



Cytopathology
Initiatives from the
tip of **Africa** – the
spirit of **Ubuntu!**

Professor Colleen Wright

Lancet Laboratories, Johannesburg, South Africa

Stellenbosch University, Cape Town, South Africa

University of the Witwatersrand, Johannesburg, South Africa

UBUNTU

An African philosophy of life that has been described as representing humanity and morality, as well as group solidarity, in communities with a scarcity of resources, where this solidarity ensures community survival.





The premise is that a person can only be a person through others.



The spirit of Ubuntu
refers to our
interconnectedness
and the
responsibility to
each other that
flows from our
connection.



Ubuntu diplomacy is even discussed in the context of American foreign policy by US Dept. of State Special Representative for Global Partnerships Elizabeth Bagley in 2009

" this is Ubuntu diplomacy: where all sectors belong as partners, where we all participate as stakeholders, and where we all succeed together, not incrementally but exponentially."

**Master of Sciences
In
Medical Sciences
(CYTOPATHOLOGY)**

MScMedSci(Cytopathology)

By means of Practical Sessions,
DVD and WebCT
Delivery

2007/2008

Modules

Module 1

Screening programmes (20 credits)

Web studies Website / DVD / Video broadcasting
(<http://www.webstudies.sun.ac.za>)

Module 2

Quality Assurance (20 Credits)

Web studies Website / DVD / Video broadcasting
(www.webstudies.sun.ac.za)

Module 3

Ancillary diagnostic and research techniques
(20 credits)

Web studies Website / DVD / Video broadcasting
(www.webstudies.sun.ac.za)

Modules 4 – 6 (Choose one)

Module 4 (20 credits)

Laboratory skills

At Tygerberg campus

Two weeks (by arrangement)

Module 5 (20 credits)

Fine needle aspiration

At Tygerberg campus

Two weeks (by arrangement)

Module 6 (20 credits)

Oral Pathology including Fine needle aspiration

At Tygerberg campus

Two weeks (by arrangement)

Modules 7 – 26

(5 credits each, total 100 credits) WebCT based
These cover all aspects of exfoliative and aspiration
cytology, are accompanied by 3 readers/study
guides and are completed at the students own pace.

Module 27 (60 credits)

Research assignment

The student will submit a protocol with a
nominated supervisor in the first semester for
approval by the ethics committee and programme
committee of the Faculty of Health Sciences. After
approval students will be encouraged to complete
as soon as possible and to submit as an article to a
peer reviewed journal

Assessment

Students will be evaluated by means of an
assignment after each module delivered.
The practical modules will be evaluated
via an assessment of all practical output
The WebCT based modules will be case
based and answers submitted electronically
as each case is completed
The research assignment will be assessed by
two examiners nominated by the programme
coordinator in consultation with the supervisor.
When the assignment has been accepted by a
peer- reviewed journal for publication it will
require only a mark to be assigned by above
examiners.

Course fees

Tuition fees are approx. R24000-00 over 2 years
and this includes the operational costs of the
course material (readers, study guides) and the
courier costs. Costs relating to the submission
of assignments however will be for the account
of the relevant student

Entry requirements

MBChB/BChD with a post graduate
qualification in Anatomical Pathology or Oral
Pathology

or

MBChB/BChD with at least 2 yrs experience in
cytology supervised by a specialist
cytopathologist or histopathologist with
experience in cytopathology

**Registration with the HPCSA. (This is not a
requirement for foreign students)**



STUDENTS

First enrolment 2005

12 students

Graduated to date

16 students

South Africa, Uganda, Zimbabwe, DRC,
Lesotho

14 publications in peer reviewed journals



Module Convener

Dr Pawel Schubert

Divisional Secretary

Ms Elke van
Wyngaardt

Module Secretary

Ms Greta Neethling,
assistance with over
2000 digital images
at outset programme



FACULTY

Prof Johann Schneider
Prof Colleen Wright
Dr Rubina Razack
Dr Pam Michelow
Dr Pawel Schubert
Dr Luvo Fatman
Dr Nicole Morse
Ms Christine van Wyk
Ms Greta Neethling



EXTERNAL MODERATORS

Dr Bryan Knight

Dr David Kaminsky

Prof G Leiman

Dr S Mount

Ms L Shrives

External examiners of Masters dissertations

Prof A Field

Prof D Cameron

Dr M Dubb

Dr T Omar

Prof Peter Wranz

Dr Judy Whittaker

Many other colleagues, many thanks

CURRENT
STUDENTS

South Africa

- 4 students

Malawi

- 1 student

Attrition rate is high (+/-50%)

- Death
- Financial constraints
- New career paths
- Personal reasons
- Time out due to work load

**FNAB TUTORIALS
INITIATED BY PROF
ANDREW FIELD**



UNIVERSITEIT-STELLENBOSCH-UNIVERSITY
jou kennisvenoot • your knowledge partner

FINE NEEDLE ASPIRATION BIOPSY TUTORIAL

03 - 07 May 2010

Under the auspices of

Stellenbosch University, National Health Laboratory Services, South African Society for Clinical Cytology, the Papanicolaou Society and the International Academy of Cytology

Faculty

Associate Professor Andrew Field, St Vincents Hospital, Sydney, Australia

Dr William Geddie, University Health Network, Toronto, Canada

Dr Matthew Zarka, Mayo Clinic, Scottsdale, Arizona, USA

Professor Colleen Wright, Drs Pam Michelow, Mercia Louw, and Pawel Schubert, Stellenbosch University and NHLS Tygerberg Hospital



FINE NEEDLE ASPIRATION AND GYNAECOLOGICAL CYTOLOGY TUTORIAL

11 – 14 January 2014

Under the auspices of
Royal College of Pathologists of Australasia Foundation
Stellenbosch University, National Health Laboratory Services

Faculty

Professor Andrew Field, Notre Dame University, Sydney, Australia
Nick Dudding
Allan Wilson

Professor Colleen Wright, Drs Mercia Louw, and Pawel Schubert, Stellenbosch University and NHLS
Tygerberg Hospital and Port Elizabeth, South Africa, Dr Judy Whittaker

Venue: Faculty of Health Sciences, Stellenbosch University, Tygerberg





FINE NEEDLE ASPIRATION AND GYNAECOLOGICAL CYTOLOGY TUTORIAL

With the support of the

Royal College of Pathologists of Australasia Foundation
Stellenbosch University and the National Health Laboratory
Services

**Thursday to Sunday
7 – 10 January 2016**

Pathologists and technologists welcome

FINE NEEDLE ASPIRATION AND GYNAECOLOGICAL CYTOLOGY TUTORIAL

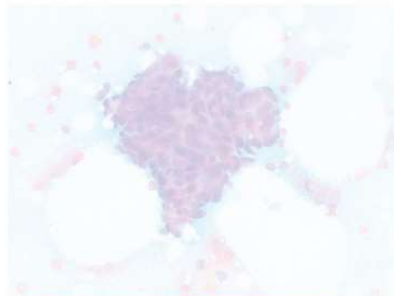
Thursday to Sunday 7 – 10 January 2016
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With the support of the
Royal College of Pathologists of Australasia Foundation
Stellenbosch University and the National Health Laboratory Services

FACULTY

Dr Michael Henry, Mayo Clinic, USA
Associate Professor Andrew Field, Notre Dame University, Sydney, Australia
Dr William Geddie, University Health Network, Toronto, Canada
Dr Matthew Zarka, Mayo Clinic, USA
Professor Colleen Wright, Stellenbosch University/NHLS
Dr Pawel Schubert, Stellenbosch University/NHLS
Dr Komala Pillay, University Cape Town/NHLS
Dr Luvo Fatman, National Health Laboratory Services, South Africa

FINE NEEDLE ASPIRATION, EFFUSION AND GYNAECOLOGICAL CYTOLOGY TUTORIAL



DATE: Thursday 4th - Sunday 7th January 2018

VENUE: University of the Witwatersrand, Education Campus,
York Road Parktown, Johannesburg

CONVENED BY:

The Royal College of Pathologists of Australasia Foundation
The University of the Witwatersrand
Lancet Laboratories
National Health Laboratory Services

SPONSORED BY:

Bidvest Caterers
Lancet Laboratories
Division of Anatomical Pathology Stellenbosch University



The Royal College of Pathologists of Australasia



NATIONAL HEALTH
LABORATORY SERVICES

Bidvest
Caterers



UNIVERSITAT-SELLENBOSCH-UNIVERSITY
Let kennis kom tot 'n kennis by partner



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140 delegates from all over Africa including Nigeria, Ghana, Madagascar, Rwanda and Uganda.

The registration costs were kept to a minimum to enable as many delegates to attend and sponsorship for delegates outside of South Africa was obtained from the Australasian Foundation by Prof Field. The international and local faculty covered their own costs for which the tutorial is extremely indebted.

SCREENING PROGRAMMES



- **World Health Organization**
- **A SEMENOLOGY &**
- **CERVICAL CYTOLOGY**
- **WORKSHOP**

Prof C Wright

University Stellenbosch/NHLS



The background features several sets of curved lines in the corners, some solid and some dashed, creating a modern, abstract design.

Makerere
University
College of Health
Sciences, Uganda

The Bachelors of Science (BSc CYT) program in Cytotechnology was started in 2000 in collaboration with the University of Stellenbosch in research and training where the Division of Anatomical Pathology received the African Collaboration Grant from the US.

This was at the request of Assoc. Prof. Lynnette Tumwine , Chair, Department of Pathology and Dr Dan Wamala

- Provided teaching materials
- Mentorship regarding curriculum
- Provided practical onsite teaching

Makerere University Kampala, Uganda

November 2015





We were fortunate to have access to a multi-head microscope.



Students enjoyed staining and looking at their own buccal smears which we made using these leaves outside the classroom window.



Lectures presented to second and third year cytology students.

2 Week
Practical
Cytology
Course
Included:

Cytopreparatory techniques

Basics principles of cytology
screening

Glass slide workshops

Numerous PowerPoint case
discussions

Presented by 2 cytotechnologists
from Cape Town

- Greta Neethling
- Shawleen Thorpe

Supernumerary
registrars 2002 -
current

Namibia 1

Zambia 1

Malawi 1

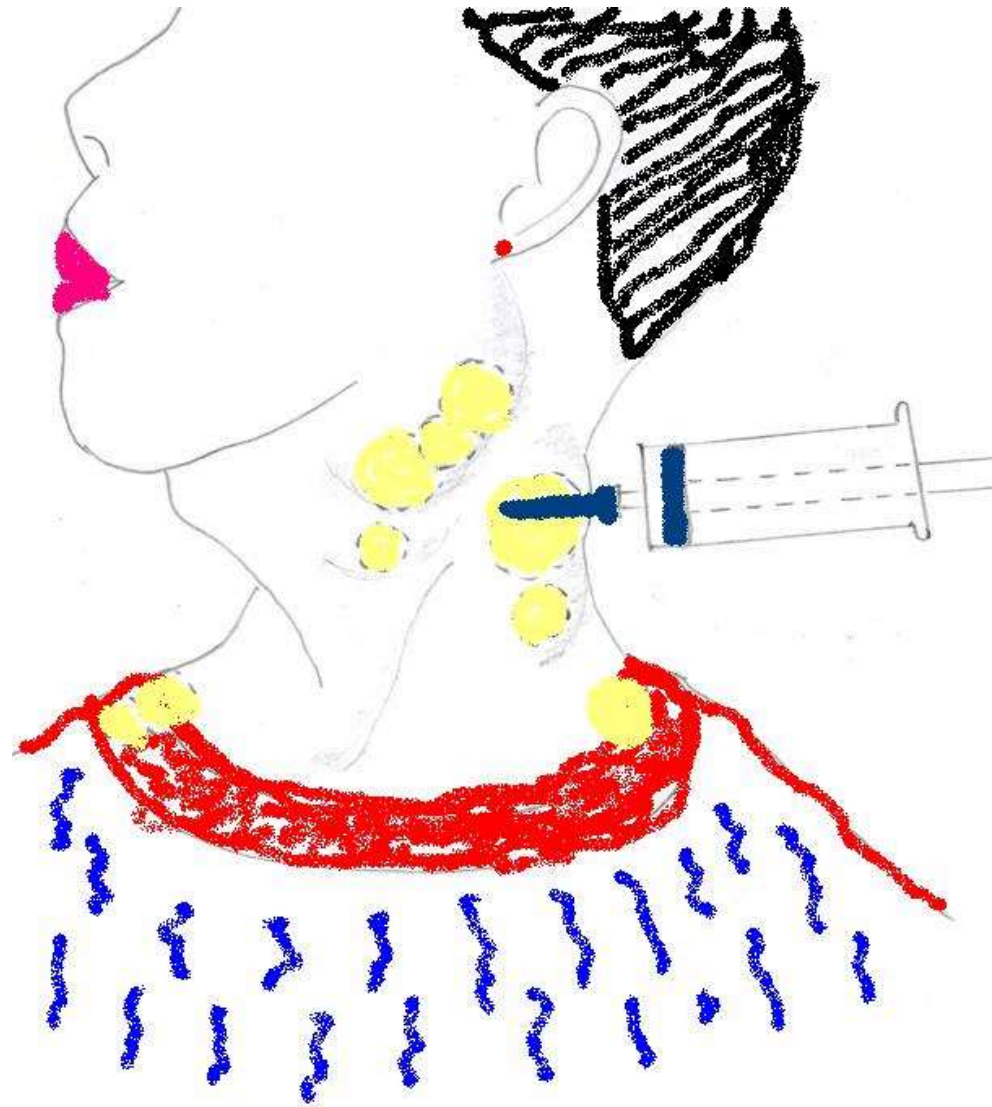
Sudan 1

Ghana 1

Cytotechnologists/Pathologists from
Kenya for 3 month mini sabbaticals

FINE NEEDLE ASPIRATION BIOPSY

*Adapted from
Tuberculosis: A
comprehensive clinical
reference. HS Schaaf, A
Zumla 2009*



Das Diagn Cytopathol 2003

- 1930 first series reported Memorial Hospital NY
- 1960's practiced and published in Scandinavia
- 1980's interest returned in USA and Europe

	High income countries	Low income countries
% countries publishing articles on FNA	52.8%	29.7%
Top topics in publications	Breast pancreatic disease	Small round cell tumours infectious disease

TB LYMPHADENITIS

*Cruz et al Paed Resp Reviews
2007, Rameshkumar. J Assoc
Physicians India 1999,
Marais et al Pediatr Infect
Dis J 2006, Marais et al Int
J Tuberc Lung Dis 2004,
2005*

10-30% children with pulmonary TB have extra thoracic manifestations of disease

In endemic areas, TB lymphadenitis is the commonest of these (up to 50%)

TB lymphadenitis is the most common (22-48%) cause of persistent cervical LAD in endemic areas

Children may contribute up to 40% of the case load in TB endemic areas and if 5 -10% of these have peripheral lymphadenopathy, FNAB may be an invaluable diagnostic aid

*Wright et al
Diagnostic
Cytopathology 2008*

FNAB AND CYTOLOGY

Prospective study Tygerberg hospital,
Jan 03- June 05

Children under 13 years

235 aspirates

35 no mycobacterial culture
submitted

25 of 200 aspirates inadequate (12%)

175 aspirates entered into study

Compared Cytomorphology,
Papanicolaou induced
fluorescence,

ZN staining and Culture



	Cytology	Fluor	ZN	Culture
Sens	78%	67%	62%	75%
Spec	91%	97%	97%	100%
PPV	93%	97%	97%	100%
NPV	73%	66%	63%	72%
EFF	83%	79%	76%	84%

XPRT[®]
MTB/RIF
CHILDREN

Coetzee, L et al PIDJ 2014

Tygerberg hospital, Western Cape and
Dora Nginza hospital, Eastern Cape, South
Africa

September 2011 to December 2012.

Combined reference standard

32 positive on Xpert[®] MTB/RIF
36 positive on cytology
25 Positive on culture for M.
tuberculosis complex.

Xpert[®] MTB/RIF

Sensitivity 80%

Specificity 93.8%

Xpert MTB/RIF for Rapid Diagnosis of TB LAD from FNAB

*Lighthelm et al, JCM
2011.49: 3967–3970*

50 patients in FNAB clinic.

Cytology, TB culture, Xpert MTB/RIF
using TB transport bottle

Sensitivity **96.7%**

Specificity **88.9%**

.Correctly identified 6/6 (100%) of the
cytology smear-negative /culture-positive
cases

1 of 2 (50%) rifampicin-resistant cases.

Paediatric FNA in 290 patients in 3 South African institutions

*R Razack. Et al.
Diagnostic
Cytopathology.
2012. 40: 770-
776*

Sensitivity	96.9%
Specificity	97%
Positive predictive value	99%
Neg predictive value	90.1%
Diagnostic accuracy	
malignancy	96.7%
specific subtype	75.7%

DIAGNOSTIC YIELD OF
FNAB IN HIV-INFECTED
ADULTS WITH SUSPECTED
MYCOBACTERIAL
LYMPHADENITIS

R Razack et al. SAMJ 2014

5 year, retrospective, descriptive ,
laboratory-based study
All patients of ages 14 years and above
Referred to the Tygerberg Hospital
FNAB clinic for aspiration of cervical
lymph nodes for suspected TB LAD
Specimens sent for cytology and
mycobacterial culture
A total of 368 patients
HIV positive - 226 (61.4%)
HIV negative - 25 (6.8%)
HIV unknown - 117 (31.8%)
Mycobacterial lymphadenitis
diagnosed in
293 (79.6%) patients











FINE NEEDLE
ASPIRATION
BIOPSY
BASIC
GUIDELINES

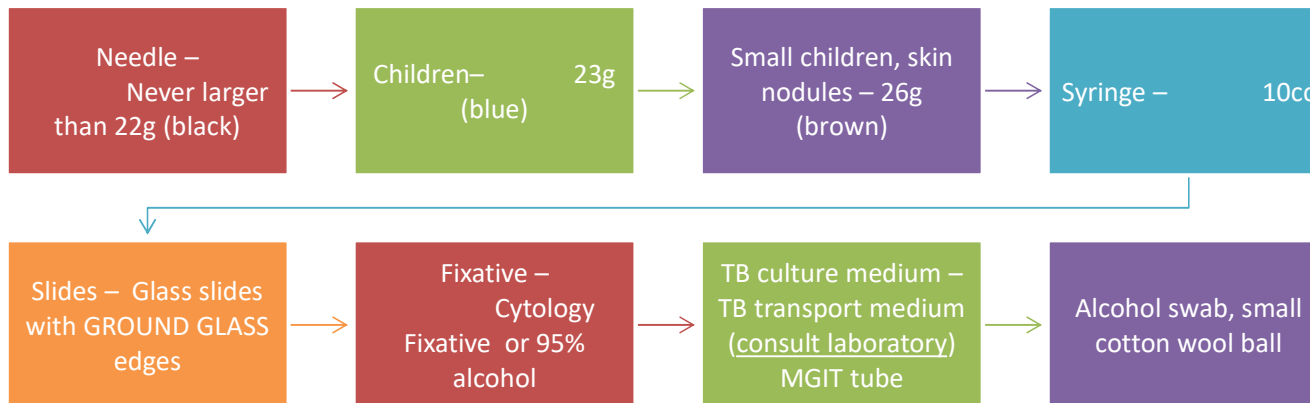
ANAESTHESIA

No local anaesthetic

Sedation in children

Topical anaesthetic (Emla cream)
may be used

EQUIPMENT





PROCEDURE

Always perform a minimum of 2 needle passes

Always use sterile needle and syringe for each pass

Each pass yields 2 slides - 1 air dried for Diff Quik stain (cytoplasmic)

1 spray fixed for Papanicolaou stain (nuclear)

Average aspirate should always yield 4 slides

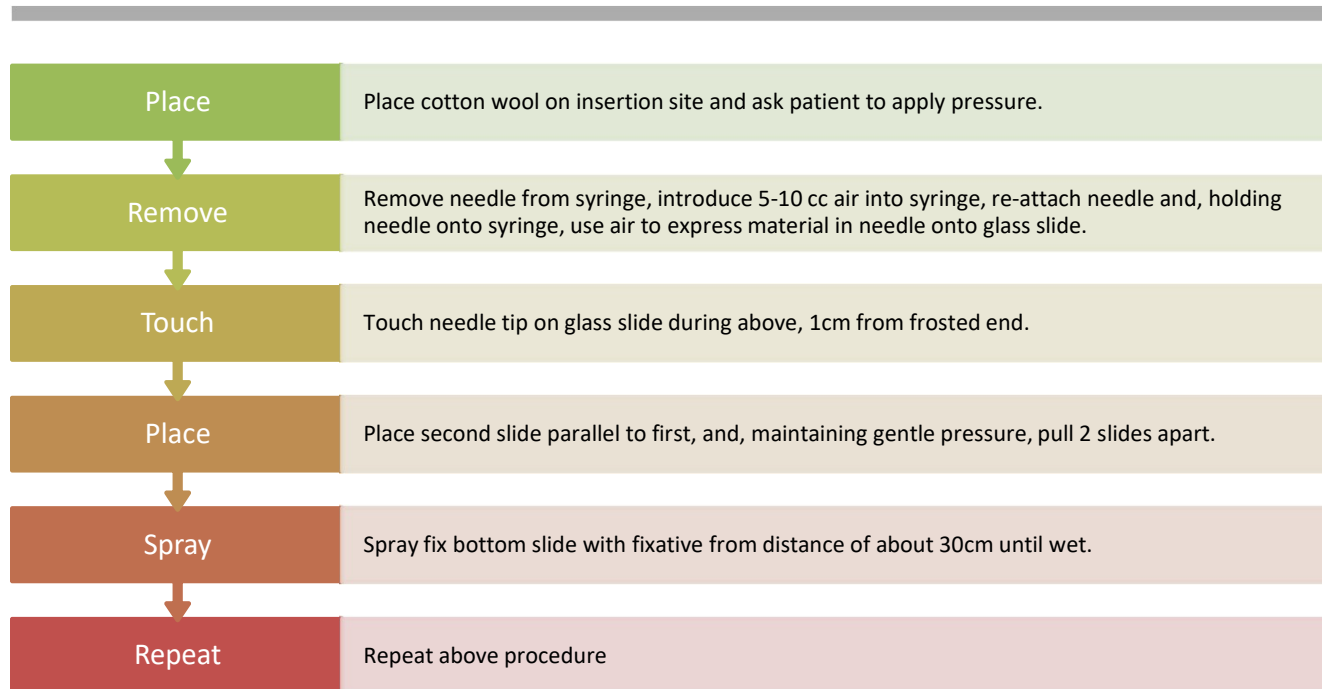
Stabilise mass with 1 hand and introduce needle

Maintain 1-2 cc suction throughout aspirate

Aspirate using cutting motion until material appears in hub of NEEDLE.

Release suction before withdrawing needle

PROCEDURE



HOW TO DO THE
PERFECT FNA
(AND BRING JOY INTO
PATHOLOGISTS LIVES)

**Colleen Wright,
Mercia Louw**



**PAEDIATRIC ONCOLOGY WORKSHOP
16-18 SEPTEMBER 2009
TYGERBERG HOSPITAL/STELLENBOSCH UNIVERSITY**



FNAB PRACTICAL TRAINING

- CDC Kisumu Kenya TB training clinicians and researchers
- Annual international child TB training course hosted by the Department of Paediatrics and child health & the Desmond Tutu TB centre, Stellenbosch University, South Africa in collaboration with the International Union against tuberculosis and lung disease (The Union)
- HIV Clinicians Society and conferences

Confronting the Challenges Relevant to HIV/AIDS Malignancies in Sub- Saharan Africa

July 31, 2015 and August 1, 2015 in Cape
Town, South Africa

To identify and address unanswered
questions related to the biology and
optimal clinical management of HIV/AIDS
malignancies and to support HIV/AIDS
malignancy research in Sub-Saharan
Africa.

**Included plenary talk on FNA as a
Diagnostic Tool in HIV/AIDS Lymphoma**



FNAB BY PROFESSIONAL NURSES

First pioneered in South Africa by Prof Gladwyn Leiman in the early 1990s

FNAB clinics in major hospitals in Johannesburg, Cape Town and Port Elizabeth staffed by professional nurses within the NHLS .

The first registered course providing them with a certificate of competency was established in 2011 at Stellenbosch University, in collaboration with the division of Nursing Science.

The course empowers and enables professional nurses to perform FNAB competently and safely, enabling rapid diagnosis and commencement of therapy particularly in immunocompromised patients with suspected TB LAD

These professional nurses are also trained to assess aspirates for adequacy, and to determine when TB cultures are required or flow cytometry is needed for suspected lymphoma. In addition in cases of suspected breast carcinoma the aspirates are tagged for urgent assessment in the laboratory.

In a study performed by one of the students comparing the performance of one of these professional nurses to aspirates by clinicians as well as pathology registrars, the nurse had the lowest overall unsatisfactory rate (14.32%) compared to clinicians(42%) and registrars (20.1%)

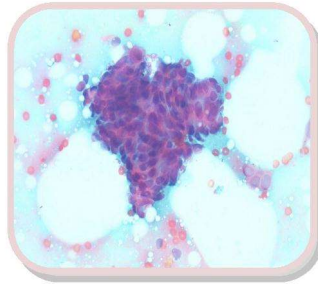
A comparison of specimen adequacy in fine needle aspiration biopsies performed by pathologists , trained nursing staff and clinicians. LM Nteene, CA Wright. 2011. Tropical Doctor. 2011.doi:10.1258/td.2911.110312

CERTIFICATE OF COMPETENCY

FNAB Technique for Professional Nurses



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jou kennisvenoot • your knowledge partner



NATIONAL HEALTH
LABORATORY SERVICE

Overall aim and objectives of the teaching

To teach the correct technique of FNAB to professional nurses, to enable better quality smears to be submitted to laboratories.

To provide professional nurses with an understanding of the process and procedures that lead to a cytology diagnosis, and the impact of poor quality aspirates on the ability of the pathologist to assist in management of patients.

To provide professional nurses with a diagnostic tool in the form of the FNAB that when used optimally, may be of immense value in the triage and expeditious management of patients in a primary health care setting, particularly in the setting of HIV.

Format

Lectures and practical demonstrations followed by one week of supervised application of FNAB technique and assessment of patients in the FNAB clinic per student. Review of aspirates in group microscopy session.

Frequency

The course will be offered on an ongoing basis on demand

Methods and criteria for assessment

All students must have obtained a recent Basic Life Support Certificate prior to completing the course

30 minute written assessment on content of lectures given during the theoretical portion of the course

(1 day). Students must achieve 50% to pass this section (30% of total mark)

Practical assessment of FNAB technique. Students must be able to have retained the technique taught earlier during the day and perform an adequate FNAB (10% of total mark)

Registration Fee

R1500 per delegate

Contact Details

StellMed

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PO Box 19063 • Tygerberg
7505 • South Africa
Tel: +27 21 938 9183 •
Fax: +27 21 933 0382 •
E-mail: stellmed@sun.ac.za

NELSON MANDELA (18 May 2002)



- What counts in life is not the mere fact that we have lived. It is what difference we have made to the lives of others that will determine the significance of the life we lead

Thank you
Dankie
Enkosi

