeltelik uit die akademiese hospitaal te verskuif na plattelandse hospitale, klinieke en ander gesondheidsinstansies, het dit toenemend duidelik geword dat die Fakulteit, deur die uitbreiding van landelike opleidings- en navorsingsinisiatiewe, 'n wesenlike bydrae tot die gesondheid en welsyn van mense op die Wes-Kaapse platteland kan maak.

Op grond van ons ondervinding op hierdie gebied, en ná heelwat navorsing, konsultasie en onderhandeling met die Universiteit en eksterne vennote is daar derhalwe besluit om 'n Landelike Kliniese Skool, waarskynlik aangrensend tot die aansienlik opgegradeerde streekshospitaal in Worcester te vestig.

Die Skool sal nie net landelike opleidings- en navorsingsgeleenthede vir studente en akademiese personeel van die FGW skep nie, maar dit sal waarskynlik die middelpunt vorm van 'n plattelandse satellietkampus van die Universiteit Stellenbosch in Worcester, waar verskeie ander US-fakulteite ook voorsien om projekte te bedryf. As sulks, sal die nuwe kampus ongeëwenaarde geleenthede bied vir interfakulteits- en interdissiplinêre navorsing, opleiding en gemeenskapsinteraksie en -ontwikkelingsgeleenthede.

Die mikpunt van die Universiteit is om 'n volhoubare landelike ontwikkelingsprojek tot stand te bring en uitsluitlik te fokus op alle aspekte van menslike sekuriteit op die platteland – onder meer die ontwikkeling van plaaslike vaardighede en kundigheid tot voordeel van die hele streek. Ander fakulteite wat 'n rol sal speel is, onder meer, Agriwetenskappe, Teologie, Lettere en Sosiale Wetenskappe en Opvoedkunde. Van hierdie fakulteite is reeds betrokke by volhoubaarheidsprojekte in die streek. (Sien bl. 5).

Die Fakulteit is reeds besig om grond aan te koop vir die oprigting van die akademiese gebou, wat na verwagting in die loop van 2011 voltooi sal word. Verblyfgeriewe vir studente wat vir lang periodes kliniese opleiding daar sal ontvang, is ook deel van die beplande infrastruktuur ontwikkeling.

Die Skool sal nie net uniek wees in Suid-Afrika nie, maar dit het ook die potensiaal om as unieke laboratorium te dien vir 'n werkbare Afrika-model vir gesondheidswetenskappe-opleiding in 'n omgewing met beperkte hulpbronne.

A remarkable growth in research

It is with immense satisfaction that the Faculty and its researchers can look back at our research achievements of the past few years. Apart from sustained growth and a remarkable increase in

research outputs between 2004 and 2008, the quality and depth of these outputs have won the Faculty international recognition as world leaders in fields such as TB, mental health and diseases studied within the context of brain imaging (see article on p9). In terms of a SBA calculation, Stellenbosch University currently has the largest publications output in terms of publication units per senior lecturer. While publication output has remained static and even declined at many universities in South Africa, the number of research papers published in peer reviewed scientific journals by academic staff of our Faculty have increased by 33% over the last 3 years.

International funding is also making an important contribution to our research achievements. Large research grants, predominantly from international sources and amounting to more than half a million rand per project, have grown from about R20/ R30 million in 2004 to more than R110 million in 2008. At the same time, researchers also received smaller grants from local and international organizations. Most international research funding agencies focus their resources on multi-institutional and multi-disciplinary projects, rather than funding single-researcher research initiatives. Thus, much of the research currently conducted at the SU Faculty of Health Sciences, involves cooperation with international institutions or other South African universities – examples of which abound in this edition of *Tygerland*. As our reputation for research excellence grows, international institutions increasingly show a keen and abiding interest in working with FHS scientists and clinicians on projects ranging from HIV and TB to mother and child health and various others. The expertise offered by our researchers, as well as the Faculty's infrastructure and sophisticated research facilities and its close proximity to a wide range of both diseases of life style (increasingly) and diseases of poverty, including the epidemics of TB and HIV/Aids, present scientists from these institutions with opportunities for research that are unique in the world today.

Inter-universitêre samewerking

Internasionale befondsing het ook oor die afgelope jare samewerking tussen die US Fakulteit Gesondheidswetenskappe en ander gesondheidswetenskappe fakulteite in die Wes-Kaap en elders in Suid-Afrika, in die hand gewerk – nie net tot voordeel van die provinsie nie, maar dikwels ook tot voordeel van die land, die Afrika-vasteland en die internasionale gemeenskap.

'n Sprekende voorbeeld is 'n samewerkingsprojek van prof Mark Cotton van die US se KID-CRU-navorsingseenheid vir Infeksiesiektes en dr Avy Violari van die Universiteit van die Witwatersrand, wat deur die Amerikaanse *National Institute of Allergy and Infectious Diseases* (NIAID) befonds word. Die projek behels 'n groot kliniese proef wat fokus op vroeë antiretrovirale behandeling vir MIV-geïnfekteerde kinders en vroeë resultate van die studie het reeds daartoe aanleiding gegee dat die Wêreldgesondheidsorganisasie (WGO) en ander gesondheidsinstansies hul riglyne vir die behandeling van MIV infeksie in pediatriese pasiënte aangepas het.

Prof Wolfgang Preiser van die US se Afdeling Virologie het in die loop van 2009 in samewerking met die Universiteit Kaapstad en die Universiteit van Würzburg in Duitsland, 'n unieke navorsingsopleidingsgroep in Afrika geloods. Hierdie projek, wat gerig is op die groei van navorsingskapasiteit en die ontwikkeling van eersterangse navorsers vir die land, behels onder andere studiebeurse vir ses PhD-kandidate van die US en ses van die Universiteit Kaapstad (bl. 38).

Ons is terselfdertyd betrokke by talle akademiese en kliniese samewerkingsprojekte met die UK, sowel as die Universiteit van Wes-Kaapland en Kaapse Skiereiland Universiteit van Tegnologie, op gebiede soos Noodgeneeskunde, Kerngeneeskunde, Genetika, die opleiding van Tandheelkundestudente en verpleegsters, breinbeelding en navorsingsprojekte deur individuele navorsers van die verskillende departemente en afdelings in die FGW.

Samewerking met die privaatsektor

Fakulteitsvennootskappe met die privaatsektor gaan steeds voort en behels, onder meer, vennootskappe wat deur die drie grootste private hospitaalmaatskappye in die land befonds word. Befondsing van hierdie aard dra nie net by tot nagraadse opleiding vir Suid-Afrikaanse studente nie, maar in 2008 het dit ook gehelp om studentegetalle uit Afrika te verstewig – tot so 'n mate dat Afrikastudente tans bykans 10% van ons nagraadse studentekorps behels. Lees op bl. 40 meer oor hierdie studente en hoe hulle hul opleiding aan die US ervaar.

In this edition of *Tygerland*

Focusing on two of the strongest areas of research in the Faculty, articles in this edition of *Tygerland* provides you with an overview of new research and other initiatives in the areas of tuberculosis and HIV (p. 10 - p. 25). We also feature, among others, an interesting article on groundbreaking plastic surgery techniques for breast reconstruction after a mastectomy (p. 32); the Faculty's involvement in the implementation of new guidelines for the management of asthma (p. 26); interesting new research from the Physiotherapy division (p. 30); new textbooks from the Faculty (p.15 & p. 39) as well as new academic programmes and training initiatives (p. 39).

The *Tygerland* format only allows us to feature a limited number of subjects in one edition. I hope that the selection in this edition, together with the Faculty news that we share with you on a regular basis through the electronic newsletter, *Tygerberg Gesprek*, has given you a fairly comprehensive outline of new developments, initiatives and achievements at your alma mater. We hope to continue in this fashion to strengthen our ties with you, our much valued alumni and other partners and friends who share our quest for academic excellence and optimal health care for our country and our continent.

With warmest regards,

Wynand van der Merwe, Dean.

Landelike opleiding inspireer
‘selfvertroue, nederigheid en empatie’

’n Oud-Matie vergelyk sy ‘ou skool’-opleiding met dié wat MBChB-studente tans aan die US kry.

Die verskil wat landelike opleiding maak aan die houding en selfvertroue van die US se mediese studente, aan die vooraand van hul internskap-opleiding en diensjaar, is ’fenomenaal’.

Só sê dr Arno Rossouw, ’n oud-Matie en tans verbonde aan die Ceres-hospitaal waar hy gereeld as toesighoudende dokter, studente van die FGW tydens hul landelike opleiding onder sy vlerk neem.

Rossouw vertel dat hy sy MBChB-opleiding destyds voltooi het vòòr landelike opleiding deel geword het van die kurrikulum, en vòòr mediese studente soveel blootstelling aan pasiënte gehad het as die studente wat tans aan die US opgelei word.

“Ek onthou nog met hoeveel twyfel ek vir die eerste keer onafhanklik met pasiënte begin werk het. Ek het geweet ek was ’n student maar ek was nie seker of ek ’n dokter was nie.”

Drr Arno Rossouw (links) en Hans Hendriks is albei oud Tygerberg Maties en trotse oud-inwoners van Hippokrates

Hy sien min van hierdie twyfel in veral die vierde- en vyfdejaar studente van die FGW wat hul landelike rotasies van vyf weke op Ceres kom doen.

“Uit hulle eerste kontak met pasiënte kan ’n mens reeds sien dat dit nie die eerste keer is dat hulle ’n pasiënt ondersoek nie, en na ongeveer drie weke by die hospitaal, is die meeste van die studente in staat om pasiënte onafhanklik en met selfvertroue te diagnoseer en ’n behandelingsplan op te stel. Dit is van groot waarde – nie net in terme van dienslewering in die hospitaal nie, maar ook vir die student wat aan die vooraand staan van sy of haar internskap en diensjaar.”

Belangriker nog, sê Rossouw, is die studente se aanraking met die mensediens wat by plattelandse hospitale gelewer word. Anders as by groot hospitale waar die omset van pasiënte so groot is dat die individuele pasiënt net ’n nommer en ’n siekte word, leer ken die studente hul pasiënte in ’n plattelandse omgewing as mense wat in hul totaliteit behandel moet word.

“Hier leer hulle dat die dokter moet weet waar sy pasiënt vandaan kom en wat sy toegang tot vervoer en ander hulpbronne is. Hulle leer byvoorbeeld dat dit nie help om ’n pasiënt vir longontsteking te behandel en huis toe te stuur as die persoon nie ’n dak oor sy kop het nie.

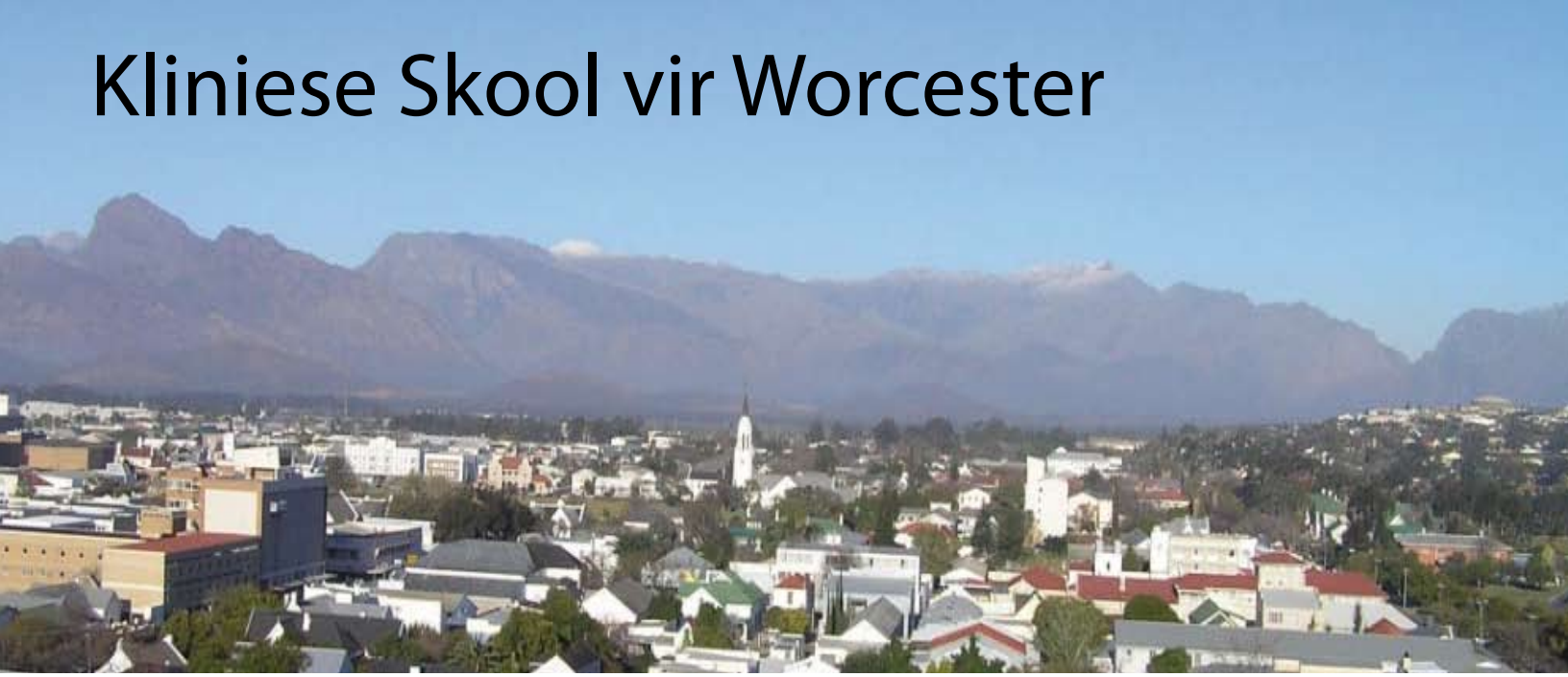
“By Ceres-hospitaal is daar gewoonlik op Dinsdae ’n vergadering van die hospitaal se multidissiplinêre span en na afloop van die vergadering doen hierdie span huisbesoek in die gemeenskap. Die studente gaan saam op hierdie besoeke en hulle kom in aanraking met pasiënte binne die realiteite van die pasiënt se daaglikse bestaan, en terselfdertyd leer hulle wat tuisgebaseerde sorg werklik beteken en wat dit van gesondheidswerkers verg.

“Ek het as student nooit sulke geleenthede tydens my opleiding gehad nie. Vandag sien ek hoeveel dit bydra tot studente se selfvertroue en hoeveel betrokkenheid, nederigheid en empatie dit in die hand werk.”

Rossouw sê dat baie van veral die senior studente van die US met wie hy op Ceres in aanraking kom, van ‘bo-gemiddelde standaard is’, en hy glo dat die Fakulteit se benadering tot opleiding en veral die landelike deel daarvan, bydra tot die besondere gehalte van die studente.

Juis omdat die klem in landelike opleiding so sterk op ‘mensediens’ val, en omdat dit soveel selfvertroue – en terselfdertyd nederigheid en empatie – in Suid-Afrika se dokters van môre inspireer, glo hy dat ’n landelike kliniese skool ’n besondere bate vir Suid-Afrika en die gesondheidsdiens van die land kan wees. T

Kliniese Skool vir Worcester



Die US Fakulteit Gesondheidswetenskappe is tans besig om Suid-Afrika se eerste plattelandse kliniese skool vir opleiding in die gesondheidswetenskappe in Worcester te vestig.

Hierdie skool het die potensiaal om as unieke laboratorium te dien vir 'n werkbare Afrika-model vir gesondheidswetenskappe-opleiding in 'n omgewing met beperkte hulpbronne, sê die dekaan van die Fakulteit, prof Wynand van der Merwe.

In die Fakulteit self, ontvang studente vir bykans 'n dekade reeds 'n deel van hul voorgraadse opleiding op die platteland by distrikshospitale, primêre sorg- en mobiele klinieke en ander gesondheidsinstansies. Die nuwe kliniese skool sal egter ongeëwenaarde geleenthede bied – nie net vir voorgraadse opleiding nie, maar ook vir navorsing, nagraadse opleiding en gemeenskapsdiens.

'n Terrein vir die oprigting van die fisiese infrastruktuur is reeds geïdentifiseer en volgens die Dekaan sal die nuwe fakulteitsgebou, langs die Worcesterhospitaal, in 2011 voltooi wees.

Die nuwe skool word beplan as sentrale onderdeel van 'n nuwe landelike satellietkampus wat die US in Worcester wil vestig as 'n Universiteitsbydrae tot volhoubare landelike ontwikkeling. Dit sal geleenthede vir verskillende fakulteite skep om saam te werk aan inisiatiewe wat fokus op alle aspekte van menslike sekuriteit in landelike gebiede – onder meer die ontwikkeling van plaaslike vaardighede en kundigheid ten bate van die hele streek. Benewens die FGW, sal fakulteite soos die Agriwetenskappe, Teologie, Ingenieurswese, Regsgeleerdheid en Opvoedkunde ook op die satellietkampus verteenwoordig word.

Die projek is veral gerig op die vyf temas van die millennium ontwikkelingsdoelwitte wat deur die Rektor van die US, prof Russel Botman, geïdentifiseer is, naamlik omgewingsvolhoubaarheid, menslike waardigheid, die uitwissing van armoede, demokrasie en sekuriteit, en ook op die menslike sekuriteitsinisiatief. Raakpunte tussen die fakulteite op gebiede soos voedselbronne, skoon water, gesondheid, leefstylverbeterings, vaardigheidsontwikkeling en omgewingsvolhoubaarheid is reeds geïdentifiseer, veral in projekte van die verskillende fakulteite wat reeds op dreef is.

Worcester en omliggende plattelandse gebiede soos Ceres, Robertson, Citrusdal, Paarl en Grabouw word reeds sedert 2002 deur Ukwanda - die US FGW se Sentrum vir Landelike Gesondheid in die Overberg – bedien. Hierdie platform vir onderrig, opleiding en navorsing is nie net stewig gevestig nie, maar dit word intensief benut deur die Fakulteit se voorgraadse studente wat dwarsdeur die jaar kliniese rotasies in hierdie gebiede doen, asook sommige nagraadse studente en Fakulteitsnavorsers. Omdat Ukwanda gemeenskapsinteraksie met onderrig en navorsing integreer, is vlagskipstatus vir gemeenskapsinteraksie in 2008 aan die Sentrum toegeken. Oor die afgelope paar jaar was daar 'n groeiende behoefte aan 'n uitbreiding van Ukwanda-aktiwiteite. Dit het gepaard gegaan met 'n behoefte aan groter interafhanklikheid tussen gesondheid en ontwikkeling.

Die strategiese plan vir die ontwikkeling van 'n nuwe Landelike Kliniese Skool is teen hierdie agtergrond ontwikkel. Die Skool sal opleiding vir professionele gesondheidswerkers fassiliteer en voorsiening maak vir 'n addisionele jaarlikse inname van 15 mediese studente, 10 studente uit die verwante gesondheidswetenskappe en tien internasionale studente. Die addisionele inname van voorgraadse studente ondersteun die nasionale Departement van Gesondheid se menslike hulpbronplan.

In terme van die huidige plan, maak die Skool voorsiening vir 'n jaarlange kliniese rotasie vir finale jaar mediese studente en kliniese assistente, asook vir rotasies deur studente in die verwante gesondheidswetenskappe. Op nagraadse vlak, maak die Skool voorsiening vir landelike opleiding vir 'n addisionele sewe kliniese assistente, en navorsingsgeleenthede sal geskep word vir studente wat aan Meesters- en doktorale tesisse werk. Verder word die moontlikheid ondersoek om 'n leerstoel in landelike gesondheid tot stand te bring om verdere stukrag te gee aan navorsing in landelike gesondheid en ontwikkeling sodat die kennis wat op hierdie wyse gegenereer word, uiteindelik kan bydra tot ontwikkeling in die Overbergstreek, sowel as nasionaal en op die Afrika-vasteland. T

Ukwanda makes a quantum leap

Health sciences training at Stellenbosch University is gradually moving out of the disease- and speciality-based environment of the academic hospital and today most of our undergraduates are regularly brought face to face with the needs of patients and the demands of health care in extremely poor and low resource settings during their training. Much of this training is facilitated by the University's Ukwanda Centre for Rural Health in Worcester. The academic platform, created by Ukwanda, will provide the backbone for South Africa's first Rural Clinical School, due to be established by the SU and its Faculty of Health Sciences over the next two years.

Over the past decade, students of the SU Faculty of Health Sciences have been brought into close contact with the realities of health in rural areas of the Cape Winelands and Overberg districts of the Western Cape – thanks to a unique platform created by the Ukwanda Centre for Rural Health.

From Worcester to small towns as far afield as Hermanus, Ceres, Robertson, Montagu, Swellendam and Caledon, partnerships have been built and facilities established to facilitate undergraduate rotations in district and regional hospitals, community health centres, family practices, day hospitals and mobile clinics as well as schools, old age homes and the homes of patients. Further training facilities have also been established at Madwaleni in Lusikisiki, one of the poorest and most remote parts of the Eastern Cape. At the same time, postgraduates in specialist fields such as obstetrics and gynaecology, paediatrics, family medicine, physio- and occupational therapy and human nutrition are also provided with training opportunities at the various sites.

Today large numbers of the Faculty's students are taken out of the disease- and speciality-based environment of the academic hospital and brought face to face with the needs of patients and the demands of health care in extremely poor and low resource settings during their training.

The cornerstone of the extensive platform that was required to facilitate rural training, was built in 2002 when the Faculty launched the Ukwanda Centre for Rural Health in Worcester. As the central hub of all FHS rural training activities, Ukwanda has not only established accommodation, computer facilities and other resources for students at the various sites, but also built partnerships with doctors and other health care professionals who supervise the students during their rural rotations.

The director of Ukwanda is Prof Hoffie Conradie, an alumni of Stellenbosch University who devoted most of his medical career to rural health care. Fresh from his training at the Faculty and Tygerberg Hospital, Conradie started working at a rural hospital in the former Transkei – and since then he has never worked in a city or urban area again. In the 1990's, when the SU division of Family Medicine and Primary Care created a number of posts for specialist family physicians to manage student rotations in rural areas, Conradie was appointed to supervise training activities at the Worcester Hospital.

He tries to share his outspoken passion for rural health with his students by exposing them to "remarkable roll models in health in the rural areas of the Western Cape."

"On my weekly visits to district hospitals I regularly see young doctors who carry an impossibly heavy workload, but still make a real difference to health care in their working environment. It doesn't matter how close they are to burn-out, they still get excited by new initiatives, like CPAP for neonates or a colcoscopy service in a district hospital.

"These are the doctors that Stellenbosch University would like to support by facilitating projects and research in rural areas. They are also the doctors whom we want to introduce to our postgraduate students."

Conradie believes that health sciences students can only develop an understanding of rural communities once they are

Stellenbosch University can be a pathfinder regarding health sciences education in settings with low resources.

brought face to face with the realities that govern those communities.

"It is only when a student visits a bedridden patient, cloistered in a tiny, corrugated iron shack without any means of transport to the nearest health care facility, that the student can begin to understand the hopeless plight of rural communities and the lack of proportional distribution of health services in the country."

He says that while the University should strive to expose the realities of an under-funded and badly-equipped rural health system, we should also strive to encourage energy and enthusiasm for change while supporting and facilitating current initiatives in rural health and development.

Stellenbosch University and the Faculty of Health Sciences are set to make a giant leap towards the realisation of these ideals within the next two years when a new Rural Clinical School will be established, adjacent to the Worcester Hospital – with Ukwanda's infrastructure forming the backbone of the new school's training activities, research and community interaction.

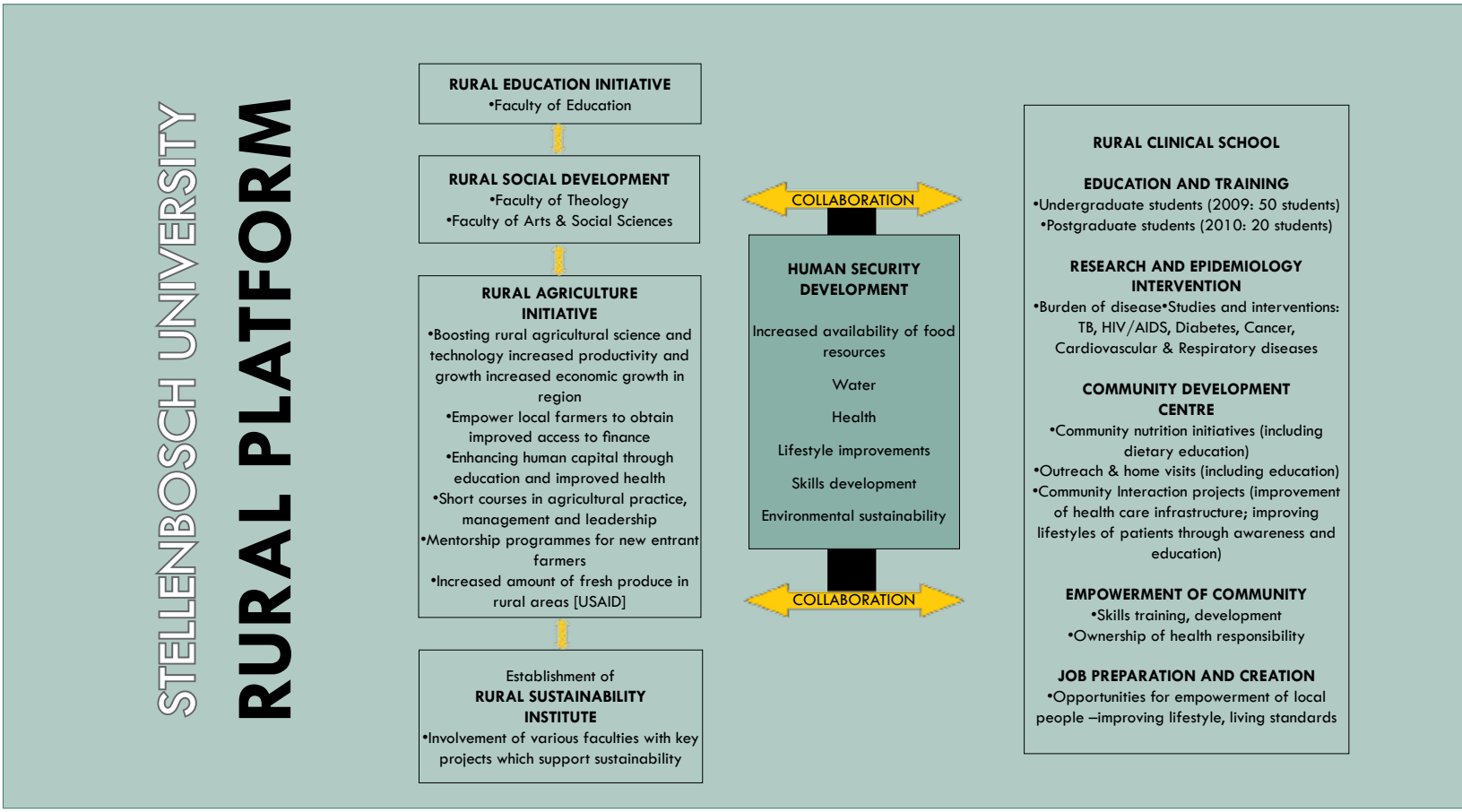
Over the past year, much research, consultation and negotiation have gone into the project, including a seminar with world experts in rural health education and representatives of other South African health sciences faculties. Closely examined issues and concerns included the quality and cost of rural training, the recruitment of students from rural areas, the role of specialist disciplines, partnerships and the involvement with external stakeholders.

According to international experts who attended the seminar, Stellenbosch University can be a pathfinder regarding health sciences education in low resources settings. This is one of the central challenges facing institutions across the world who are grappling with questions and challenges regarding medical training, and whether it is adapting to the way societies are changing.

The new Rural Clinical School will not be operated in isolation but will form the centre of a rural satellite campus of Stellenbosch University in Worcester. This campus will offer a wealth of opportunities for interfaculty and interdisciplinary research.

According to University authorities, the initiative has the potential to develop into a truly sustainable rural development project with a dedicated focus on the issues that affect all aspects of human security in rural areas, including the development of local skills and expertise to benefit the whole region. Candidate faculties could include the Faculties of Agrisciences, Theology, Engineering, Law and Education, some of which already have projects that support sustainability.

The graphic below illustrates the new rural platform and potential areas of collaboration:



HIPERBARIESE DRUKKAMER *vir onderrig en navorsing*

Die US Fakulteit Gesondheidswetenskappe het in 2005 'n unieke nisgebied en 'n belangrike internasionale kundigheidsgebied betree toe die Afdeling Gemeenskapsgesondheid die eerste Honneursgraad in Onderwatergeneeskunde in Suid-Afrika bekend gestel het.

In die afgelope jaar is 'n verdere komponent toegevoeg tot onderrig en opleiding in hierdie veld toe 'n Baromedisyne en Beroepsgeneeskunde fasiliteit vir pasiënte op die Tygerbergkampus geopen is. Hierdie fasiliteit, wat op die grondvloer langs die Onderwysblok ingerig is, is toegerus met twee hiperbariese drukkamers en 'n kliniese sentrum wat tot agt pasiënte per dag kan akkommodeer. Dr Cecilia Roberts, 'n spesialis op die gebied van hiperbariese suurstofbehandeling, is aangestel as bestuurder van die fasiliteit, met Suster Surita Fitchat as haar assistent.

Dit is slegs die tweede fasiliteit van hierdie aard by 'n tersiêre instansie (die ander is by die Universiteit Pretoria), en as sulks is dit toegerus om navorsing te doen op die waarde van suurstofterapie in die behandeling van spesifieke mediese en chirurgiese toestande. As beroepsgeneeskundige fasiliteit, doen die sentrum verpligte geskiktheidstoetse vir vlieëniers en diepsee duikers, sowel as toetse om die beroepsverwante mediese geskiktheid van siek of beseerde indiwidue te bepaal.

Studente uit verskillende lande is tans geregistreer vir die Afdeling se onderwater- en hiperbariese geneeskunde programme, onder meer uit Brittanje, Romenië, Thailand, Indië, Australia, Nieu-Seeland en Saoedi-Arabië. Volgens dr Jack Meintjes, wat betrokke is by die onderrig van hierdie programme, is meer as 'n duisend studente sedert 2005 in Onderwatergeneeskunde opgelei.

Wat is Hiperbariese Suurstofterapie?

Hiperbariese (i.e. verhoogde druk) suurstofterapie of HST is 'n gespesialiseerde behandeling wat gebruik maak van die genesende eienskappe van suurstof wanneer dit onder verhoogde druk ingeasem word. Om dit met veiligheid te kan doen moet suurstof in 'n spesiaal vervaardigde drukhouer of hiperbariese kamer toegedien word. Onder hierdie omstandighede los daar soveel suurstof in die bloed op dat dit genesende effekte het. Hiperbariese Suurstofterapie het die vermoë om beseerde en geïnfekteerde weefsels te laat genees onder omstandighede waar dit nie andersins moontlik sou wees nie. Al die liggaam se primêre genesingsprosesse is afhanklik van suurstof en deur gekompliseerde mediese toestande met Hiperbariese Suurstofterapie te behandel kan ledemate soms gered en komplikasies verminder word in hoë risiko situasies.

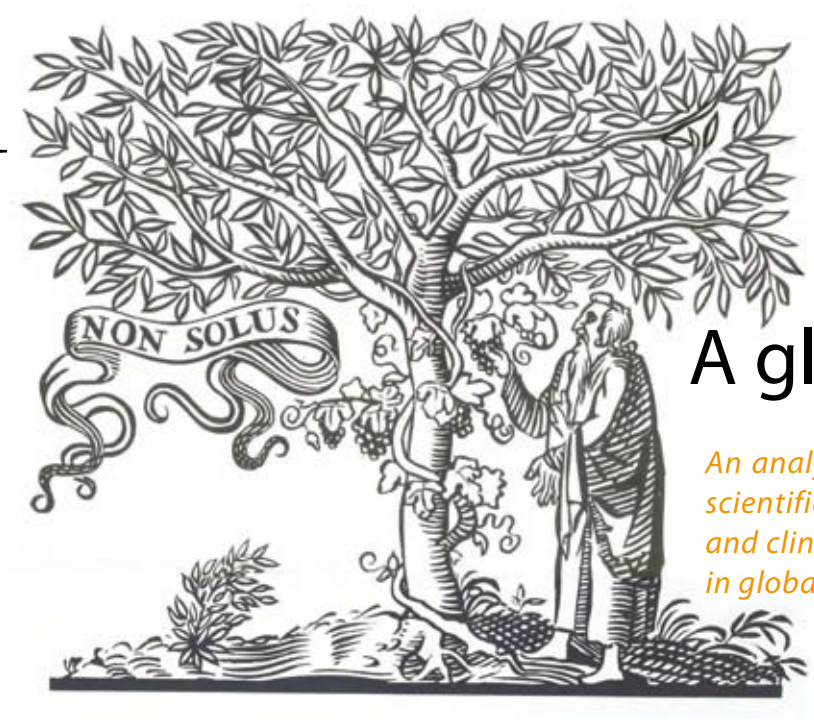
Sr Surita Fitchat (links) en dr Frans Cronjé berei 'n pasiënt voor vir behandeling.

Vir navrae en afsprake, skakel Sr Surita Fitchat by (021) 938 9808; 082 772 0775 (selfoon); 086 551 5347 (faks) of suritaf@sun.ac.za (ePos).

Wie kan baat by hiperbariese suurstofterapie?

Daar is 13 toestande waar hiperbariese suurstofterapie van groot nut of selfs lewensreddend kan wees:

- Borrelberoerte (arteriële lugembolisme)
- Dekompressie Siekte
- Koolstofmonoksied vergiftiging
- Gasgangreen
- Vergruisbeserings waar erge weefsel trauma en swelling aanwesig is of waar ledemaat swelling bloedtoevoer belemmer (kompartement sindroom)
- Probleem wonde (sekere diabetiese, arteriële, drukseer en veneuse stase wonde)
- Vernietigende weefselinfeksies
- Weerstandige beeninfeksies (osteomiëlitis)
- Bestraling-skade aan die kakebeen of sagte weefsel in die behandeling van kanker
- Gekompromitteerde veloorplantings, plastiese chirurgie of weefseloorplantings
- Akute Termiese Brandwonde
- Akute Bloedverlies (waar bloed nie oor getap kan word nie) bv. Jehova Getuies
- Serebrale Absesse.



ELSEVIER

Analysis

Stellenbosch University:

A global leader in Health

An analysis by the world's largest publisher of medical and scientific literature highlights the leading role of scientific and clinical researchers of the SU Faculty of Health Sciences in global health research.

Research scientists and clinicians of the Faculty of Health Sciences, Stellenbosch University, are increasingly taking the lead in international efforts to control the epidemics and other diseases which are wreaking havoc on the health of the people of South Africa and others living on the African continent.

A recent analysis by Elsevier – the world's largest publisher of medical and scientific literature – indicates that SU is the world's scientific leader in tuberculosis research and mental health studies, especially in the context of anxiety and stress disorders and schizophrenia.

Using only the most highly cited articles, published in international scientific and medical journals over a period of five years, Elsevier mapped the research strengths (or competencies) of universities worldwide within focused subject areas. According to this analysis, Stellenbosch University as a whole is the world leader in five areas of research – two of which are in the Faculty of Health Sciences.

Prof Ben Marais of the DTTC tops the lists of leading authors in the field of clinical TB research while Prof Paul van Helden is the most cited author with regard to laboratory based TB stu-dies. Other leading authors in the TB field include Profs Nulda Beyers, Peter Donald, Gerhard Walzl, Rob Warren, Robert Gie, Simon Schaaf and Mark Cotton.

Leading authors in the field of mental health, with particular reference to anxiety and stress disorders, as well as schizophrenia, include Profs Robin Emsley and Soraya Seedat of the FHS and Prof Abraham Greeff of the Department of Psychology on the main campus. Seedat is also listed as one of the world's top authors on mental health with regard to post-traumatic stress disorders, OCD and other anxiety disorders.

Apart from tuberculosis and mental health disorders, the analysis indicates that next to the University College of London, the Faculty's researchers have made the strongest contributions in the field of brain imaging, employed in the study of TB - with Prof Johan Schoeman making a significant contribution.

Emerging strengths

Amongst other emerging research strengths, listed in the analysis, the SU FHS occupies a third position after the universities of Harvard and Columbia in the United States, in the study field exploring the genetics of anxiety and stress disorders. Frequently sited authors in this field include Profs Soraya Seedat, Dana Niehaus, Christine Lochner, Valerie Corfield, Hanlie Moolman-Smook, Paul Carey and Drs Greg Kinnear, J Muller and James Warwick.

At the same time, FHS researchers have made leading contributions in areas such as HIV prevention in South Africa (Profs Seedat and Charles Parry); infertility studies (Prof Danie Franken); obstetrics focused on intra-uterine growth, gestational age and growth restriction (Prof Hein Odendaal); cytogenetics and genome mapping within the context of TB (Prof Van Helden and his team); diabetes and diabetic care (Prof Bob Mash); heart research concentrated on ischemic preconditioning (Prof Amanda Lochner) and psychosis and schizophrenia (Prof Emsley). The Faculty is also amongst the top ten institutions in the world with regard to the study pleural diseases, with Profs Andreas Diacon, Chris Bolliger, Anton Doubell, Colleen Wright, Gerhard Walzl and others making contributions. Prof Jean Nachega is listed with regard to studies on aspects of antiretroviral therapy in South Africa.

A striking feature of the Faculty's research, is the interdisciplinary nature of the investigations with numerous scientists and clinicians contributing critical expertise, particularly in TB where HIV expertise, together with microbiology methods for optimal detection and monitoring of treatment response, pharmacology, immunology, ethical conduct of research, clinical trials and molecular biology are vital elements of the numerous studies published internationally every year. This trend is also evident in mental health studies which often bring together brain imaging, genetics, clinical trials and pharmacotherapy.

On the following pages, Tygerland focuses the spotlight on TB as one of the strongest areas of research in the Faculty.

A *formidable* research platform

The health of South Africa's population is severely compromised by two epidemics – tuberculosis and HIV. In the SU Faculty of Health Sciences, researchers across various departments, divisions and disciplines continue to contribute new knowledge to these fields by means of investigations relevant to South Africa and the subcontinent. The articles on the next pages focus on new initiatives in the field of TB and HIV over the past year.

Prof Peter Donald, A-rated scientist and distinguished clinical researcher in the SU Faculty of Health Sciences, embarked on a research career in tuberculosis more than 30 years ago when TB was not a subject that commanded much international interest.

In those days, scientist in the developed world believed that infectious diseases had been conquered by vaccines and antibiotics. And for a while then, it looked as if TB had indeed been conquered – thanks to the availability of specific antibiotics, taken over a period of six months to effect a cure.

However, in South Africa, and in Cape Town in particular, Donald and his colleagues were still confronted by TB in communities on a daily basis – despite the availability of antibiotics and a national effort to control the disease. Over the years, they continued to study various aspects of the disease and by the time the rest of the world started to take notice of the re-emergence of TB, research in the Faculty was already firmly established.

Their studies focused on the epidemiology of the disease, paediatric TB, new TB drugs and TB meningitis – an area in which Donald and his SU colleague, Prof Johan Schoeman, had been doing groundbreaking research which attracted attention worldwide and established them as global leaders in the field.

They also laid the foundations for a formidable TB research platform in the SU FHS, comprising close co-operation between scientists and clinicians and between various departments and divisions. This approach stimulated the development of critical expertise in areas ranging from HIV and microbiology methods for optimal detection and monitoring of treatment response to pharmacology, immunology, ethical conduct of research, clinical trials experience and molecular biology.

TB-inisiatiewe in die US Fakulteit Gesondheidswetenskappe

Ten spyte van intensiewe navorsing oor baie jare, sowel as pogings van die regering om TB deur middel van die sogenaamde DOTS-program onder beheer te bring, het Suid-Afrika steeds die vyfde hoogste voorkoms van TB ter wêreld; die vierde hoogste voorkomssyfer van middelweerstandige TB en die grootste getal MIV-positiewe mense wat ook aan TB ly. In 2008 was 44% van alle nuwe TB-pasiënte in Suid-Afrika ook MIV-positief. Multi-middelweerstandige TB (MDR TB) and die meer dodelike vorm daarvan, nl. uiters middelweerstandige TB (XDR TB) dra verder by om die krisis te vererger en navorsers en klinici beklemtoon die behoefte aan nuwe benaderings om die behandeling van middelweerstandige TB te verbeter.

Volgens prof Paul van Helden, een van die voorste TB-navorsers in Suid-Afrika en internasionaal, is die voorkoms van TB in Suid-Afrika vandag soortgelyk aan die voorkoms van die siekte in Londen in 1800.

Hy sê die probleem hou deels verband met armoede en verwante toestande soos wanvoeding en mense wat té na aanmekaar in beknopte leefruimtes woon, en deels met die aard van die bakterium self. Die vermoede is dat die bakterium minder gevoelig is vir antibiotika omdat dit so stadig groei. Dit kan gevolglik binne die selle van die menslike liggaam wegkruip en weerstand bied teen die liggaam so pogings om dit te vernietig.

TB-middels moet derhalwe maande lank toegedien word en dit het onaangename newe-effekte. Daarom gebeur dit dat pasiënte nie die middels gereeld oor die vereiste periode van behandeling gebruik nie en sal dikwels selfs die behandeling staak as hulle begin beter voel. Dit gee aanleiding tot die gevaarliker vorm van middelweerstandige TB wat veroorsaak word wanneer die TB-basille weerstandig raak teen die middels wat as die eerste verdedigingslinie teen die siekte gebruik word. XDR TB is ook weerstandig teenoor tweede-linie middels. Mense wat met die MI-virus geïnfekteer is, is as gevolg van 'n verswakte immuunstelsel, veral vatbaar vir TB en in sulke gevalle kan XDR TB dodelik wees.

Omdat navorsers in die US FGW hulself toespits op siektes wat Suid-Afrika en die subkontinent affekteer, is tuberkulose vandag een van die sterkste fokusgebiede van navorsing in die Fakulteit – en word die Universiteit internasionaal erken as leier in hierdie veld. Die diepte en omvang van TB-navorsing was weer vanjaar opvallend uit die voordragte en plakkate wat by die Akademiese Jaardag aangebied is. Die meer as 50 TB-projekte wat voorgedra is, het gekom van navorsers uit bykans elke departement en afdeling in die Fakulteit en die meeste daarvan verteenwoordig noue samewerking tussen navorsers uit verskillende afdelings en dissiplines.

Navorsers is dit eens dat beter TB-beheer afhang van nuwe en verbeterde diagnose, nuwe middels en beter en korter behandelingstrategieë vir TB-pasiënte - volwassenes sowel as kinders – en diegene met of sonder MIV-infeksie.

Tygerland fokus in hierdie artikel die soeklig op belangrike nuwe inisiatiewe in die US FGW wat oor die hele TB-spektrum strek – vanaf gemeenskapsbetrokkenheid tot navorsing en praktiese inisiatiewe wat gerig is op beter diagnose en behandeling.

The problem with TB

The global burden of tuberculosis

"Some 22 high-burden countries collectively account for 80% of the global tuberculosis burden. In 2007, the countries with the highest prevalence were India (with 2.0 million cases); China (1.3 million); Indonesia (530 000); Nigeria (460 000) and South Africa (460 000). Of the estimated 1.37 million cases in HIV-positive persons, 79% were in Africa and 11% in South East Asia. Disturbingly, there were an estimated 500 000 cases of multidrug-resistant (MDR) tuberculosis in 2007 (including 289 000 new cases). Of these 131 000 were in India; 112 000 in China; 43 000 in Russia; 16 000 in South Africa and 15 000 in Bangladesh. Fifty five countries had reported cases of extensively drug resistant (XDR) TB by the end of 2008. These last figures are reason for considerable concern and highlight a potential threat to our ability to treat tuberculosis, both in individual patients and in the context of a treatment programme."

Profs Peter Donald and Paul van Helden, in an article in the New England Journal of Medicine, June 2009: *The Global Burden of Tuberculosis – Combating Drug Resistance in Difficult Times.*

No new TB drugs have been developed since the 1950's and 1960's, mainly because pharmaceutical companies no longer regard the disease as a threat in the developed world, and because the economies of developing countries with a high TB burden are not regarded as a viable market for new drugs. Consequently TB drug research has been held back for decades. In the past year, Stellenbosch researchers have played a leading role to ensure better drugs become available as fast as possible for those needing it the most.

At the forefront of drug development

Earlier this year, the first new tuberculosis drug in 40 years was successfully used to treat multidrug-resistant tuberculosis (MDR-TB) patients in a clinical trial conducted by Prof Andreas Diacon and a team of researchers of the Task TB Trials Unit of the SU Faculty of Health Sciences.

According to Diacon, diarylquinoline TMC207 works differently from other TB drugs by targeting an enzyme of *Mycobacterium tuberculosis*, the agent that causes TB.

During the clinical trial, the researchers gave the drug to 20 patients in addition to standard therapy for MDR-TB for eight weeks. Twenty-one patients received a placebo plus standard treatment. About half the patients on TMC207 were successfully treated compared to about ten per cent on the placebo. The team continues to monitor the patients to see if treatment remains effective.

"What we saw over the eight weeks was a significant difference in the rate in which tuberculosis disappeared," Diacon says. "The drug works on both drug-susceptible and drug-resistant TB in the laboratory and the implications are that this new drug might shorten treatment time for all tuberculosis patients."

One of the key problems during the treatment of TB is to convince patients to stick to their treatment schedule, which usually lasts for a period of six months. A drug that shortens the treatment time scale could therefore stop people from dropping out of the treatment programme. It is when patients interrupt or discontinue their medication that TB bacteria develop drug resistance.

A second group of South African MDR-TB patients is now undergoing a longer, six-month trial of TCM207.

The efficacy demonstrated by the new drug against MDR-TB in particular, is regarded as one of the most important medical breakthroughs in many years in the fight against tuberculosis. While it is difficult to treat tuberculosis, MDR-TB treatment is even more difficult and much more expensive. It takes at least 18 months to treat MDR-TB, which requires second-line drugs since the first-line drugs are no longer effective because the bacteria have become resistant to them. However, increasing numbers of patients are dying despite treatment.

Although the new drug is still in the clinical trial phase, it is almost certain to be approved in the near future.

The research was published in the *New England Journal of Medicine* in June 2009.

A new clinical trials consortium

Diacon is also part of a team of TB researchers of the SU FHS who have been chosen to participate in a TB Clinical Trials Consortium (TBTC), comprising 15 test sites.

The consortium is funded by the American Centres for Disease Control (CDC), who awarded the grant after a competitive international selection process.

Known as SUN-TB, the team is led by Prof Anneke Hesseling of the Desmond

Tutu TB Centre, Diacon, who is the director of the Task TB Trials Unit, and Prof Mark Cotton, director of the Paediatric Infectious Diseases Unit, KID-CRU. The SU application was written in collaboration with Drs Fred Gordin and Debra Benator of the George Washington University (GWU), representing the US Veteran's Administration TBTC sites.

This faculty-wide application draws on the strong interdisciplinary TB research experience at Stellenbosch and includes numerous co-investigators who bring critical expertise in HIV, microbiology methods for optimal detection and monitoring of treatment response, pharmacology, immunology, ethical conduct of research, clinical trials experience and molecular biology. The new research efforts will also build on the strong historical research collaborations between the local TB control programme at community level and Stellenbosch investigators, and also strengthens a formal inter-university collaboration with GWU.

Hesseling points out that although children are a group highly vulnerable to TB, few studies of new TB drugs or regimens have included children. The SU investigators bring paediatric TB expertise to the group as well as a strong research track record both in adult and paediatric HIV research.

The main aim of the TBTC is to improve treatment for TB through new drugs, better strategies and shorter durations of treatment. Initial TBTC studies will investigate novel shorter TB regimens in adults and children with and without HIV infection.

This research has the potential to impact significantly on improved TB care in South Africa, where we are increasingly faced with the problem of drug resistant TB and an urgent need for new approaches to improve the treatment of drug susceptible drug resistant TB. T

Pictures on opposite page are from left to right:
Profs Andreas Diacon, Mark Cotton and Anneke Hesseling.

Drug resistant TB studied to *develop new drugs*

Through the study of drug sensitive and drug resistant TB strains, scientists hope to identify markers for the design of new TB drugs.

When it comes to TB research, the SU Faculty of Health Sciences enjoys competitive advantage in many areas, mainly as a result of funding, expertise in the field and valuable resources – such as a unique bank of samples, collected over many years by Profs Tommie Victor and Rob Warren of the Molecular Biology and Human Genetics division.

This bank represents one of the largest collections of TB samples in the world, including more than 13 000 drug sensitive and 6 000 drug resistant cultures which form a vital resource for studies that use DNA fingerprinting to track the evolution of drug resistant strains and how they spread through populations.

Working with these strains, the SU team are trying to find out how normal tuberculosis strains mutate to become resistant to antibiotics. By whole genome sequencing and comparing the DNA of numerous strains, they identify gene variations that seem to correlate with drug resistance. So far the team, in collaboration with partners at the Harvard School of Public Health in the United States, have identified more than 40 mutations that can either confer or enhance drug resistance in TB bacteria. They hope to sequence hundreds of TB bacteria to derive the most comprehensive view of drug resistance possible.

Recently, Victor and collaborators received a grant amounting to R4 million over a period of three years from the Wellcome Trust to study drug resistant TB.

He and his team plan to identify molecular events which can be targeted by new drugs to prevent the bacterium to become hyper-resistant, Victor says.

This study is also strongly supported by their access to the TB sample bank.

"We have already made good progress and our students are currently working on a project entitled *New hope for the treatment of drug resistant TB*, he says. T

*Profs Rob Warren (left) and Tommie Victor (right) with Dr Gail Louw seen here with the poster presentation entitled "*New hope for the treatment of drug resistant TB*" which she delivered at an international congress recently. The presentation also won a prize at a TB colloquium held at the MRC. Louw received her PhD last year for research on this project and is currently continuing the research as part of the team.*

A TB partnership with Germany and Russia

TB is a global problem and although it affects underdeveloped countries in particular, scientists from all over the world are involved in the quest to improve our understanding of the epidemic, develop new strategies to control the disease and improve TB drugs and diagnostics. Many of these scientists work closely with SU institutions such as the NRF Centre of Excellence for Biomedical Tuberculosis Research and the MRC Centre for Molecular and Cellular Biology – both located in the SU Department of Biomedical Sciences – as well as the Desmond Tutu TB Centre in the Department of Paediatrics and Child Health. In 2008, the University forged a new tripartite partnership with Germany and Russia with the purpose of working together to fight tuberculosis and other infectious diseases.

Russia, like South Africa, has been identified by the World Health Organisation (WHO) as one of the 22 countries that account for about 80% of all tuberculosis cases in the world.

With South Africa listed as the country with the 5th highest incidence of TB in the world, and Russia as the country with the 11th highest incidence, researchers from the two countries got together earlier this year to look at areas of common interest where they can work together in various fields of interest in TB.

Cooperation between the two countries and Germany were initiated at a workshop held at the FHS and organised by Prof Bernd Rosenkranz, head of the Pharmacology Division.

Germany was represented by Dr Florian Marx of the Berlin-based Koch-Metchnikoff Forum (KMF) and his Russian partner, Dr George Kosmiadi while a strong contingent of researchers from the SU FHS and Tygerberg Hospital, who are involved in TB research, management and public health, attended the workshop. The event was subsequently followed up with a formal agreement between Stellenbosch University and the KMF regarding future cooperation.

Marx, who is a member of the KMF's Section of Tuberculosis and currently Master of Science student at the London School of Hygiene and Tropical Medicine, visited the Desmond Tutu TB Centre (DTTC) for five weeks to conduct an analysis of routine TB surveillance data to investigate the incidence of recurrent tuberculosis and predictors of treatment default in the Cape Town communities of Ravensmead and Uitsig. He completed the study under the supervision of Prof Nulda Beyers, director of the DTTC.

Marx has worked for the KMF in the Russian Federation for the past three years on TB monitoring and evaluation. He hopes to make further contributions to the scientific partnership and exchange among South African, German and Russian scientists.

Marx has worked in high-burden TB areas in all parts of Russia. In an interview with Tygerland, he said 80 out of every 100 000 people in Russia were affected by TB, but the disease was more prevalent in rural areas like Siberia than in European Russia.

"For instance, the incidence of the disease in Moscow is 40/100 000 while in some remote parts of Siberia it can be 300/100 000".

His colleague, Dr George Kosmiadi pointed to many similarities in the epidemiology of TB in Russia and South Africa.

"The incidence of multiple drug resistant TB is growing and according to the latest WHO estimates, almost 50% of registered TB cases are multi-drug resistant. At the same time TB/HIV co-infections are increasing, especially in populations such as intravenous drug users and prisoners. In fact, TB is much more prevalent in Russian prisons than in civilian life."

As in South Africa, factors that play a role in the TB in Russia, include social problems, poverty, unemployment and excessive alcohol use, says Kosmiadi. Unlike South Africa, however, intravenous drug use plays a more central role in TB and HIV co-infections than sexual transmission of the HI virus.

"An important factor that led to the explosion of TB in Russia, was the overcrowded conditions in our prisons. Improvements of these conditions and more effective treatment of the disease, have contributed to an overall improvement of the TB situation in recent years," he says.

According to Marx and Kosmiadi, 80 million Russians were undergoing X-ray screening for TB annually. They regard this as an excellent opportunity for joint research studies, i.e. to find out if case

screening – as it is done in South Africa – is more effective than the Russian approach. They also believe that the two countries have much to learn from each other regarding the dissemination of TB and the management and treatment of TB patients.

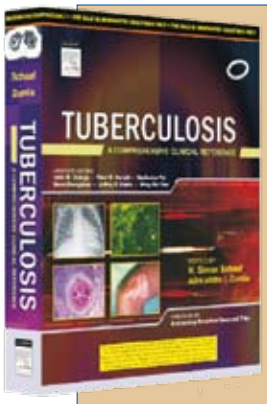
"The KMF's strongest interests include joint research projects, clinical trials and capacity building," says Marx.

The agreement between SU and the KMF provides for long-term scientific cooperation between South Africa and the Germany/Russian Federation in various areas of TB, such as immunology, microbiology, epidemiology and public health, and states that SU institutions, responsible for tuberculosis control will be members of the tuberculosis working group of experts of the Koch-Metchnikov-Forum (KMF). It also provides for the exchange of students, teachers, doctors and scientists aimed at the training of highly qualified scientific experts and teaching personnel. One of the main objectives of the working group is to recruit leading researchers and experts from South Africa, Russia, and Germany into tuberculosis research, with special focus on drug-resistant pulmonary tuberculosis, the translation of advanced developments from South Africa, Russia and Germany into practical public health care and attracting big industrial investor interest to the problems of TB and related infectious diseases.

The representative from Germany, Dr Florian Marx with two study doctors at the Desmond Tutu TB Centre; Karen Du Preez (left) and Elizabeth Du Toit (right) during his recent visit to the Faculty.

South African-German cooperation will be aimed at improving access to effective diagnosis, treatment and cure, to stop transmission of tuberculosis, to reduce its social and economic toll, and to assist in development and implementation of new preventive, diagnostic and therapeutic tools and strategies to stop tuberculosis. Working in close collaboration with the World Health Organisation, various fields of interest will come under the microscope, both in research and clinical practice - among others:

- Medical microbiology,
- Immunology,
- Biomarkers,
- Clinical trials including new drugs and vaccines,
- Pharmacokinetic studies (relationship to efficacy and toxicity),
- Databases,
- Tuberculosis in children,
- Establishment of study cohorts,
- Hospital prevention and control,
- Tuberculosis monitoring, evaluation, active case finding,
- Adherence to tuberculosis treatment regimens, and
- Public health issues of tuberculosis. T



Nuwe TB handleiding

Die eerste omvattende kliniese handleiding oor tuberkulose, wat op ontwikkelde, sowel as ontwikkelende lande gerig is, is onlangs onder die redaksie van proff Simon Schaaf van die US se Departement Pediatrie en Kindergesondheid en Alimuddin I. Zumla van die Universiteit Kaapstad gepubliseer deur die vooraanstaande uitgewersmaatskappy, Elsevier.

Volgens Schaaf is die boek, *Tuberculosis: A comprehensive clinical reference,* die eerste handleiding wat volwasse- en kindertuberkulose so uitgebreid dek. "Ongeveer 'n derde van die boek handel oor TB in kinders. Dit is werklik 'n internasionale boek met skrywers van Afrika, Noord-Amerika, die Verenigde Koninkryk, Europa en Asië/Australië."

Navorsers en klinici uit die FGW het egter 'n leeue aandeel gehad in die publikasie van die handleiding deur nie minder nie as 25 bydraes te lewer. Die voorwoord is deur die emeritus aartsbiskop, Desmond Tutu – beskermheer van die Tygerberg Kinderhospitaal, geskryf. Die FGW-skrywers was Nulda Beyers, Robert Gie, Ben Marais, Anneke Hesseling, Simon Schaaf, Peter Donald, Sharon Kling, Pierre Goussard, Johan Schoeman, Etienne Nel, Jean Nachega, Juanita Bezuidenhout, Colleen Wright, Johann Schneider, Paul van Helden, Chris McEvoy, Rob Warren, Francois Jordaan, Gert Vlok, Martin Storm, Matthys Botha, Hayes van der Merwe, Helmuth Reuter, Elvis Irusen en twee ere-professore, Donald Enarson en Madhu Pai.

Daar is twee uitgawes van die boek beskikbaar. Albei het dieselfde inligting en is deur Saunders, Elsevier, gepubliseer. Die Europese/VSA uitgawe wat in hardeband verskyn, is gedruk op beter kwaliteit papier en kos ongeveer drie keer meer as die Indiese uitgawe. Die Indiese uitgawe is ook in hardeband en op 'n aanvaarbare kwaliteit papier gedruk. Die boek is beskikbaar in Suid-Afrika teen R650-R700. Dit kan bestel word by Jackie Strydom van *Medbookseller* by die ePos-adres: Jackie@medbookseller.co.za of telefonies by 021-975 1970. T

Suffer the children

In developing countries such as South Africa, TB is a major cause of disease and death in children under the age of 14 years. At the same time, the parallel HIV epidemic further contributes to the crisis. Studies indicate that in 2007, about 420 000 new HIV infections occurred in children, mainly in sub-Saharan Africa, through perinatal transmission, in a population vulnerable to early contact with tuberculosis. A recent study in the Western Cape recorded a TB incidence of 1 596 in 100 000 HIV-infected, and 66 in 100 000 HIV-uninfected infants. At the same time autopsy studies in sub-Saharan Africa have shown that 20% of deaths in HIV-infected children are due to TB.

In Zambia, the Ivory Coast, Malawi and South Africa, TB-related mortality is considerably higher in HIV-infected compared to HIV-uninfected children. Despite the high disease risk experienced by HIV-infected children, the majority of child TB cases are still in HIV uninfected children. Compared to adults, relatively fewer children are HIV-infected and young children are highly susceptible to develop TB irrespective of their HIV status. When children are co-infected with HIV and TB however, they show more rapid progression of the disease and increased morbidity and mortality.

Damien Schumann

From a literature review compiled by Profs Colleen Wright, Rob Warren and Ben Marais

Paediatric tuberculosis:

When necessity is the mother of invention

The World Health Organisation's research priority guidelines for paediatric TB identified the evaluation of new techniques to improve diagnosis and the management of paediatric TB as an urgent research priority. Prof Colleen Wright, with interdepartmental and interdisciplinary co-operation from colleagues in the SU Faculty of Health Sciences, has made significant progress in this direction.

For the past years, Prof Colleen Wright, head of the Anatomical Pathology division of the SU Faculty of Health Sciences, has been working in close co-operation with colleagues from the Desmond Tutu TB Centre, the Centre for Molecular and Cellular Biology in the Department of Biomedical Sciences, and the Department of Paediatrics and Child Health, to explore new and innovative ways to eliminate or minimise the delays in diagnosis and treatment of children affected by tuberculosis and the HIV-co-epidemic.

The old and conventional methods for the diagnosis of TB represent one of the major obstacles to effective tuberculosis management and control, causing delays that lead to ongoing transmissions of the airborne TB infection in homes and communities affected by the disease.

Fine needle aspiration

Working mainly with children, Wright and her team embarked on their quest for better and more cost-effective TB diagnostics by establishing fine needle aspiration of enlarged lymph nodes - due to possible tuberculosis or other infections - as a highly effective and cost-efficient service at Tygerberg Hospital and at peripheral hospitals and clinics.

Fine needle aspiration is a simple and non-invasive method to acquire cells from children presenting with enlarged lymph nodes and it is very successful when used for the rapid detection of tuberculosis.

In developing countries with a high burden of infectious diseases such as TB and HIV, fine needle aspiration biopsy can be of inestimable value in confirming the diagnosis of mycobacterial infection, permitting early appropriate therapy, as well as a means to obtain specimens for culture, bacterial species determination and sensitivity testing," Wright says. "Many children with pulmonary TB have enlarged lymph nodes and we have found that they tolerate fine needle aspiration very well. Once we acquire the diagnostic material, the provisional diagnosis of TB can be given in two days. Thus treatment can start while we wait for a TB culture, which takes up to 6 weeks to complete."

The procedure also offers a simple solution to the problem of distinguishing between HIV, TB and other infectious agents.

With the establishment of a fine needle aspiration clinic and on-site cytological diagnostic services, Wright and her team

revolutionized the diagnosis and management of children with TB at Tygerberg Hospital – to the extent that they decided to expand the service to peripheral hospitals and clinics. "Fine needle aspiration is a cost-effective diagnostic modality that may be performed at the bedside as an outpatient procedure. It requires no infrastructure or sterile environment and no sophisticated or expensive equipment. Superficial aspirates may be performed by clinicians, pathologists or trained nursing personnel and do not require local or general anesthesia."

To establish the service at clinics and peripheral hospitals, Wright and her team established training programmes for clinic staff and taught them how to perform the aspirations. Consequently the service brought about major efficiencies and cost savings for patients and the health authorities.

A simple culture transport medium

"However, aspirates still need TB culture and clinic staff have no access to culture mediums. We therefore developed an inexpensive transport medium in our laboratory which is easy to prepare and does not require refrigeration. The medium keeps the mycobacteria viable for seven days at room temperature and it carries minimal risk of contamination. The medium was initially intended for culture testing as an inexpensive transport bottle, thereby increasing the feasibility of diagnosing tuberculosis at primary health care level. At present we are testing a new transport method whereby the aspirate is directly deposited on special filter paper for subsequent analysis. A sample thus transported carries no infection risk and can even be sent by mail for further testing in routine laboratories in countries with limited resources and infrastructure."

While fine needle aspiration biopsies offer a valuable specimen collection technique, Wright points out that culture confirmation, mycobacterial speciation and drug resistance testing are often unavailable in TB endemic areas, resulting in unacceptable diagnostic delays. "For instance, culture results may take up to six weeks. While diagnosis and the detection of drug resistant TB can be accelerated significantly by using PCR, this is a very expensive, time-consuming and technically challenging technique which is inappropriate in routine laboratories, especially in countries with limited laboratory resources."

Seen on the photo are, standing at the back, Profs Colleen Wright, Rob Warren and Ben Marais with Ms Kim Hoek in front at the Rotorgene, a high resolution melting apparatus.

A new technique for rapid diagnosis

With the cooperation of Profs Rob Warren and Ben Marais, she recently set out to develop and test a new technique that provides a rapid and accurate diagnosis of mycobacterial tuberculosis, using routinely collected fine needle aspiration samples which were directly inoculated into the liquid transport medium, developed in the Faculty.

The new technique utilizes the melting profile or dissociation of double-stranded DNA, which is specific for each species of mycobacteria, using fluorescent dye as a marker. "This technique is rapid and simple and the equipment required for high resolution melting is relatively inexpensive and can be used in routine laboratories. Up to 72 samples may be processed in a cycle and the whole process takes approximately three hours," she says.

With Warren and Marais as her supervisors, Wright recently completed a PhD thesis on the above approach.

She says this whole new approach to TB diagnosis was developed in response to a real problem, faced by clinicians who work with TB patients in resource-limited environments every day.

She believes that this approach may offer a solution to their problems and accelerate the diagnosis of TB significantly once the techniques are fully implemented. T

Wright, in cooperation with the SU Division of Nursing, is currently preparing a one-week course on fine needle aspiration biopsies, the main indication of which will be TB nodes. The course is aimed at professional nurses and will be administered by StellMed. For further information, please contact Sonja Niemandt at 021 9389602.

New laboratory accelerates *TB diagnosis*

If South Africa is to win the fight against TB, the country needs to strengthen laboratory services and simultaneously improve infection and cure rates, experts have warned. This is no longer an elusive goal, thanks to modern technology and laboratory facilities, recently acquired by Tygerberg Hospital.

A new PCR laboratory, recently installed in the Medical Microbiology Division of the NHLS laboratories in Tygerberg Hospital, is set to make an important contribution towards addressing some of the most persistent problems that have hampered effective management and control TB in South Africa. This includes long delays in diagnosis and early detection of drug-resistant disease.

Conventional methods for diagnosing TB have always had severe limitations because it involves growing a sputum sample in the laboratory over periods that may range from two to six weeks. Consequent delays in treatment meant that an infected person would continue to transmit the airborne infection to others in his or her home or community.

However, over the past few years, research has shown that thousands of lives can be saved by using new molecular technology techniques to cut delays in the diagnosis of the disease and detect signs of drug-resistant TB at an early stage.

The recent introduction of a new, highly sterile laboratory in Microbiology has now provided scientists and medical technologists in the division with the means and the ability to utilise this new technology to the advantage of Tygerberg clinicians and their patients. This means that diagnosis of TB and the identification of first line drug susceptibility for TB drugs such as rifampicin and INH have been accelerated significantly, says Mrs Corné Rautenbach, a medical technologist who has helped to set up the new PCR laboratory in the division.

By using a relatively new PCR technique, known as the HAIN technique, Rautenbach says it is now technically possible to diagnose *M. tuberculosis complex* and identify first line sensitivities within 24 hours on smear positive sputum samples. For smear negative samples, the sample is first cultured in liquid media to obtain sufficient bacilli for molecular detection "Since the HAIN technique involves a long and very detailed process, and is very expensive, it is not cost-effective to perform on only a few sputum samples every day. We therefore set one day per week aside to process a large batch of samples. This means that we can present clinicians with a diagnosis and first line sensitivities within a week."

Previously, this process could take from four to eight weeks. "It involved growing sputum cultures in the laboratory – a process that takes from two to six weeks. If a sample was smear positive, the laboratory still had to determine whether it was M.TB. However, since the facilities for this test was not available at Tygerberg Hospital, the samples had to be sent to Groote Schuur Hospital for testing. This took another week. Then a further week's work was required to identify drug sensitivities.

"Clinicians therefore had to wait up to eight weeks for a final diagnosis and an indication of drug sensitivities".

All of this has changed with the introduction of the sophisticated new molecular techniques for the identification of mycobacteria from smear positive cultures, and the application of molecular techniques for direct detection of first line sensitivities, Rautenbach says.

Although the new technology for rapid detection (the HAIN technique) has been available for about two years, it could not be used by the Microbiology laboratory until the division had access to appropriate laboratory facilities. "The test must be done in an extremely sterile environment to prevent cross-contamination. Therefore a new laboratory had to be built within the division to enable us to employ the technique."

The NHLS provided the funding to build and equip the laboratory during the second part of 2008, and operations were gradually phased in during the first months of this year. The facility enhances the research capacity of the Division, and molecular diagnostic tests for other infectious diseases will also be implemented in the near future.

Mrs Corné Rautenbach, medical technologist in the Microbiology division, in the modern new PCR laboratory. Left in the picture is Ms Yvonne Prince and right, at the back is Ms Wilma van der Horst, both of the division.

ZAMSTAR

a search for novel ways to reduce TB and HIV

The huge Zamstar study, which is conducted at community sites in Zambia and the Western Cape and includes 120 000 participants, has recently reached its first milestone.

A huge TB and HIV reduction study, collaboratively conducted by Stellenbosch University's Desmond Tutu TB Centre, the University of Zambia School of Medicine and the London School of Hygiene and Tropical Medicine, recently reached a milestone when the first part of the study – comprising various community interventions – was completed.

Known as Zamstar (Zambia/South Africa TB and AIDS Reduction), the study was started in conjunction with Zambart at the University of Zambia in 2005, with funding that was allocated by the CREATE consortium specifically for an investigation of novel ways to reduce TB.

The Zamstar study is a community-randomized trial, the first part of which comprised specific interventions at 24 sites – 16 in Zambia and eight in the Western Cape. The interventions included strategies to enhance the detection of TB through increased testing and diagnosis; household interventions such as the testing of people who have been in contact with TB patients, and a strengthening of clinic services - specifically activities to strengthen the health care system.

The interventions have been in place from 2006 until 2009 with DTTC staff working in close collaboration with national, provincial and local departments of health.

With the study now entering the next stage, various measures will be employed to measure the efficacy of the different interventions. The primary measure will consists of HIV and TB prevalence surveys in all the communities which have been taking part in the study to determine if the interventions were successful in decreasing the prevalence of HIV and TB. Secondary outcome measures will include tuberculin skin test surveys in primary school children which will measure the annual risk of infection, i.e. TB transmission, and follow-ups of a cohort of individuals in every community to measure the transmission of TB and HIV, as well as stigma in the household.

Picture: Damien Schumann

Zamstar on the way of completion! Principal investigator, Professor Nulda Beyers of the Desmond Tutu TB Centre, at the recently held four day training course on the upcoming Prevalence Survey.

The prevalence survey will focus on a comparison of baseline data - gathered at the beginning of the study - with new data on prevalence.

An exceptional feature of the Zamstar study, is the magnitude of the survey which allows for 40 000 people at the eight South African sites, and 80 000 people at the sixteen Zambian sites, to be tested. The tests will not only cover TB, but also include testing for HIV, blood sugar levels and other health indicators such as weight and height.

The participants expect the results of the prevalence survey to provide them with information on the efficacy of the interventions. However, it will also provide essential prevalence information needed for the planning of health care initiatives. This part of the study will be conducted in collaboration with the health department of the City of Cape Town and the Provincial Health directorate. At the same time, the secondary outcome cohorts will continue to gather more information on the transmission of TB and HIV/AIDS amongst individuals.

The prevalence survey, which will be conducted as a cross sectional study, will run from late 2009 until the end of 2010 and will signal the conclusion of the Zamstar study.

Gedeelde kundigheid

Die Universiteit Stellenbosch se TB-groep deel jaarliks hul kundigheid op die gebied van pediatriese TB tot voordeel van Afrika en ander ontwikkelende lande waar TB endemies is.

Die kundigheid van die pediatriese TB-groep in die US se Departement van Pediatrie en Kindergesondheid word vir die afgelope drie jaar op jaarlikse basis deur die *International Union Against Tuberculosis and Lung Disease* ingespan om 'n opleidingswerkswinkel aan te bied vir verteenwoordigers van lande oor die hele wêreld.

Prof Ben Marais, die fasiliteerder van hierdie werkswinkels, sê pediatriese TB is jare lank oor die hoof gesien in TB-beheerprogramme, hoofsaaklik omdat kinders se tuberkulose selde met roetine sputummikroskopie ondersoek gediagnoseer kan word en min bydra tot die verspreiding van TB binne gemeenskappe. Oor die afgelope jare het 'n sterker bewustheid ontwikkel van die ernstige siektetoestande en hoë sterftesyfer onder jong kinders wat TB opdoen. Dit het die soeklig gefokus op die hardnekkige probleme wat verband hou met kinder-TB – onder meer hoe moeilik dit is om 'n definitiewe diagnose sonder toegang tot gespesialiseerde ondersoeke te maak. Daar is egter heelwat wat gedoen kan word om kinders se toegang tot voorkomende behandeling en toepaslike hantering te verbeter, selfs in arm lande en/of in afgeleë gebiede.

Die Wêreldgesondheidsorganisasie (WGO), sowel as die *International Union Against Tuberculosis and Lung Disease* (IUATLD) het egter oor die laaste jare groter erkenning begin gee aan kinder-TB om sodoende die toegang van kinders tot beter TB-diagnose en optimale behandeling te verbeter. Hierdie behoefte word veral beklemtoon deur die wisselwerking tussen die MIV- en TB-epidemies wat Suid-Afrika en die res van die sub-koninent teister. Navorsingstudies dui byvoorbeeld op 'n hoë voorkoms van TB-verwante siektes en sterftes in MIV-geïnfekteerde kinders - tot 20 keer hoër in MIV-geïnfekteerde kindertjies onder een jaar as in dié kinders wat nie geïnfekteer is nie.

Die reuse bydraes wat US-klinici en navorsers, soos proff Peter Donald en Johan Schoeman, oor baie jare op hierdie gebied gelewer het, en die uitgebreide daaropvolgende ervaring van die Universiteit se TB-groep, is van groot waarde vir die internasionale gemeenskap, veral in lande met beperkte hulpbronne en 'n hoë voorkoms van TB. Die IUATLD het die Universiteit dus drie jaar gelede gevra om die jaarlikse werkswinkel aan te bied, wat daarop gerig is om klinici met 'n belangstelling in kinder-TB toe te rus met die nodige kennis en vaardighede om 'n daadwerklike verskil te maak in hul onderskeie lande van herkoms.

Die kursus is gewoonlik maande vooruit volbespreek. Dit is vanjaar bygewoon deur afgevaardigdes uit Namibië, Nigerië, die Verenigde Koninkryk, Indonesië, die Verenigde State, Suid-Afrika, Swede, Botswana, Malawi, Duitsland, Kanada, Mosambiek, Tanzanië, Kenia, Australië, Uganda, Nederland, Brazilië, Bangladesh en Indië. Prof Ben Marais is as kursusleier bygestaan deur proff Simon Schaaf en Robert Gie, wat jare se kliniese ervaring met die deelnemers kon deel. Die interaktiewe aard van die kursus en die bespreking van interessante kliniese gevallestudies was, soos in die verlede, besonder gewild onder die deelnemers.

"Ons glo dat die kursus 'n aanduiding is van die geleenthede wat bestaan vir opvoedkundige inrigtings om navorsing te doen wat relevant is tot die gesondheidsuitdagings in ons land, die Afrika-vasteland en die res van die ontwikkelende wêreld," sê Marais. "Dit is eweneens belangrik om die resultate van sulke studies en die kundigheid van betrokkenes te deel tot voordeel van die mense wat ons dien." Hierdie beginsel is onderliggend tot al die navorsing en opleiding wat die Fakulteit se akademici en klinici doen op die gebied van kindersiektes". T

Kursusgangers by die jaarlikse internasionale opleidingskonferensie vir pediatriese TB wat vanjaar in September by Goudini Spa gehou is.

Kicking a goal for TB

Stellenbosch University's Desmond Tutu TB Centre – located in the Faculty of Health Sciences – has a way of making people sit up and take notice of TB and the damage it causes to the lives of people and to the communities where they live.

Their efforts to promote awareness of the epidemic started some years ago with photographic exhibitions illustrating the devastating effect of TB in Western Cape communities. Then they installed a typical township shack, decorated with striking photos from these exhibitions, in the foyer of the FHS Clinical Building on the Tygerberg Campus. The same shack was eventually transported to the World Tuberculosis Conference in France and afterwards to an international Aids Conference in Australia and to the Netherlands.

The Centre's latest awareness campaign is due to be launched next year to coincide with the 2010 Soccer World Cup in South Africa and uses soccer as a game and soccer balls in particular, to carry strong TB messages across all nine of the country's provinces.

"We were looking at ways to link TB awareness to the Soccer World Cup which represents such a seminal event in our country. That was how we came upon the idea of utilising soccer balls to convey TB health messages that will encourage people to seek treatment timeously," says the project manager, Mrs Wena Moelich, who has played a leading role in the Centre's various awareness campaigns. "We found that the diamond-shaped segments of a soccer ball were ideal for this purpose."

The different symptoms of TB are therefore portrayed on the different segments of the ball in the form of animated character drawings, i.e; '*If you've been coughing for more than 2 weeks, getting thinner, sweating at night, not eating or have a sore chest, you must go to your nearest clinic and be tested for TB"* and *"HIV - get tested.*"

These 'life-saving' soccer balls will be distributed to 250 000 learners across South Africa. Wena says the message, *TB can be cured*, will hit home when teams distributing the balls take along portable soccer goal posts to give learners the opportunity to kick soccer balls at the goal posts and physically enact the message: *I can 'kick' TB! TB is a curable disease*.

In the meantime, the national Department of Health has become a partner of Stellenbosch University to make *Kick TB 2010* one of the largest national TB campaigns the country has ever seen.

As patron of the project, Archbishop Emeritus Desmond Tutu will kick off the campaign by kicking the very first *Kick TB 2010 soccer ball* at the national launch on World TB Day in March 2010.

As the campaign is rolled out across the country, a promotional truck will distribute *Kick TB 2010* soccer balls and the TB message at hundreds of schools in all the different provinces. Each school will also receive an educational DVD for future use. The campaign will only end in November 2010.

"Sport is a universal language. At its best it can bring people together, no matter what their origin, background, religious beliefs or economic status to promote education, health, development and peace" – former Secretary General of the United Nations, Kofi Annan.

Ongeëwenaarde interdepartementele samewerking kenmerk Fakulteit se

MIV-benadering

Hoewel Suid-Afrika een van die mees omvattende MIV/Vigs-behandelingsprogramme ter wêreld het en nagenoeg 850 000 pasiënte in die openbare gesondheidsektor (volgens regeringsyfers) antiretrovirale middels ontvang, verteenwoordig die pandemie steeds die grootste gesondheidskrisis in die land.

Die nasionale gesondheidsdepartement het onlangs erken dat daar 'n geweldige agterstand is in die behandeling van Vigspasiënte, hoofsaaklik as gevolg van tekort van 'n bykomende een miljard rand om tred te hou met nuwe pasiënte wat binne die volgende jaar behandeling sal moet kry.

Volgens persberigte het die regering in 2009 nie eens 50% van sy doelwit bereik om nagenoeg 1,4 miljoen mense met antiretrovirale middels te behandel nie. Dit blyk derhalwe onmoontlik te wees om die doelwit vir 2010 – om 80% van Vigslyers te behandel – te bereik.

Intussen word die krisis vererger deur die probleme wat sommige provinsiale gesondheidsdepartemente ervaar ten opsigte van die beskikbaarheid van middels, wat aanleiding gee tot die onderbreking of opskorting van behandeling – soos vroeër vanjaar en verlede jaar in die Vrystaat gebeur het. Dit het aanleiding gegee tot groot getalle sterftes. Die onderbreking van behandeling gee ook aanleiding tot middelweerstandigheid – 'n groeiende probleem in Suid-Afrika.

Vigskenners dring voorts daarop aan dat die regering sy riglyne vir die aanvang van behandeling moet aanpas om die hoë vlakke van tuberkulose ko-infeksies te voorkom. Daar is aanduidings dat 85% van MIV-positiewe pasiënte ook met TB geïnfekteer is.

Die uitdagings wat die Vigspandemie aan die gesondheidsektor stel is in 2009 weereens weerspieël in die navorsingsuitsette van die verskillende departemente en afdelings van die Universiteit Stellenbosch se Fakulteit Gesondheidswetenskappe.

Voordragte by die Fakulteit se Akademiese Jaardag dui daarop dat bykans elke departement en afdeling betrokke is by navorsing wat verband hou met MIV, sowel as die meegaande TB-epidemie. Dit dui ook op ongeëwenaarde interdepartementele en interdissiplinêre samewerking, en samewerkingsvennootskappe met internasionale instansies.

Daar is aanduidings dat 85% van MIV-positiewe pasiënte ook met TB geïnfekteer is.

Navorsing wat by die Fakulteit gedoen word, dek die hele MIV-spektrum – onder meer nuwe benaderings om beter voorkoming van die siekte in die hand te werk; beter diagnose, berading en behandeling – veral om die oordrag van die virus tydens geboorte te voorkom; stresfaktore wat 'n rol speel in die lewens van geïnfekteerde kinders en adolessente; suksesse en leemtes in die regering se MIV/Vigs behandelingsprogram oor die afgelope vyf jaar; dieet en MIV; tientalle interdepartementele kliniese studies, veral ten opsigte van pediatriese MIV; 'n groeiende getal studies ten opsigte van antiretrovirale middelweerstandigheid, sowel as studies wat fokus op die tuberkulose ko-epidemie.

KORTLIKS

Vigssterftes

Die omstredenheid en onsekerheid wat statistiek tov Vigssterftes in Suid-Afrika kenmerk het beslag gevind in 'n navorsingstudie van dr Lené Burger van Geregtelike Geneeskunde in die US FGW wat daarop dui dat die impak van MIV op sterftes in die land, ernstig onderskat word in die amptelike sterftesyfers van Statistiek Suid-Afrika.

Burger het hierdie navorsing in samewerking met navorsers van die Universiteit van Oxford in Engeland, die MNR in Suid-Afrika en prof Jimmy Volmink, visedekaan (Navorsing) van die FGW, gedoen.

In 'n Jaardagvoordrag het Burger daarop gewys dat Statistiek SA se syfers vir 2006 aandui dat slegs 2,4% van sterftes in die betrokke jaar die gevolg was van MIV/Vigs. Wiskundige berekenings wat op vroeëre data en 'n indringende ondersoek van mediese rekords gebaseer was, het egter getoon dat 61% van Vigssterftes in 2006 verkeerdelik geklassifiseer en toegeskryf is aan ander siektes soos tuberkulose, longontsteking of diarree.

Burger en haar medewerkers het die mediese rekords van mense wat oor 'n tydperk van een jaar in 'n spesifieke geografiese gebied van Kaapstad gesterf het, onder die loep geneem en vergelyk met doodsertifikate van dié mense. Uit 129 van die sterftes wat hulle ondersoek het en wat volgens die mediese rekords aan MIV/Vigs toegeskryf word, word 32 op die doodsertifikate toegeskryf aan infeksiesiektes soos tuberkulose en diarree-siektes en 10 aan nie-oordraagbare siektes.

"Hierdie empiriese studie bevestig dat die impak van MIV op sterftes in Suid-Afrika ernstig onderskat word in amptelike statistieke," sê sy.

MIV en 'n rare okulêre siekte

Dr Sven Obholzer, 'n botallige kliniese assistent van Namibië wat tans aan die US se Afdeling Oogheelkunde verbonde is,

het in 2009 die hoogste toekenning van die SA Gloukoomvereniging ontvang vir 'n gevallestudie oor 'n baie rare okulêre komplikasie van MIV wat nog nie voorheen in die literatuur beskryf is nie.

Obholzer het 'n voordrag gelewer by die Vereniging se kongres in 2009 met die titel, *Bilateral Neovascular Glaucoma in a Young HIV Positive Patient.*

Die prys wat hy vir hierdie voordrag ontvang het is deel van 'n kompetisie wat deur Alcon geborg word vir 'n uitsonderlike voordrag oor 'n unieke en ongewone gloukoom-gevallestudie.

Obholzer is 'n kliniese assistent van Windhoek. Sy studies aan die Universiteit Stellenbosch word deur die Namibiese Departement van Gesondheid en Welsyn geborg in terme van 'n ooreenkoms tussen die US se Afdeling Oogheelkunde en die Namibiese regering.

Enkele kliniek vir TB en MIV pasiënte in Worcester

Die hoë voorkoms van tuberkulose in mense wat met MIV geïnfekteer is, stel talle nuwe eise aan die gesondheidsektor – veral op die platteland waar land afstande en vervoeronkoste pasiënte dikwels verhoed om gesondheidsorgklinieke te besoek. Dit kan aanleiding gee tot die onderbreking van behandelings of selfs 'n gebrek aan behandeling.

In 'n poging om hierdie probleem aan te spreek, is 'n enkele kliniek vir MIV-pasiënte wat ook aan tuberkulose ly, onlangs by die Worcesterhospitaal ingerig danksy befondsing van die Holland/Stellenbosch Mediese Stigting.

Hierdie ontwikkeling het talle positiewe implikasies vir pasiënte en die Departement Gesondheid. Dit beteken onder meer dat pasiënte nie meer die ongerief en ekstra vervoerkostes het wat twee besoeke aan die hospitaal meebring nie en dit beteken besparings vir die Departement omdat dit onnodige duplikasie van dokumentasie en behandelings uitgeskakel.

Die eerste pasiënte kon die kliniek reeds in Julie 2009 begin besoek en 'n voltydse verpleegkundige het in September begin om die fasiliteit voltyds te beman.

Op die foto bo is gaste wat by die bekendstelling van die kliniek teenwoordig was. Hulle is, voor vlnr: Dr S Wentler en prof Hoffie Conradie; in die twee ry, vlnr, dr Therese Fish, mee Lindsay-Michelle Meyer en Denise Lynch, en agter, vlnr: drr Collette Gunst en Lizette Phillips en Sr Anel le Roux.

'n Ander belangrike komponent van die projek is die opleiding wat verskaf word vir tuisversorgers en pesoneel wat met MIV positiewe persone werk, tov TB en die behandeling daarvan by MIV-positiewe pasiënte.

Die Holland/Stellenbosch Mediese Stigting het fondse van die Backhuys Roosenboom Stichting in Nederland ontvang om die kliniek te befonds. Die projek word deur die US se Ukwanda Sentrum vir Landelike Gesondheid geadministreer.

Searching for a new approach to keep immune cells alive

In an innovative collaboration between science and medicine, Drs Richard Glashoff and Hayley Ipp of the Virology division, SU Faculty of Health Sciences, are working together to find new and different ways to approach the problem of HIV/Aids treatment, especially in South African patients.

The clinical approach they have in mind is based on scientific data and is aimed at keeping the immune cells of HIV-infected patients alive for as long as possible to delay the start of antiretroviral treatment, or as an adjunct to ARV treatment.

This project, which is already showing promising results, recently received funding of R3.8 million for a period of three years from the SA HIV/Aids Innovation Research Platform (SHARP). Glashoff says SHARP is an initiative of the Department of Science and Technology to sponsor innovative new HIV/Aids research. The platform is linked to Life Lab, a bio-innovation incubation laboratory.

As a medical doctor who specialized in Haematology, Ipp started working with Glashoff, a scientist in immunology, with the specific aim of helping patients on ARV treatment. "Recent reports have shown that people on long-term ARV treatment tend to die from causes not related to Aids, such as strokes, heart attacks and other conditions related to inflammation.

"Our approach is to dampen the inflammation which usually carries on despite ARV treatment."

She says they hope to develop a drug that will be useful in South African conditions, especially in rural areas. "That means no injections. Hopefully, it will comprise an oral packaging or oral spray."

The two researchers believe that it is important for clinicians and scientists to work together in the search for innovative solutions to the medical problems such as HIV/Aids.

"To find something that will enable people to live with the HI virus without it destroying the immune system is indeed a very exciting prospect," Ipp says.

Some four years after the roll-out of South Africa's HIV treatment programme, and intensified efforts to prevent mother-to-child transmission of the virus, HIV infection remains a major contributor to sickness and death in infants and children – not only in South Africa, but in countries across the African continent. HIV experts of the Stellenbosch University Faculty of Health Sciences, in partnership with international organizations, are involved in major programmes to improve paediatric HIV care and treatment in South Africa and in other countries in Africa.

Transforming the care and treatment of infants with HIV

Over the past three years, more than 370 health care workers from African countries as far afield as Rwanda, Ethiopia and Nigeria, were trained at the Stellenbosch University's Faculty of Health Sciences to enhance and develop their technical and practical skills with regard to the initiation and implementation of comprehensive paediatric HIV treatment and services in their countries of origin.

They visited the Faculty as part of our 'South to South Partnership for Comprehensive Paediatric HIV Care and Treatment' (S2S) programme, a paediatric HIV initiative that was launched in 2006 to 'transform training into performance and service delivery' in African countries. The programme is funded by the United States Agency for International Development (USAID) and developed in partnership with Columbia University, New York.

Managed by Dr Liezl Smit of the SU Department of Paediatrics and Child Health, S2S was launched by Prof Mark Cotton and paediatric HIV specialists of Stellenbosch University, in partnership with Prof Elaine Abrams of the International Columbia AIDS Programme (ICAP), as a paediatric HIV care and treatment training initiative.

The project was a response to the huge gap that exists between the number of HIV infected children receiving care and treatment compared to adults in Africa. Fewer than 10% of the patients, who are currently receiving antiretroviral treatment, are children. At the same time, new approaches towards paediatric HIV care, treatment and prevention have become imperative to improve mortality rates in babies born with HIV infections. This was specifically indicated by new research – conducted by Cotton and Dr Avy Violari of the University of the Witwatersrand – which shows that babies born with HIV infection should receive immediate antiretroviral treatment to improve their chances of survival, and that treatment should not be delayed until they show symptoms of HIV, such as a drop in CD4 counts. In response to this research, the World Health Organization, and experts from the USA and Europe have changed paediatric HIV treatment guidelines to recommend immediate treatment.

Fewer than 10% of patients in Africa who are receiving antiretroviral treatment, are children.

South Africa has made tremendous strides since the initiation of antiretroviral therapy into the public sector in 2004 and national ARV coverage has increased from 2.7% in 2003 to an estimated 32% in 2006. And although PMTCT coverage in SA has reached 57% of the 220 000 pregnant women living with HIV in 2007 - an increase from 15% in 2004 - an estimated 45,000 children were born HIV-infected in 2007/08.

In 2008 the number of children (ever) on HAART increased by 20,500, but the ratio of new infections to starting on ART

remained 2.2:1, highlighting the need for continued effort to prevent HIV infection in children and to ensure timely access to treatment to prevent sickness and death.

Against this background it was decided to re-launch South to South in March 2008 to focus exclusively on the needs of South Africa and to expand the focus of S2S to include the Prevention of Mother-to-Child Transmission of the HIV (PMTCT), to ensure timely quality care and treatment of HIV-infected children, as well as supporting TB/HIV integration through a comprehensive family centered approach. Since then, the team has grown from three permanent members to 22 while Dr Liezl Smit was appointed clinical programme director and Ms Carin du Toit operations director.

S2S provides technical, programmatic, capacity building and systems support to initiate, expand, link and/or deepen relevant family-centered services to rapidly increase HIV prevention, care and treatment services for pregnant women and young children.

In practical terms, this means that multidisciplinary S2S-teams, comprising doctors, nurses, psychosocial and monitoring specialist, work in close collaboration with Department of Health and USAID partners at HIV and primary health care clinics in areas like Gauteng, Limpopo, North West, the Northern Cape and Mpumalanga where they offer onsite training, clinical assistance and mentorship to health care professionals who deal with families infected and affected by HIV.

S2S also continued to offer a one week Paediatric HIV management training course at Tygerberg Children's Hospital and has piloted a one week Performance and Capacity Enhancement workshop (PACE). The focus of this workshop is on developing and supporting health care workers and fostering the skills that enhance their capacity to work effectively and to remain engaged in their work, motivated and healthy, while working in an environment that is often physically and emotionally demanding. The PACE workshop recognizes that when health workers perform above expectations, it is often due to powerful people skills, strong leadership and teamwork. Healthcare workers can integrate effective interpersonal skills and psychosocial principles into practical, person-centered, result-driven interventions to produce positive outcomes in the workplace.

Dr Helena Rabe of the Department of Paediatrics and Child Health explains the clinical treatment of the HIV infected babies in the Tygerberg Children's hospital to a group of students from Limpopo and North West Provinces.

ASSESSING THE QUALITY OF ASTHMA CARE

The South African Thoracic Society recently published new guidelines for chronic asthma in adults and adolescents and for the first time funded a multifaceted dissemination and implementation strategy in the Western Cape. Prof Bob Mash of the Division of Family Medicine and Primary Care, Stellenbosch University, was the chairman of the Asthma Guidelines Implementation Project (AGIP). In this article he discusses the recently concluded project, its outcomes and recommendations.

Asthma is the eighth leading contributor to the burden of disease in South Africa and is the second most important chronic disease after HIV/AIDS.

Asthma is often not considered particularly serious, but it causes significant morbidity in young and working-age adults that adds to the number of disability-adjusted life years in relation to other chronic diseases. The prevalence of recent wheeze in adults is reported as 14.4% in males and 17.6% in females, with a self-reported prevalence of asthma of 3.7% and 3.8% respectively. In the Western Cape the prevalence of asthma among children aged 13 - 14 years was 14.4%, slightly above the global average of 13.7%. The prevalence of asthma in children is rising in sub-Saharan Africa.

Access to essential drugs for asthma, including inhaled steroids, is better in South Africa than in other sub-Saharan countries. Because of the overwhelming HIV/AIDS epidemic, and the primary health care services' focus on acute episodic conditions, chronic asthma has not received priority attention.

It was against this background that the Asthma Guidelines Implementation Project (AGIP) was established, shortly after publication of the SA Thoracic Society's new asthma guidelines. Apart from Mash, the steering committee comprised two pulmonologists, Prof Elvis Irusen of the SU Faculty of Health Sciences and Prof Gillian Ainslee of the University of Cape Town; another family physician of the SU Faculty of Health Sciences, Dr Michael Pather; Prof Angeni Bheekie, a pharmacist of the University of the Western Cape; Ms Pat Mayers of Nursing and Midwifery at UCT and a project co-ordinator, Sr Hilary Rhode of SU.

At the outset, the committee developed an audit tool to assist primary care facilities with quality assessment and improvement, aimed at eliciting reflection on the quality of care and to plan improvements at facility level. As the first evaluation of the quality of asthma care at provincial level in South Africa, the audit tool sets a benchmark for future audits and gives valuable insights into asthma care. As the Western Cape is better resourced than other provinces its quality of asthma care is likely to be better than elsewhere.

District health services in the Western Cape province serve five million people, of whom 80% are uninsured and depend on the public sector. The province is divided into six districts, each of which is served by a network of mobile clinics, clinics, community health centres and district hospitals. Clinical nurse practitioners supported by medical officers and pharmacists provide first-line primary care. Chronic asthma is managed by primary care providers, and acute asthma by district hospitals and, if necessary, regional or tertiary hospitals. Patients with complicated or difficult chronic asthma may be referred to specialists at regional or tertiary levels.

Auditing primary care facilities

The AGIP team audited all primary care facilities that managed adult patients with chronic asthma within all six districts of the Western Cape following a specific quality improvement cycle, based on the newly published chronic asthma guidelines and literature on asthma audits.

This included the development of criteria for structure, process and outcome and performance levels to create target standards for, amongst others, the prescription of sufficient inhaled steroids associated with better quality of life, better control, fewer symptoms and fewer hospitalisations or exacerbations.

Structural criteria focused on the availability of equipment, patient education material and medication while process criteria focused on key activities recorded in the medical record. Outcome criteria relied on interviewing patients on their level of control using the validated Asthma Control Test questionnaire and score. Patients were asked about exacerbations and hospitalisations in the past year and their understanding of reliever versus controller medication. Each facility was expected to include 20 randomly or systematically selected asthma patients.

The final audit tool consisted of data collection sheets, patient questionnaires in English, Afrikaans and Xhosa, reminders of how to calculate the results, a one-page summary sheet of the final results, and a user's guide. All the materials are available for downloading on the Internet at www.pulmonology.co.za.

The audit was piloted in a rural district before being finalised.Introductory workshops were held in the six districts, and primary care providers involved in asthma care were invited to attend. Participants were mainly nurses, but included doctors and pharmacists who came from mobile clinics, fixed clinics, community health centres and district hospitals. They were trained to use the audit tool, the principles of the quality improvement cycle and how to collect and calculate the audit results. The AGIP project manager remained in telephonic contact with the participants and encouraged facilities to complete and return the audit data. Outreach visits were conducted on request to assist with the audit process. In the metropole data collection was more rigorously supported as part of a doctoral research project.

Practitioners must be helped to distinguish between asthma and COPD in terms of diagnostic criteria, assessment methods and treatment options.

The audit was done in 46 facilities and with 957 patients.

The target was only reached for 3 of the 16 structural criteria: the availability of a height measure in the facility, oxygen and a nebuliser in the emergency room. Of seven process criteria the target was only reached for the controller/reliever ratio. None of the outcome criteria was achieved.

The Western Cape has better health worker resources than other provinces, and these results would probably be worse elsewhere.

Outcomes of care

The many deficiencies in quality of care contributed significantly to the poor outcomes. Although up to 70% of asthma patients can be well controlled when current guidelines are followed, only 31.5% of patients in this audit achieved this outcome. This finding is supported by high rates of hospitalisation, with almost one in five patients having been hospitalised during the past year and one out of every six visits to the facility being for an exacerbation. Emergency visits and hospitalisation result in hugely increased health service costs. More effective routine care would improve patient quality of life and save costs.

Many patients appeared to understand the difference between their relievers and their controllers, although this was determined by the interviewer and was open to subjective interpretation. Better adherence can be expected in those who understand the difference between reliever and controller.

Diagnosis of asthma

Patients were often labelled 'asthmatic' one month and 'chronic obstructive pulmonary disease (COPD)' the next. Primary care practitioners do not seem to make this distinction clearly, and this is reflected in one in five patients having an inconsistent diagnostic label over the audit period. There was a significant correlation between the percentage of patients with a consistent diagnosis of asthma and the control of asthma, which implied that as the consistency improved the level of control deteriorated. If all the audited patients had a consistent diagnosis of asthma the percentage that was well controlled might be as low as 24%. Practitioners must be helped to distinguish between asthma and COPD in terms of diagnostic criteria, assessment methods and treatment options. In our setting many patients develop COPD as a result of TB, exposure to the burning of biomass and mining and not only prolonged tobacco smoking. Smoking

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The representatives of Stellenbosch University were from left to right: Profs Bob Mash, Elvis Irusen, Dr Michael Pather and Sr Hillary Rhode.

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status, a key asthma trigger and pointer to the possibility of COPD, was documented in just under a third of patients.

Assessment of control

The level of control was rarely assessed, and a typical assessment would read 'known asthmatic'. If the patient appeared stable at the consultation, his or her medication was simply repeated. Health workers may not have been trained in how to assess control using simple questions and may not appreciate that variability in asthma symptoms necessitates asking about symptoms over the past four weeks and not just on the day the patient is seen. *The AGIP adapted the 20-second asthma check provided by the National Asthma Education Programme, which is congruent with the latest guidelines.*

Use of peak flow meters

Although cheap, peak expiratory flow (PEF) meters were only available in half of the consulting rooms and PEF was only recorded in about a quarter of all visits. The need for PEF meters remains controversial, as control of asthma can be adequately assessed using questions alone. It has therefore been argued that PEF meters are not essential for prescribing inhaled steroids, in contradiction to the recommendations of the national Essential Drug List (EDL). Nevertheless the PEF gives an objective and comparable measure of airways obstruction and identifies patients who may have significant airways obstruction without symptoms. Likewise there are a smaller number of patients whose symptoms are out of proportion to the objective clinical signs and PEF. *The PEF has additional diagnostic benefits and is essential in managing acute asthma. Each facility should therefore have a PEF meter, and if PEF is to be recorded as part of the consultation it should be easily available.*

Medication

Overall the availability of medication on the EDL was a strong point and may reflect its emphasis in provincial chronic disease policy during 2006 - 2008. Salmeterol availability was included in the assessment, although not on the primary care code, as it could be initiated by hospital-based physicians and obtained at primary care facilities. *The AGIP are motivating that long-acting beta-2-agonists (LABAs) be made more accessible to patients by family physicians prescribing them within the district health services. Guidelines support the use of LABAs with low or moderate doses of inhaled steroids rather than doubling the dose of inhaled steroids.*

Local studies have confirmed poor inhaler techniques among patients that contribute to poor deposition of medication and poor control. Seen on the picture is a medical student, doing his clinical training in the Worcester area, demonstrating the correct technique to a patient during a house visit.

Education on spacer and inhaler technique

Effective supply of medication and appropriate prescribing is worth nothing if actual delivery of medication to the lungs is poor. A neglected area of care was educating patients on how to use their delivery devices. Assessment of individual technique was seldom recorded, and few rooms had placebo metered dose inhalers (MDIs) to facilitate demonstration of the technique. The ability of staff to demonstrate the MDI is poor even when placebos are available. Local studies have confirmed poor inhaler techniques among patients that contribute to poor deposition of medication and poor control. Although patient education is highlighted in all guidelines, including the National EDL, the pharmaceutical depot had no provision for supplying facilities with placebo MDIs. The AGIP enabled staff to demonstrate the delivery devices and developed demonstration DVDs in local languages (see the Internet site: www.pulmonology.co.za). DVDs do not require the local staff to be proficient at

demonstrating the technique, and there is evidence that they are useful.

Whether all patients on inhaled steroids, or only those with a poor technique, should receive a spacer routinely, has been debated. Spacers have not been sufficiently available to provide one to each patient, and yet even in patients with a good inhaler technique they improve lung deposition considerably. Spacers also require a degree of technique, but reduce the need for co-ordination of actuation and inspiration and would also be easier for staff to demonstrate correctly. A single spacer will last for at least a year with minor cost in relation to improved control. Although non-valved spacers are cheaper, the valved spacer would support tidal breathing as an effective way of using the spacer. In a non-valved spacer, if the patient exhales first the medication may be blown out of the spacer. Providing a valved spacer to every asthma patient requiring inhaled steroids is therefore likely to be cost-effective. Alternatively dry-powder devices could be made available to improve lung deposition in selected asthma patients. These are not available in the public sector.

Supporting patient self-care and health literacy

Although just over half the consulting rooms had some educational material, very few had material in all the local languages. The province had no official health education materials for asthma before the AGIP, and therefore any materials were obtained *ad hoc* by the facility. It is therefore not surprising that only a small number of patients had a written self-management plan. The AGIP patient leaflet was designed to be personalised as part of a self-management plan. Group education was an option for urban CHCs, where large numbers of asthma patients attended on specific days, but not in the rural clinics and mobiles, where they attended randomly. The potential for group education in the urban setting led AGIP to develop a flip-chart and a structured educational programme. (See the Internet site: www.pulmonology.co.za)

Emergency care

Overall the provision of equipment for emergency care was good. This may reflect the historical emphasis on acute episodic health care.

Organisation of chronic care

The sustained implementation of innovations to improve chronic care depends on at least one person in the health facility having chronic care of non-communicable diseases as a long-term responsibility. Frequent rotation of nursing staff to different duties impedes the development of chronic care systems, and in most facilities there is no one with designated responsibility for asthma care.

Well-trained and supported clinical nurse practitioners are as competent as doctors in providing routine chronic care and may be better at patient education. However, doctors are required for the initial diagnosis, prescription of certain medication, and managing more complicated or difficult cases. Public sector pharmacists have not moved beyond dispensing to assist with educating patients on using medication and identifying those who need further assessment. T

Ten recommendations to improve asthma care

The implementation of 10 recommendations to improve asthma care requires a co-ordinated effort between the managers of the drugs and therapeutics committees, human resources and training, chronic care and district health services at the district, provincial and national levels. They are:

1. Train practitioners to distinguish between asthma and COPD and understand their different assessment and management. An AGIP desktop manual supports this decision making.
2. Train practitioners in how to assess the control of asthma.
3. Routinely provide all asthma patients on inhaled steroids with a valved spacer.
4. Make PEF meters and reference charts easy to order and available and ensure that they are available in the emergency room. A PEF meter should be available to every practitioner in their consulting room.
5. Include placebos in the provincial pharmaceutical catalogue and make them available through the pharmaceutical depot.
6. Consider the addition of dry-powder devices to the provincial pharmaceutical catalogue.
7. Provide practitioners with placebos, spacers, DVDs and the expertise they need to assess and demonstrate inhaler technique.
8. Consider making LABAs more accessible in the district health system via family physicians.
9. Improve patient education programmes by providing materials for use at individual and group level, in all local languages and available in a sustainable way through official channels.
10. Have at least one person in the facility with a specific long-term responsibility for the organisation and delivery of chronic care for non-communicable diseases. T

Wanneer pyn in die

Brandwonde veroorsaak folterende pyn – en om hierdie pyn te beheer wanneer 'n pasiënt se wonde versorg, en die verbande verander word, is een van die uitdagings waarmee gesondheidswerkers daagliks te make kry.

Wanneer kinders die slagoffers van brandwonde is – soos dit té dikwels in Suid-Afrika die geval is – word dit 'n uitdaging van dwingende erns.

Brandwonde moet daagliks versorg word om infeksies te voorkom en die genesingsproses te monitor. Omdat dié prosedure erge pyn en gepaardgaande angs veroorsaak, word die pasiënt vooraf behandel met 'n kombinasie van pynmedikasie en kalmeermiddels, maar dit is nie altyd toereikend nie.

Navorsing dui daarop dat sielkundige faktore dikwels die persepsie van pyn kan beïnvloed. So, byvoorbeeld, kan pyn vererger word deur angstigheid en die verwagting dat 'n prosedure soos wondversorging, pyn gaan veroorsaak. In teenstelling hiermee, kan pyn verminder word deur intervensies wat gerig is op sielkundige faktore, bv iets wat die aandag weglei van die pyn.

Om die potensiaal van pyn-afleiding te verken, het navorsers oor die afgelope jare begin kyk of die pynervaring nie dalk verminder kan word as pasiënte toegelaat word om in die skynwêreld van 'n rekenaarspeletjie te ontsnap terwyl hulle wonde versorg en verbande verander word nie.

Virtuele realiteit as 'n hulpmiddel in pynbeheer is aanvanklik in volwassenes getoets. Prof Karen Grimmer van die Universiteit van Suid-Australië in Adelaide, en buitengewone professor in die Afdeling Fisioterapie van die Universiteit Stellenbosch, was egter die eerste navorser om te toon dat kinders wat aan die folterende pyn van brandwondbehandeling blootgestel word, se pyn verminder kan word as hulle 'n speletjie in die virtuele ruim speel terwyl hul wonde versorg word.

Tydens 'n besoek aan die Afdeling Fisioterapie 'n paar jaar gelede, het Grimmer

virtuele ruim verdwyn

en prof Quinette Louw die moontlikheid ondersoek om hierdie studie navorsing in Suid-Afrika voort te sit, veral omdat die tegnologie van groot waarde kan wees in hierdie land, waar groot getalle kinders jaarliks brandwonde opdoen – gewoonlik as gevolg van brande in informele nedersettings of ongelukke met vuur of kookwater in die huis.

So het dit gekom dat een van Louw se studente, me Asha Parbhoo, 'n doktorale studie oor die onderwerp aangepak het. Hierdie studie is onlangs afgehandel en Parbhoo is tans besig om die resultate vir 'n PhD-tesis te verwerk.

'n Opkomende veld

Haar studie is die eerste groot studie van hierdie aard wat wêreldwyd gedoen is. Daar is trouens nog net agt studies in hierdie opkomende nuwe veld gedoen – die meeste daarvan met net een of twee pasiënte in ontwikkelde lande waar daar nie so 'n hoë voorkoms brandwonde is soos in Suid-Afrika nie.

Parbhoo, wat agt jaar lank aan 'n eenheid vir brandwonde verbonde was, het die studie by die Rooikruis Kinderhospitaal gedoen. Benewens 'n voorafgaande studie oor brandwonde in kinders, het sy uiteindelik 'n studiegroep van 108 kinders gekies uit meer as 1 000 kinders met brandwonde.

Sy het 'n voorafstudie gedoen om te bepaal wat die mees gepaste toetskaal is om pyn in die plaaslike bevolking te meet en toe hierdie skaal bevestig in 'n kohort van kinders wat by die Brandeenheid van die Rooikruis Kinderhospitaal behandel is. Parbhoo het die skaal gebruik om die vlak van die jong pasiënte se pyn te meet en toe gekyk of 'n virtuele realiteitspeletjie kan help om die pyn te verminder. Die drie-dimensionele speletjie word op 'n rekenaar, deur middel van 'n spesiale kopstuk met 'n bril gespeel.

In een deel van haar studiegroep het sy die prosedure getoets terwyl die kinders se verbande verander is, en in die ander deel van die groep is dit getoets terwyl die wonde skoongemaak is. Albei hierdie groepe het vooraf pynmedikasie ontvang. In 'n kleiner studie het sy ook gekyk wat gebeur as die kalmeermiddel in die kinders se medikasie onttrek word wanneer hulle aan die virtuele realiteitspeletjie blootgestel word tydens behandeling.

Met behulp van die pynskaal het sy gevind dat kinders wat pynmedikasie ontvang het en aan die virtuele realiteitspeletjie blootgestel is terwyl hul verbande verander is, 79% minder pyn ervaar het as die kinders wat slegs pynmedikasie ontvang het. In laasgenoemde groep was daar 'n 49% toename in pyn terwyl hul verbande verander is.

> Groot getalle kinders in Suid-Afrika doen jaarliks brandwonde op as gevolg van brande in informele nedersettings en ongelukke in die huis. Die Afdeling Fisioterapie het getoon dat 'n stukkie tegnologie van die 21ste eeu, baie doeltreffend ingespan kan word om die folterende pyn, waaraan hierdie kinders tydens hul behandeling blootgestel word, ingrypend te verminder.

In die tweede helfte van die behandeling, is die kinders wat in die eerste helfte slegs pynmedikasie ontvang het, ook aan virtuele realiteit blootgestel – met dieselfde ingrypende uitwerking op pyntellings (78% minder) – in vergelyking met die eerste groep, wat in die tweede deel van die behandeling net pynmedikasie ontvang het en nie weer aan virtuele realiteit blootgestel is nie. Laasgenoemde groep se pyntellings het 'n dramatiese toename van 382% getoon.

Soos ander navorsers, het Parbhoo tot die gevolgtrekking gekom dat virtuele realiteit 'n buitengewone medium is om die aandag van kinders met brandwonde sodanig in beslag te neem dat hulle uiters pynvolle prosedures, soos die versorging van brandwonde, met groter gemak kan hanteer.

Tesame met ander studies wat in hierdie veld gedoen is, is daar sterk aanduidings dat virtuele realiteit tesame met pynmedikasie, gesondheidswerkers kan help om die rehabilitasie van pasiënte met brandwonde minder pynlik te maak en sodoende funksionele uitkomste te verbeter.

Benewens Parbhoo se studie op pediatriese pasiënte, is me Linzette Morris – ook 'n student in Fisioterapie – besig met 'n M-verhandeling oor die effek van virtuele realiteit op volwasse pasiënte wat fisioterapie-behandeling kry as gevolg van brandwonde. Omdat fisioterapie wat vir brandwonde gebruik word, strekbeweging in die geaffekteerde liggaamsdeel vereis, is dit dikwels 'n baie pynlike prosedure.

Louw sê daar moet nou gekyk word of en hoe hierdie tegnologie in Suid-Afrika geïmplementeer kan word. "Ons navorsing is gerig op projekte wat toepaslik en koste-effektief is in die Suid-Afrikaanse konteks. Die virtuele realiteitsapparaat sowel as die drie-dimensionele speletjies wat in die buiteland gebruik word is baie duur en ons moes dit vervang met meer koste-effektiewe apparaat om te verseker dat die prosedure haalbaar is in die Afrika-konteks.

Die gebruik van virtuele realiteitspeletjies in 'n gesondheidskonteks is egter 'n belowende nuwe veld en Louw en haar studente wil verdere navorsing doen om vas te stel hoe dit prakties aangewend kan word. Een moontlikheid is om dit te gebruik om pasiënte te laat ontspan en die aandag van metodiese pyn af te lei tydens fisioterapie en bewegingsrehabilitasie. T

New choices in breast cancer - surgery and reconstruction

The reconstruction of a breast that was removed due to cancer is one of the most rewarding surgical procedures available today. A team of specialists at Stellenbosch University have refined breast conservation and reconstruction to state-of-the-art procedures.

Not too many decades ago, breast cancer treatment was a dramatically different procedure than it is today.

Until the late 1970's, if a woman went into surgery for a breast biopsy and the lump in her breast was found to be malignant, she was likely to wake up and find her breast removed without having had the chance to talk to her doctor or prepare herself for the emotional and physical ordeal that faces cancer patients. Since many women in those days thought of breast cancer as a death sentence, issues such as the cosmetic outcome of breast cancer surgery, were seldom considered in the management of the disease.

However, modern medicine has brought about drastic improvements in breast cancer treatment – mainly as a result of early detection, as well as more, better and less invasive treatment options, including breast conservation surgery. The radical mastectomy, once considered the only operation for breast cancer, no longer has a place in the routine management of patients with breast cancer and instead of one doctor making the final treatment decision, a multidisciplinary team approach regarding the management of the disease is recommended worldwide, says Prof Justus Apffelstaedt, head of the Breast Cancer Clinic at Tygerberg Hospital. "The days of a single practitioner treating a woman with breast cancer are completely over," he says.

Today, survival rates have increased to the extent that the average survival rate for breast cancer is now five years, Apffelstaedt says. Furthermore, about 80 out of a hundred patients with early stage breast cancer are still alive and well after 20 years.

Against this background, quality of life issues have become increasingly important. For many women, one of the most important issues in this regard is the cosmetic outcome of breast cancer treatment and more and more women are considering breast reconstruction after a mastectomy. Thus Tygerberg Hospital has been offering reconstructive surgery to all women who undergo mastectomies for a number of years, says Apffelstaedt. He emphasizes, however, that such a service requires a well-coordinated team approach with oncology surgeons, medical and radiation oncologists and plastic and reconstructive surgeons working together to advise a patient of her choices regarding treatment and the best methods of reconstruction.

The Tygerberg team, which comprises medical specialists of the SU Faculty of Health Sciences, has developed into a formidable unit who has refined breast conservation and reconstruction to a state-of-the-art procedure.

Prof Frank Graewe, head of the Plastic and Reconstructive Surgery division of the FHS, provides the team with wide-ranging expertise regarding the new tools developed by plastic surgeons to reconstruct a breast after cancer surgery.

In an interview with *Tygerland*, Graewe pointed out that the early trials of breast conservation primarily addressed safety issues while cosmetic outcome was only a secondary consideration. Thus, adjuvant radiotherapy treatments – which are required after breast conservation surgery – sometimes led to progressive scarring. "After a few years, the scarring made the cosmetic outcome rather poor."

However, new developments in medicine have improved outcomes quite considerably. This includes progress in radiation planning and new technology to deliver radiation which causes much less scarring than in the past. It also includes a range of new surgical techniques.

In the past, the main aim was to eliminate the cancer. Today it is understood that surgery and radiotherapy must be integrated. The first and most important aim of this integration is to get rid of the tumour and to have the best long term survival and quality of life.

"The next step is to do the least necessary damage to the body and tissue and to get a reconstructed breast that is as close to perfect as possible; a breast that will withstand radiotherapy with little long-term damage."

Striving for the best possible outcome

Both Apffelstaedt and Graewe emphasise that these aims are best achieved by the multidisciplinary team with a specialised interest in breast cancer management, working together to provide breast cancer victims of the best possible outcome. As a result doctors can now offer women an added benefit, namely the removal of the tumor and cosmetically repairing the breast at the same time.

Known as oncoplastic surgery, this procedure represents the latest trend in breast reconstruction surgery for cancer patients.

The Faculty's specialists in breast reconstruction, Professors Frank Graewe (left) and Justus Apffelstaedt are leading specialists their respective fields.

However, Graewe emphasises the best possible treatment of a specific patient is dependent upon a thorough evaluation by the combined team. The patient will be accordingly advised of her choices, including the best method of reconstruction and all the advantages and disadvantages associated with the particular method.

"The team's recommendations will be influenced by the type of excisional surgery; adjuvant or neoadjuvant therapy; risk profile and co-morbidity and the availability of tissue for reconstruction purposes.

"It is important to note that in breast reconstruction, the patient is in the driver's seat and she will make the final decision regarding the road we will take."

Graewe says the role of the reconstructive surgeon is to explain all possible options to the patient; to advise and assist her in making a decision. The surgeon should never influence a patient into a reconstructive option that he/she as the surgeon prefers. The subsequent reconstruction should be performed with the highes care and aim at perfection.

Factors that will play a role in determining the best method of reconstruction will include, amongst others, the woman's age, the kind of treatment she needs to eradicate the cancer and the shape of her body.

Thanks to the wide-ranging expertise of reconstruction specialists like Graewe, women in South Africa today have the choice of an immediate or a delayed reconstruction. They can also choose between a so-called *autologous* reconstruction, which uses the body's own tissue, or an *alloplastic* reconstruction which consists of silicone or saline-filled silicone implants.

Oncoplastic procedures

When cancer is detected at an early stage and a lumpectomy, quadrantectomy or partial mastectomy is performed, the current tendency is to have an immediate reconstruction done during the same operation.

The tumour is removed and the breast is reconstructed immediately with breast reduction techniques, rearrangement of breast tissue internally or flaps from adjacent areas. In most cases the other breast will need a reduction or a breast lift procedure to achieve symmetry and a natural result.

In the majority of cases the affected breast will be irradiated and the patient will receive systemic chemotherapy after the operation," Graewe says.

Other reconstruction procedures

Implants

The most common implant is a saline-filled implant. This comprises a silicone shell filled with salt water (sterile saline). Silicone gel-filled implants are another option for breast reconstruction.

The implant may be done at the same time as the mastectomy, or as a delayed reconstruction if radiation treatment is required. If the skin envelope is insufficient it can be expanded with a balloon-like expander which is put under the skin and chest muscle. Small amounts of saline are injected into the expander over a specific period to stretch the skin. Once the skin is sufficiently stretched, the expander is replaced with a permanent implant.

Flap procedures utilising own tissue

These procedures use tissue from the abdomen, back or buttocks to rebuild the breast with the body's own tissue. The operation leaves scars which will fade over time but will not disappear completely.

According to Graewe, excellent results are achieved with new and better flaps which have been developed over recent years.

Some of the flaps used today include:

⇨ The TRAM (transverse rectus abdominis muscle) flap which uses tissue and muscle from the abdomen. There are two types of TRAM flaps, i.e. the pedicled flap which leaves the flap attached to its original blood supply, and the free flap where the surgeon cuts the flap consisting of skin, fat and muscles free from its original location and attach it to blood vessels in the chest area. The procedure requires microsurgical techniques.

⇨ The *Latissimus dorsi* flap uses muscle and skin from the back. The skin, fat muscle and blood vessels are pulled under the skin through to the chest wall. Often the volume is insufficient and then an implant can be added to increase the volume of the reconstructed breast.

⇨ The DIEP (deep inferior epigastic artery perforator) flap uses fat and skin from the same area as the TRAM flap but does not include any muscle tissue. The tissue is cut completely free from the abdominal area and is then microsurgically attached to the blood vessels in the chest area. The advantage is that the abdominal muscle is left intact.

Reconstructing the nipple

In early stage breast cancer, the cancer surgeon may perform a nipple-sparing mastectomy which leaves the nipple and areola in place. Alternatively, the nipple and areola can be reconstructed, says Graewe. This requires a separate operation and the reconstruction is done with local tissue from the reconstructed breast. Tattooing can be used to match the colour of the areola.

Graewe says the reconstruction of a breast that was removed due to cancer is one of the most rewarding surgical procedures available today, especially since new surgical techniques and devices have now made it possible to create a breast that can come close in form and appearance to a natural breast.

STATE OF THE ART BREAST RECONSTRUCTION

Immediate reconstruction after left skin sparing mastectomy and right nipple sparing mastectomy.

Immediate breast reconstruction after bilateral areola sparing mastectomy for left infiltrating breast cancer in a BRCA1 positive patient.

The results obtained with the new technique, known as DIEP - deep inferior epigastric artery perforator flap.

Pictures courtesy of Prof. Graewe


Prof Justus Apffelstaedt.

The *first prize* in breast conservation

A few years ago, Prof Justus Apffelstaedt, head of the Surgical Oncology Service of the SU Faculty of Health Sciences, made a telling contribution towards breast conservation during cancer therapy when he invented a groundbreaking device that limits the damage and scarring to a patient's breast during radiation therapy.

Known as the MammaSphere, the ball-shaped device is used for intra-operative radiotherapy and provides a once-off treatment, as opposed to the conventional 32 daily treatments of external radiotherapy. Costs are cut roughly in half and trauma to the patient is significantly reduced.

The MammaSphere, which won the social category of the 2005 Grand Prix for Excellence in Innovation and Sustainability, is an emphatic confirmation of necessity as the mother of invention. With the limited resources in South Africa's health sector, Apffelstaedt conceived the idea of the MammaSphere while he was exploring new ways to deliver intraoperative radiotherapy during breast cancer therapy. At the time, oncologists and clinicians in developed countries like Italy converted operating theatres at great expense for this purpose – in one instance, this included a 60cm-thick lead wall at a cost of about $2 million.

"We constructed a sphere made from medical nylon into which we could feed a radioactive seed through a stem," he says.

> In South Africa, breast conserving therapy has been greatly enhanced by intra-operative radiotherapy - thanks to a groundbreaking device, invented by Prof Justus Apffelstaedt.

Once the tumour is removed from a patient's breast, she is immediately wheeled to the radiation bunker, under conscious sedation. The MammaSphere is inserted into the location where the tumour was, and the radioactive seed fed in through a protective tube. The 30-minute treatment provides the same dosage of radiation as an entire course of external radiation. In conventional radiotherapy, the entire breast - an average of 800ml of tissue - is treated. The MammaSphere treats only the 40ml that count – a crucial benefit in breast conservation".

For Apffelstaedt, the MammaSphere represents an important victory in the fight against breast cancer on many levels. In the first place, the hospital's own, unmodified radiation bunker can be used - a room that is often underutilised in the normal course of events. At the same time, it addresses the psychological and physiological aspects of breast conservation. "When you radiate from the outside in, the radiation travels through an awful lot of tissue and does a lot of damage," says Apffelstaedt. "Using this device, you're radiating only one centimetre around the sphere. The result is very little tissue damage, scarring or fibrosis.

"The added advantage is that the surrounding healthy tissue, with its unaffected blood supply, can better support the healing of the small area that has been treated."

As a strong proponent of a holistic and multidisciplinary approach to breast cancer treatment, Apffelstaedt believes in giving patients plenty of options and proper support. He also believes that breast conservation is always the 'first prize', despite the prevailing attitude that 'radical', i.e. a mastectomy, is more likely to get rid of all the cancer than a lumpectomy.

"This is not necessarily the way to go," he says. "In recent years, a strong body of scientific evidence has shown that in cases of early breast cancer in particular, the cancer can be treated with breast conserving surgery such as a lumpectomy, followed by intraoperative radiotherapy."

Navorsers lig die sluier om die genetika van hartsiektes te ontbloot

Met die samewerking van Suid-Afrikaanse families wat geraak word deur genetiese hartsiektes, het navorsers van die Universiteit Stellenbosch pas die gene geïdentifiseer van twee van hierdie siektes – een wat hartritme storings veroorsaak en 'n ander wat aanleiding gee tot hartstilstand en skielike sterftes in jong, en skynbaar gesonde mense.

Prof Andries Brink

Navorsers aan die US Fakulteit Gesondheidswetenskappe het onlangs die vrugte gepluk van jarelange navorsing op die gebied van oorerflike hartsiektes, toe hulle die gene van twee van hierdie siektes geïdentifiseer het.

Die resultate van die navorsing is binne weke na mekaar in vooraanstaande internasionale joernale gepubliseer.

Progressiewe familiële hartblok tipe 1

Die soeke na die genetiese mutasie wat die hartsiekte, progressiewe familiële hartblok tipe 1 in sekere Suid-Afrikaanse families veroorsaak, het oor byna drie dekades gestrek. Die siekte word veroorsaak deur 'n onderbreking van die elektriese impulse wat die hart se kontraksies bepaal en dit word gekenmerk deur 'n stadige hartslag wat 'n pasaangeër vereis.

Dit is vir die eerste keer in 1977 deur die voormalige dekaan van die FGW, prof Andries Brink – destyds 'n hartspesialis aan die Tygerberghospitaal - beskryf nadat hy 'n baba behandel het wat met 'n baie lae hartspoed gebore is. Die kind se toestand was so ernstig dat sy 'n hart pasaangeër moes ontvang. Op daardie stadium, toe pasaangeërs nog in 'n vroeë stadium van ontwikkeling was, was sy die eerste baba in Suid-Afrika om behandeling van hierdie aard te ontvang.

Terwyl Brink snr nog besig was om oor die beste behandeling vir die baba te besin, het hy gehoor van nog 'n baba wat 'n pasaangeër benodig het. Dit het geblyk dat dié kind 'n nabye familielid was van die baba onder sy sorg. Hy het gevolglik besluit om ook die moeder van sy jong pasiënt te ondersoek en bewys gevind van 'n soortgelyke onderliggende siekte – maar net nie so gevorder as dié van die kind nie. Dit het Brink laat vermoed dat hy met 'n familiële probleem te make het en hy het besluit om die hulp van dr Marie Torrington, 'n spesialis op die gebied van genealogiese navorsing, in te roep. Dr Torrington het uiteindelik die siekte nagespoor na ander families – van wie die meeste uit die Oos-Kaap afkomstig was. Sy en Brink snr het gevind dat die draer van die defektiewe geen in 1696 uit Madeira, Portugal na Suid-Afrika geëmigreer het. Hier is hy getroud met 'n vrou van Nederlandse afkoms. Vandag is alle Suid-Afrikaners wat deur progressiewe familiële hartblok geaffekteer word, afstammelinge van hierdie egpaar.

Prof Valerie Corfield

In 1986, begin Brink se seun, prof Paul Brink, in samewerking met prof Valerie Corfield - beide van die Fakulteit Gesondheidswetenskappe - met die wetenskaplike soektog na die genetiese mutasie wat die siekte veroorsaak. Hulle het uiteindelik die mutasie nagespoor tot 'n klein gebied op chromosoom 19 wat ongeveer 80 gene bevat. Onlangs het hul soektog na die geen, waar hierdie mutasie lê, tot 'n einde gekom toe hulle, in samewerking met wetenskaplikes van Hamburg en Münster in Duitsland, die spesifieke oorsaaklike geen in die groep van 80 gene kon identifiseer.

Die studie, wat jarelange navorsing verteenwoordig en dikwels ander navorsingspanne, geneeshere, hartspesialiste en tegnoloë van die Fakulteit Gesondheidswetenskappe betrek het, is in die Septemberuitgawe van die internasionale *Journal of Clinical Investigation* gepubliseer.

Brink sê die ontdekking van die oorsaaklike geen beteken dat families wat deur die siekte geraak word, nou 'n akkurate genetiese diagnose kan ontvang en in 'n vroeë stadium reeds

Prof Paul Brink

weet watter familielede die gevaar loop om die siekte te ontwikkel. Sulke familielede kan dan met gepaste behandeling opgevolg word.

Die ontdekking van die geen help navorsers en klinici ook om ander harttoestande wat verband hou met die hart se elektriese stelsel, beter te verstaan. Dit sluit in nie-genetiese vertraginge in hartspoed wat betreklik algemeen is onder ouers mense.

Oorerflike Lang QT-sindroom

Prof Paul Brink was ook deel van 'n span Suid-Afrikaanse en Italiaanse navorsers wat onlangs die eerste wetenskaplike bewyse gepubliseer van die bestaan van sg modifiseeder-gene wat hartaanvalle en skielike hartsterftes veroorsaak.

Terwyl laboratoriums wêreldwyd betrokke was by 'n soektog na die genetiese faktore wat 'n rol speel in skielike hartstilstand, het Brink en prof Peter Schwarz van die Universiteit van Pavia in Italië, die navorsingsoeklig gefokus op 'n unieke groep van 25 Suid-Afrikaanse families wat in 1993 deur Brink en prof Valerie Corfield geïdentifiseer is.

Al hierdie families is afstammelinge van 'n Nederlander en 'n Franse Hugenoot. Van die 500 mense wat opgespoor is, was 205 mense draers van Lang QT-sindroom – 'n toestand wat die skielike dood en/of vreemde floutes van veral kinders en jong mense veroorsaak. Die skielike en onverwagte sterftes word veroorsaak deur hartstilstand wat dikwels volg op emosionele stres as 'n kind bv groot skrik of aan ondervraging op skool onderwerp word, of dit kan veroorsaak word deur fisieke inspanning soos strawwe oefening of sport, of selfs die skielike gelui van 'n telefoon of alarm.

Wêreldwyd is die siekte egter nie uniek nie; een uit elke 2 000 mense ly daaraan. Draers van siekte toon ook nie almal dieselfde simptome nie.

In Oktober vanjaar het Brink, Swartz en prof Alfred George van die Vanderbilt-universiteit 'n artikel in die vooraanstaanste hartjoernaal, Circulation, gepubliseer wat toon dat twee genetiese faktore konvergeer om die risiko vir skielike hartstilstand te verhoog.

Long QT-sindroom is 'n oorgeërfde fout in die elektriese verslapping van die hart. Dit beteken die hart verslap te lank – wat dit sensitief maak vir die effek van adrenalien, sê Brink. QT verwys na die tydsinterval op 'n elektro-kardiogram. In mense met die siekte is dié interval aansienlik langer as by nie-lyers.

Die sindroom veroorsaak dat die hart so vinnig, of stadig en deurmekaar, klop dat dit ondoeltreffend begin werk. Uiteindelik lei dit tot 'n floute en/of die dood weens die ritmestoornis.

Behandeling met beta-blokkers het die sterfgevalle onder lyers van Lang QT-sindroom tussen 50% en 60% tot 1% verminder. Daarom moet 'n EKG altyd gedoen word indien 'n kind of tiener net skielik flou word.

Die span se navorsing het getoon dat algemene genetiese variante teenwoordig is in 20% tot 30% van die geen NOS1AP van gesonde mense. Die variante word geassosieer met 'n effense verhoging van die QT-interval in gesonde mense. Mense met Lang QT-sindroom wat ook die algemene NOS1AP-variante het, se risiko om skielik te sterf, is twee keer so groot.

"Dit is die eerste keer dat modifiseerder-gene vir 'n skielike hartstilstand gevind is," sê hy.

Die projek is deur die *National Institutes of Health* in die VSA met $7 miljoen (sowat R52 miljoen) befonds.

Die SA Mediese Navorsingsraad het ook tot die befondsing bygedra en Telethon in Italië het 'n bydrae van R10 miljoen gelewer.

Mnr Elio Menzione, Italië se ambassadeur in Suid-Afrika, was ook nou betrokke by die projek.

Nuwe ontdekkings span die kroon oor jare se navorsing

Prof Paul Brink is 'n klinikus en prof Valerie Corfield 'n genetiese navorser. Hul samewerking oor baie jare het onlangs aanleiding gegee tot nuwe ontdekkings op die gebied van genetiese hartsiektes.

Die navorsing wat proff Paul Brink en Valerie Corfield oor baie jare reeds doen op die gebied van oorerflike hartsiektes het gehelp om genetika as een van die vlagskipprojekte van die US FGW te vestig.

Hulle bydraes tot die ontdekking van die gene vir progressiewe familiële hartblok en Lang QT-sindroom het vir die twee navorsers die kroon gespan oor navorsing wat oor drie dekades strek.

Beide Brink en Corfield glo ontdekkings van hierdie aard kan bydra tot beter begrip en insig van ander harttoestande wat verband hou met die hart se elektriese stelsel - onder meer nie-genetiese vertragings in hartspoed wat betreklik algemeen is onder ouer mense.

Brink en Corfield is ook betrokke by 'n wye reeks studies van ander genetiese harttoestande wat ook families van Afrikanerherkoms affekteer - en hul toegang tot die families van oorsprong speel 'n belangrike rol in die sukses van hulle werk op hierdie gebied. Familielede wat draers is van genetiese mutasies, wat verband hou met oorerflike hartsiektes, word klinies opgevolg by 'n kliniek wat Brink in die Fakulteit bedryf, en ontvang gepaste, voorkomende behandeling.

Een van die oorerflike siektes wat hulle steeds bestudeer is 'n hartspiersiekte, bekend as hipertrofiese kardiomiopatie, wat skielike en onverwagte sterftes veroorsaak - dikwels in jong en skynbaar gesonde manlike en vroulike atlete en ander sportmense. Hulle werk ook steeds op die genetika van progressiewe familiële hartblok tipe II, 'n ander elektriese geleidingsiekte van die hart.

Vennote in Verloskunde

Daar is min universiteite wat soveel spesialiste oplei in die super-gespesialiseerde areas van Verloskunde en Ginekologie soos die Universiteit Stellenbosch.

Hierdie vermoë van die Universiteit se Departement Verloskunde en Ginekologie kan direk toegeskryf word aan 'n unieke vennootskapsprogram wat reeds in 2003 in die Departement gevestig is.

Die program behels noue samewerking met die private gesondheidsektor wat vennootskappe in spesifieke superspesialisgebiede befonds.

Daar is tans genootskappe in Reproduktiewe Medisyne, Onkologie en Uroginekologie. Sedert die program geloods is, is daar reeds twee spesialiste in uroginekologie opgelei – dr Etienne Henn wat tans in Bloemfontein werk, en dr Leonard Juul wat in die departement werksaam is.

In Reproduktiewe Medisyne is dr Johannes van Waart (2004) van Stellenbosch, dr Igno Siebert (2004), 'n konsultant in die departement, dr Saleema Nosarka (2006) van Pinelands, dr Dawie Slabbert (2007) van Panorama en dr Danie Botha (2008) van Port Elizabeth opgelei. Hierdie spesifieke genootskap bestaan uit 'n 4-jaar en 'n 2-jaar program.

Dr Kobus Coetsee is tans besig met die 4-jaar program en Dr Thabo Matsaseng met die 2-jaar program.

Die Genootskap in Onkologie het twee genote gelewer - dr Heloïse le Riche en dr Liz Hugo van Stellenbosch.

Dr Thabo Matsaseng.

Daar is ook 'n genootskap geregistreer in fetale moederlike gesondheid (*fetal maternal medicine*).

Opleiding vir navorsers

MET DIE OOG OP DIE TOEKOMS

Die bou van navorsingskapasiteit en 'n toename in die aantal navorsers van wêreldformaat in Suid-Afrika is een van die groot uitdagings wat die land in die gesig staar. Prof Wolfgang Preiser, hoof van die Afdeling Virologie in die US Fakulteit Gesondheidswetenskappe, het in die afgelope jaar 'n aktiewe bydrae gemaak om hierdie uitdaging aan te spreek toe hy, in samewerking met die Universiteit Würzburg in Duitsland en die Universiteit van Kaapstad, die eerste internasionale navorsingsopleidingsgroep in Afrika tot stand gebring het.

Navorsingsopleidingsgroepe bestaan uit opleidingsprogramme wat vir 'n spesifieke periode by universiteite gevestig word om jong navorsers te help om 'n doktorale graad te behaal. Die konsep is in Duitsland ontwikkel waar sg *Graduiertenkollegs* deur die Duitse Navorsingstigting befonds word. So 'n groep betrek doktorale kandidate by 'n gekoördineerde navorsingsprogram wat aangebied word deur lektore van die betrokke universiteite. Die navorsing- en studieprogramme is interdissiplinêr van aard.

Preiser en sy Duitse eweknie, Prof Axel Rethwilm van die Julius-Maximilians Universität, Würzburg, het 'n sleutelrol gespeel in die vestiging van die eerste SA Navorsingsopleidingsgroep wat bestaan uit 12 navorsingsgroepe – sewe van die US en vyf van die UK. Beurse vir die 12 Suid-Afrikaanse PhD-kandidate word deur Nasionale Navorsingstigting (NNS) befonds. Die Stigting help ook met die befondsing van internasionale uitruilaktiwiteite, werkswinkels en simposiums wat deel is van die program. Die betrokke studente sal dmv die Opleidingsgroep, blootgestel word aan ongeëwenaarde opleidingsgeleenthede saam met 'n eweknie-groep van die Universiteit Würzburg. Die navorsing- en studieprogramme is gesamentlik deur die drie vennootskapsinrigtings ontwikkel en dit word ook gesamentlik gemonitor. Studente in die programme sal ses maande per jaar by die universiteite van die verskillende vennnote deurbring om navorsing te doen en geleenthede soos somerskole by te woon.

Die tema van die nuwe Opleidingsgroep is MIV/Vigs en verwante infeksiesiektes in Suidelike Afrika.

Die foto bo is geneem tydens die bekendstelling van die eerste Internasionale Navorsingsopleidingsgroep in Afrika is dmv 'n vennootskap tussen die universiteite van Stellenbosch, Kaapstad en Würzburg, Duitsland. Die projek is tydens 'n simposium op Stellenbosch bekend gestel, met Suid-Afrikaanse en Duitse navorsers as sprekers. Onder die gaste by die geleentheid was, vlnr. Prof Arnold van Zyl (US), dr Jürgen Breitkopf (Würzburg), prof Wolfgang Preiser (US), mnr Christof Mühlberg (Duitsland), mnr Robert Kriger (NNS), Prof Axel Rethwilm (Würzburg) en prof Heidrun Moll van Duitsland (voor).

Nuwe kursus

Integrerende Geneeskunde

Integrerende Geneeskunde is 'n nuwe sertifikaatprogram wat vanaf 2010 deur die US se Afdeling Huisartskunde en Primêre Sorg aangebied word. Die doel van die kursus is om dokters van addisionele gereedskap, vaardighede en behandelings te voorsien, sê dr Maria Christodoulou, wat die een-jaar afstands- en Webgebaseerde kursus saamgestel het.

Die kursus word op nagraadse vlak aangebied vir dokters in Suid-Afrika en Afrika, sê Christodoulou, 'n oud-MBChB-student van die FGW en 'n bekende gesondheidsgids met wye ervaring op die gebied van geïntegreerde gesondheidsorg.

Sy beskryf Integrerende Geneeskunde as 'n gesonheidsorg dissipline wat op holistiese wyse die bio-psigo-sosiale en geestelike welsyn van die mens nastreef. Dit beklemtoon die deurslaggewende belang van die geneesheer-pasiënt-interaksie en benut toepaslike, konvensionele en alternatiewe terapeutiese behandelingsmetodes, wat op bewysgebaseerde basis berus."

Die kursus is binne die Suid-Afrikaanse konteks ontwerp, met inagneming van die uitdagings wat aan 'n gesondheidstelsel gestel word in 'n diverse gemeenskap, sê sy.

Dr Maria Christodoulou

Vir verdere inligting, raadpleeg asb die webwerf: www.sun.ac.za/integrativemedicine. T

'n Medalje vir dr AD Keet

Piloriese sfinkter 'n wenner op die Internet

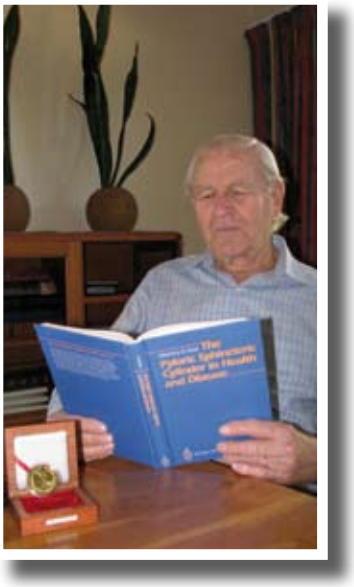
Dr AD Keet, wat vanaf 1956 tot 1986 onderonderbroke en vir 'n rekordtyd van 30 jaar aan die Radiodiagnose afdeling van die FGW betrokke was, is onlangs met 'n medalje van die SA Akademie vir Wetenskap en Kuns vereeer.

Keet is tot op hede die enigste persoon in Suid-Afrika om 'n PhD-graad op die gebied van radiodiagnose te verwerf. Hierdie graad is in 1974 aan hom toegeken vir sy verhandeling, *An anitomico-physiological principal governing the direction of the gastro-intestinal mucosal folds during life*.

Hy is in 1921 gebore as die seun van die digter A.D. Keet en het aan die Universiteite van Stellenbosch, Kaapstad en die Gemeentelijke Universiteit van Amsterdam gestudeer. Hy het 'n mediese doktorsgraad in Amsterdam verwerf en dit in 1974 opgevolg met 'n Ph.D (Med.) aan die Universiteit van Stellenbosch.

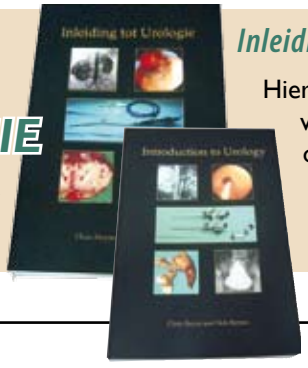
Van al Keet se publikasies, wat in Engels en Afrikaans verskyn het, het hy die hoogste lof ingeoes vir sy handleiding getitel *The Pyloric Sphincteric Cylinder in Health and Disease* wat in 1993 deur Springer-Verlag van Berlyn in Londen, New York, Boedapest en Tokio gepubliseer is. Sedert die verskyning van die boek word dit beskou as 'n naslaanwerk van internasionale gehalte oor die piloris (d.w.s. die hekwagter tussen die maag en die duodenum). Die boek word steeds beskou as een van die gesaghebbendste bronne oor die onderwerp en Keet ontvang versoeke vir die werk uit alle dele van die wêreld. Sedert die boek in 1998 op die Internet beskikbaar is, is die bron tot Februarie vanjaar 2,242,011 keer geraadpleeg, terwyl 1,162,225 versoeke om bladsye uit die publikasie ontvang is. Die aantal elektroniese besoeke aan die tuisblad gaan nog steeds voort teen 'n tempo van etlike honderde per week.

In 1993 het Keet die Maurice Weinbren-toekenning ontvang vir die beste radiologiese publikasie vir die jaar. *The Pyloric Sphincteric Cylinder in Health and Disease is* elektronies beskikbaar by http://med.plig.org/ T



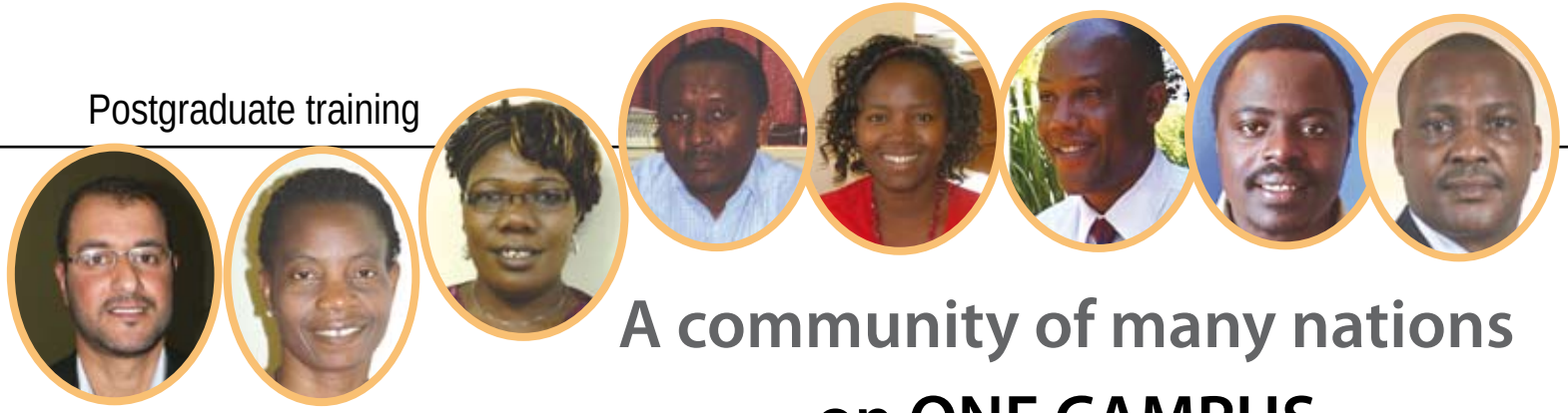
Bo: Dr AD Keet, wat meer as 30 jaar lank aan die Afdeling Radiodiagnose verbonde was, is onlangs deur die SA Akademie vir Wetenskap en Kuns vereer vir sy bydraes op die gebied van geneeskunde.

Nuwe UROLOGIE handboek



Inleiding tot Urologie / Introduction to Urology deur Chris Heyns en Dick Barnes

Hierdie boek behoort waardevol te wees vir mediese studente wat hulself voorberei vir eksamens, en ook vir huisartse en spesialiste wat vinnig op hoogte wil kom oor die hedendaagse hantering van Urologiese siektes. Die boek is verkrygbaar by die Departement Urologie se sekretaresse, me Netha Smuts, Kamer 4079, 4de Verdieping, Kliniese Gebou. Posadres: Posbus 19063, Tygerberg 7505. Tel: 021 938 9282, Faks: 021 933 8010. T



A community of many nations on ONE CAMPUS

As an inevitable part of the global village, the Tygerberg Campus of the SU Faculty of Health Sciences accommodates almost as many nationalities today as those represented by the flags flying in front of the United Nations building in New York.

At present, 657 foreign students are registered at the Faculty – 156 of them from African countries that stretch from neighbouring Southern Africa to as far afield as Egypt, Ethiopia, Mali, Rwanda, Cameroon and the Sudan.

For students from European countries, a visit to the Faculty is an instructive experience because it brings them into contact with a range of diseases no longer seen in modern-day Europe or the United States. Among them are students from Norway, Sweden, the United States, France, Belgium, the Netherlands, Switzerland, Japan, Australia and New Zealand.

At the same time the Faculty offers visitors from African and Middle-Eastern countries valuable training opportunities that compare well with similar training in Europe or the United States, but at considerably lower cost.

"African medical specialists who wish to make a difference in Africa, should train in Africa", Dr Hassan Lameen told Tygerland on completion of his training in the Radiology division at the end of 2008. At the time, Lameen made history as the first postgraduate from Libya to complete his registrar training at the FHS. Like Lameen, many students from African countries told Tygerland that very little was known about South Africa in their countries of origin and they were surprised to find such a highly advanced country at the southern most tip of the continent.

Supernumerary registrars

Many of our foreign visitors are supernumerary registrars who are currently training in various clinical departments and divisions, often with bursaries or fellowships from their governments or international organizations.

According to Prof Razeen Davids, the Department of Medicine and the Nephrology division in particular, has an excellent reputation regarding the training of physicians and nephrologists – so much so that the International Society of Nephrology is regularly sending doctors from African countries to the Department to train as nephrologists. Over the past two years, this division has trained six African doctors from Ethiopia, Uganda, Nigeria, Kenya and Ghana.

Registrars and specialists who have trained in the Urology division have only the warmest appreciation for the training opportunities they have been given in the division. "I was initially astounded by the sheer scope in Urology and the wide range of equipment in the hospital, to which hitherto I had only limited exposure and no doubt I actually felt inadequate. However I was carefully introduced to Urology practice by the staff whose patience is a virtue worth extolling. I was introduced to a wide range of clinical conditions, excellent diagnostic approaches and decision making in the evaluation and management of patients, based on various levels of evidence," says Dr Anthony Kariuki of Kenya, who came to the division with a scholarship from the Societé Internationale d'Urologie (SIU).

In Obstetrics and Gynaecology, Dr Abdoulaye Diarra of Mali has been one of several registrars from Africa to complete his specialist training in this Department. He says without the support of his Faculty mentors "I would never have qualified as a gynaecologist."

Other departments and divisions who currently accommodate registrars and other fellowship students include Cardiology; the Respiratory Research Unit with a fellow from Zambia; Surgery with supernumerary registrars from Zambia and Nigeria; Pharmacology with a MSc student from Tanzania; Neurosurgery; Dermatology; Internal Medicine, Infectious Diseases; Medical Microbiology; Human Nutrition; Pharmacology, the Centre for Rehabilitation Studies with two DPhil students and the Centre for Health Sciences Education with five MPhil students. T

In the photo's above, *some of the 156 students from African countries who are currently studying at the FHS. From the left: Dr Hassan Lameen, Libya; Dr Margaret Wazakili, Malawi; Dr Tsitsi Chataika; Dr Anthony Liwa, Tanzania; Ms Peninhah Kinya Masibo, a DPhil student from Kenya; Dr Ndosi Aston; Dr Blessing Ngonidzashe Dziwa, Zimbabwe and Dr Anthony Kariuki, Kenya.*
On the left: *Prof Razeen Davids with nephrologists, training in the Department of Medicine.*

Tygerberg Poison Information Centre

providing a unique, countrywide service

For more than 30 years, the Faculty's Poison Information Centre has been dealing with anxious enquiries on a 24-hour basis, every day. These calls come from all parts of South Africa and may relate to accidental or intentional poisonings involving anything from plants and pesticides to drug overdoses, medication errors, household cleaners and snake- and spider bites.

The Tygerberg Poison Information Centre is a unique service, recognized nationally and internationally – by organisations such as the World Health Organisation - as a centre of excellence and a national asset.

The Centre has been in operation since 1977 and provides a nationwide 24-hour, emergency telephone consultation service on the prevention and management of poisoning to both health professionals and the general public. It is situated in the Pharmacology division of the SU Faculty of Health Sciences on the Tygerberg Campus, in close proximity to the Tygerberg Academic Hospital. Presently, the Centre is one of only two in the country that provides a 24-hour consultant- based and laboratory-assisted poison information service. The Centre also provides expert advice on biological toxins such as spider and snake bites, scorpion stings, marine poisons and poisonous plants and mushrooms. Experienced clinical toxicologists deal with the calls.

Callers from all over the country have been making increasing demands of the services of the centre. In 2008, for instance, 5084 consultations were dealt with and 66% of the calls were from health care professionals, i.e. doctors, pharmacists, nurses, veterinarians and others, and the rest were from the general public. During this period, 47% of the calls came from the Western Cape and the remainder from the other provinces with calls from KwaZulu Natal (21.7%), Gauteng (16.8%) and Eastern Cape (5.7%) being the most frequent of these.

In 2008, the patient distribution of poisoning consultations was children (43%), adults (54%), and animals (3%). Of these consultations, 39% involved children under the age of 5 years. Poison exposures included medicines (31%); non-drug chemicals (53%) and environmental poisons such snake, scorpion and spider envenomations (16%). Non-drug chemical exposures included pesticides, household chemicals and cleaning materials, paraffin and other volatile hydrocarbons such as petrol and thinners.

Dr Joy Veale, director of the Poison Information Centre, with a Parabuthus granulatus, *one of the most poisonous scorpions in the Western Cape.*

"These statistics emphasise the need for expert advice on management of intoxications and other forms of poisoning across the country and for various patient groups", says the director of the Centre, Dr Joy Veale.

Staff of the Centre also present community education programmes to promote safety in the home by means of radio talks and magazine articles, especially regarding prevention of childhood poisoning and what to do in the event of an exposure to a poison. The Centre has produced a chart on the management of poisoning to assist the general public in the early and pre-hospital management of poisoning and this chart is available from the Centre's website, www.sun.ac.za/poisoncentre.

Staff also lecture to the general public, health professionals and clubs and organisations on toxicology-related issues. At the same time, they are involved in education and training through lectures to undergraduate MBChB students and to BSc Hons students in Pharmacology, as well as the supervision of postgraduate student research projects. They furthermore provide Poison Information Centre Training programmes for Pharmacist interns and Emergency Medicine and Toxicology registrars. The research activities of the Centre are diverse and the staff of the Centre regularly attend and participate in both national and international congresses to showcase their research results.

www.sun.ac.za/poisoncentre

A prize-winning meeting of *two worlds*

Dr Lee Wallis in the vineyards.

When a British veteran of the Iraq war relocates to the Cape to pioneer a new medical speciality and simultaneously tries his hand at winemaking, surprising things can happen.

Emergency Medicine attracts people with no attention span, who like adrenaline and rushing around. "Winemaking, on the other hand, requires lots of time, patience and observation.

So says Dr Lee Wallis, an Emergency Medicine specialist who has surprisingly managed to combine these two worlds to establish a winery that wins one award after the other and accumulates more stars than the top pupil in the local primary school!

As head of Emergency Medicine – not only at Stellenbosch University, but also at UCT and the Provincial Government of the Western Cape – Wallis describes his farming and winemaking activities as "a bit of a challenge' – and considerably more so in the harvest season when his days are spent in the academe and his nights and weekends in the vineyards and cellars on his farm. Over February and March, in particular, things can get a bit rough when "we have to do something to the wine every four hours!"

Wallis – a former medical officer with the Royal Marines in the Iraq war - came to the Western Cape from Britain eight years ago to do research for the completion of a MD thesis at the Red Cross Children's Hospital. Instead of returning to the UK, he and his wife, Abbi, decided to relocate to South Africa and bought a small, 9Ha farm in Wellington where Mrs Wallis established a guest house. In the meantime, SU and UCT joined forces to present the first degree in Emergency Medicine and Wallis was appointed by the two institutions to help build the foundations for this medical speciality in South Africa.

Soon after they bought their farm in Wellington, Wallis decided to take out some of the guava trees that grew on the farm and plant some vines, "just for fun," he says. "Then I thought we may as well build a winery. And then I thought to have a go at making the wine."

As one thing led to another, the 'Wallis-made' wines started to attract the attention of the Cape's wine connoisseurs, and with the attention came formal recognition for one wine after the other. The most recent was his Dunstone Shiraz 2008 which achieved a five star rating in the prestigious John Platter wine guide.

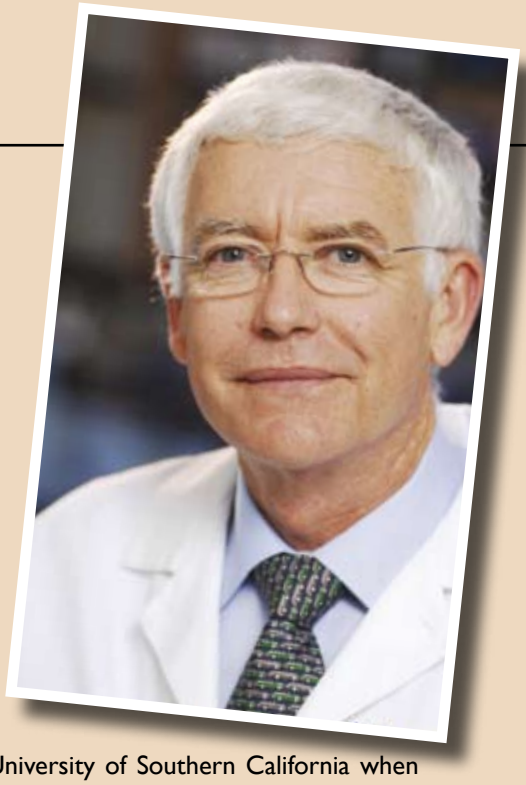
At present, the small farm specialises in Shiraz, Merlot and Shiraz Rose and all the grapes for the wines are grown on the farm. "We only produce what we grow ourselves," Wallis says.

He ascribes the success of this winemaking ventures to the excellent quality of grapes that grow on the farm. "Nature does the work and we simply let the barrels and the wine interact. I don't interfere once we are out of the tanks and into the barrels. For fermentation, we follow a standard but old way of doing it – namely punching through the cap of grape skins every four hours for about two weeks. This is very hard work to do by hand but the results are great. We keep machines out of the process as much as we can – including in the vineyard."

Wallis and his wife have a 10-month old son, two dogs called Merlot and Shiraz and apart from grapes, they also grow lavender and guavas on their farm. T

Waking up *sleeping genes*

Research that revolutionized our conception of the nature and cure of cancer originated in the SU Department of Medical Biochemistry more than 30 years ago when Prof Peter Jones (right) discovered that 'sleeping genes' could be re-awakened.



More than 30 years ago, a young scientist, working in the Department of Medical Biochemistry in the Fisan Building on the Tygerberg Campus, made a chance discovery in his laboratory that took cancer research to a whole new field, known as cancer epigenetics, and paved the way for the development of a whole new class of drugs that could convert certain cancer cells back into normal cells.

That young scientist was Prof Peter Jones who emigrated to the United States in the 1980's and is now the director of the Norris Comprehensive Cancer Centre at the University of Southern California.

Earlier this year, the Cape Town-born professor received the highest cancer research award in the United States for pioneering not only epigenetic cancer therapy, 'but an entirely new field of science'. Jones and his research partner, Prof Stephen Baylin of the Johns Hopkins University, were also appointed joint leaders of a US 'cancer dream team' and awarded a grant of R72 million.

During a visit to South Africa in August last year, Jones was awarded the Cancer Association of South Africa's AG Oettle memorial award to acknowledge his valuable contributions in the fight against cancer by discovering the epigenetic role of DNA methylation of genes.

"My frustration during my visit last year was that I felt that people didn't realise that funding from the Cancer Association – which could only invest peanuts for research – actually led to a whole new field of science in the world."

Scientists have known for years that genetic changes contribute to the growth and spread of cancer. Genes can either be turned on or off inappropriately, leading to abnormal cell growth. However, Jones and Baylin have discovered that there are additional layers of material outside of the DNA that regulate, or turn genes on and off. These epigenomes, as they are known, have been the focus of their research. They have determined that inappropriate epigenetic activity contributes significantly to cancer causation and growth, and that unlike mutations in the DNA, these changes can be reversed. This has opened the door to research that could potentially regulate this activity or return the affected genes to normal function even after they have become defective.

The discovery that triggered Jones' work in this field, happened entirely by chance while he was working in the SU Department of Medical Biochemistry in 1977. Working with Dr Phillip Constantinides and Prof Wieland Gevers, he made the seminal discovery that an obscure anti-cancer drug, known as 5-aza-c, could induce non-muscle cells to become microscopically visible beating muscle cells in tissue culture.

If it could do that, Jones thought, then surely it could also switch on genes in cancerous cells to turn them back into healthy ones.

"I can still remember being there in the lab at Tygerberg when my grad student ran in and said, 'My God, I just saw these cells twitching.' It was completely accidental," he said in an article in the *Sunday Times* recently.

This early work was published in the prestigious journal, *Nature*, in 1977 and was subsequently continued at the University of Southern California when Jones emigrated to the United States in the 1980's. Today epigenomes are the focus of a rapidly emerging, important new area of cancer research – the clinical relevance of which has been proven when a massive international clinical trial with epigenetic drugs, based on aza-c, showed that the survival rate of some cancer patients was boosted from 26%, using ordinary chemotherapy, to over 50% using the 'epigenetic therapy'. The results of this trial were published in medical journal *Lancet* in March this year.

Instead of killing cancer cells, using chemotherapy or radiotherapy, epigenetic drugs are used to wake up 'sleeping genes' in those cells and instruct them to change back to normal.

Epigentic drugs based on aza-c had been approved in the US and Europe last year, and had since doubled the life expectancy of "tens of thousands" of mostly elderly people with certain blood cancers. *Lancet* reported that 358 patients in 15 countries were involved in the international trial, which found that those receiving aza-c survived an average of 9.4 months longer than those on conventional treatment, "with a two-year survival rate that was nearly doubled".

The drug was approved in South Africa in February. Jones warns, however, that it had so far only proved effective in two diseases in humans, namely a "pre-cancer" called MDS and a kind of leukaemia called AML.

Prof Willie van Niekerk

Oudhoof. Verloskunde en Ginekologie

Prof Willie van Niekerk, 'n politikus uit die vorige politieke bedeling en 'n gesiene akademikus wat 'n leidende rol gespeel het in die US se Fakulteit Gesondheidswetenskappe, is in Julie vanjaar oorlede.

Prof van Niekerk is in 1970 as hoof van die Departement Verloskunde en Ginekologie aangestel nadat die eerste hoof van die departement, prof Jannie de Villiers, as rektor van die US aangestel is.

Hy het in 1959 as geneesheer aan die Universiteit Pretoria gekwalifiseer en vanaf 1960 sy studies in Sitologie in die buiteland voorgesit. Daarna het hy sy nagraadse studies aan die Universiteit van Pretoria voltooi en in 1965 lid geword van die *Royal College of Obstetricians and Gynaecologists*. Hy was ook 'n genoot van die *South African College of Obstetricians and Gynecologists* (CMSA) en van die *International Academy of Cytology*.

Nà sy aanstelling by die US FGW, het Van Niekerk die grondslag gelê vir goeie pasiëntesorg en vir diepgaande navorsing in die departement. "Hy het slegs die hoogste standaarde aanvaar en sy jonger kollegas aangemoedig om hulle kennis en vaardighede by uitstaande buitelandse inrigtings op te skerp. Benewens sy bekwaamhede as klinikus en vaardige chirurg het hy internasionale erkenning geniet vir sy kennis van sitogenetika en ware hermafroditisme," sê die huidige hoof van Verloskunde en Ginekologie, prof Thinus Kruger.

"Hy het die departement met jeugdige entoesiasme uitgebou, mensgenetika uitgebrei en voorsiening gemaak vir die aankoop van toerusting, wat verseker het dat die departement in daardie stadium een van die beste toegeruste departemente in die land was".

Van Niekerk het in 1982 die politiek betree – onder meer as administrateur-generaal van Namibië vòòr onafhanklikheid en as voorsitter van die destydse Presidentsraad. Hy is later aangestel as minister van Gesondheid in die kabinet van oud-president PW Botha en het in hierdie hoedanigheid gedien tot sy uittrede uit die politiek in 1992.

Dr Marie Grobbelaar

Afdeling Radiodiagnose

Dr Marie Grobbelaar was vir net meer as 'n jaar in die Afdeling Radiodiagnose as senior spesialis werksaam toe sy onlangs skielik oorlede is.

Marie haar voorgraadse studies aan die US voltooi en is in 2000 as lektrise by die Anatomie afdeling aangestel. Sy het in Junie 2008 haar M. Med in Radiologie verwerf en is kort daarna aangestel as konsultant in die Afdeling Radiodiagnose. Marie was 'n gewilde dokter, met groot aanhang veral onder die kliniese assistente om sy hulle verstaan en hul belange op die hart gedra het. Sy was 'n steunpilaar en haar heengaan sal verseker 'n groot leemte laat in ons midde wat moeilik gevul kan word. Marie laat haar man, Johan Colyn en twee kinders, Chris (6) en Jenna (3) agter.

Dr Nick van Gysen

Departement Anestesiologie

Dr Nick van Gysen, wat jare lank aan die Departement Anestesiologie en Kritieke Sorg verbonde was, is in Augustus vanjaar nà 'n lang siekbed oorlede.

Nick het sy mediese opleiding aan die Universiteit Kaapstad voltooi en daarna het hy in anestesiologie aan die Universiteit Stellenbosch en Tygerberghospitaal gespesialiseer. Na afloop van sy opleiding is hy as personeellid in Anestesiologie aangestel en was hy vir meer as 20 jaar 'n konsultant in die departement.

Nick was 'n uitstekende klinikus wat sy praktyk voortgesit het uit 'n battery-aangedrewe rolstoel nadat hy veelvuldige sklerose in 'n gevordere stadium ontwikkel het. Hy was 'n bekende figuur in sy ouer en meer onlangse rooi rystoele waarop hy by die gange van die teaterkompleks afgeblits het, en waarvan hy by tye afgeval het as hy te vinnig om die draaie gery het. Sy standaardreaksie tydens sulke ongelukke was om sy hande omhoog te gooi en uit te roep: "for goodness sake"!

Een van Nick se mees innemende kenmerke was sy stoïsynse geaardheid; hy het nooit gekla nie en selde oor sy toestand, of die probleme van sy gestremdheid, gepraat. Ten spyte van 'n daaglikse stryd wat hom dikwels erg uitgeput het, het hy elke oggend teen ligdag by die werk opgedaag sodat hy die swaar verkeer kon vermy. Hy was inderdaad toonbeeld van dapperheid. Hy was ook 'n opregte en sagmoedige met wat geseën was met 'n plesiere kombinasie van insig en humor. As gevolg van hierdie eienskappe was Nick 'n geliefde en gewilde persoon.

Met sy ondersoekende ingesteldheid was hy deurlopend op hoogte van die jongste literatuur in anestesiologie. Sy gunstelingleesstof was die Canadian Journal of Anesthesia wat hy gereeld gelees het tot hy nie meer by die biblioteek kon uitkom nie. Tydens akademiese vergaderings het hy ons gereeld vergas met geldige en interessante kommentaar en vrae.

Nick was 'n opreg-godsdienstige en beleidsvaste mens, met 'n sterk toewyding aan sy pasiënte, sy kollegas en sy gesin. Uit erkenning vir sy stoïsynse teenwoordigheid in die departement, het ons die jongste uitgawe van die departement se voorgraadse anestesiologiehandboek aan hom opgedra.

Dit was juis as gevolg van sy geaardheid en toewyding dat dit vir Nick moeilik was om af te tree. Hy het sy aftreejare in sy rolstoel-vriendelike huis in Noordhoek deurgebring, waar lede van die departement hom gereeld besoek het. Hy het ons gewoonlik met warmte en geesdrif verwelkom en wou alles weet van ons doen en late in die departement en dan sou hy ons met een of ander anekdote vergas.

Nick was deel van ons lewe in die departement en ons sal hom met groot hartseer mis. Hy was 'n inspirasie vir almal wat hom geken het.

Andrew Levin. Departement Anestesiologie.