SATuRN
Manual of Operations

VERSION 1.0

14 OCTOBER 2012

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1. SATuRN Introduction

Mission

This manual serves as an operational guideline for the activities of the Southern African Treatment and Resistance Network (SATuRN) as well as a reference to the organization, functions, operation and other relevant information regarding SATuRN. SATuRN is a consortium of virologists, clinicians, epidemiologists, bioinformaticians, policy makers, public health specialists and social scientists working on HIV treatment and care in southern Africa. At time of writing, SATuRN includes 24 research partners in Southern Africa and has collated over 7,000 HIV-1 Subtype C resistance genotypes from Southern Africa linked to treatment and clinical information. SATuRN curates and maintains two online databases, a standalone database application for patient and treatment information management and drug resistance prediction (SATuRN RegaDB Viral Data Management and Analysis System) and a southern African mirror of the Stanford HIV Drug Resistance Database (HIVDB), that contains published HIV-1 Subtype C resistance genotypes from around the world linked to anonymised patient clinical and laboratory data.

The aim of SATuRN is to develop a multinational public health and virological research collaboration to develop and implement innovative methods of shared HIV genetic sequence and patient treatment data collection, management and analysis. SATuRN also monitors and evaluates treatment outcomes (behavioural, clinical, epidemiologic, virological) in response to antiretroviral treatment (ART) in resource limited public health settings in southern Africa. HIV drug resistance management is a multi-disciplinary field and testing plays an important role in clinical management and research.

SATuRN has developed a tele-consultation approach to treatment failure management in South Africa that also enables the delivery of drug resistance genotyping and clinical management to remote clinics without requiring computer systems or infectious disease specialists on site. Laboratory, specialists, and specialized physicians registered at the Health Professions Council of South Africa (HPCSA) can review de-identified cases, including clinical and resistance data and provide feedback and advice to the clinician managing the patient at the primary clinic. This system assists our understanding of viral population dynamics in remote locations and is also useful for patient management and for the curation and annotation of drug resistance data.

SATuRN currently comprises a number of individual, autonomous, and reputable datasets, derived from clinical and/or laboratory management of HIV-infected patients (please see dataset information). These datasets contribute anonymised clinical and laboratory data (including drug resistance information, treatment regimens, CD4 counts and HIV-1 plasma viral loads) to the SATuRN RegaDB (http://www.bioafrica.net/regadb/) and, once published, to the Stanford HIVDB Southern Africa mirror site (http://www.bioafrica.net/hivdb/). Dataset data is collected on a daily basis and in a uniform and consistent way based on mutual interest in the analysis of drug resistance data from the region and utilizing gold standard bioinformatics resources in the SATuRN consortium.

SATuRN has been working with a network of governments, academics, and laboratories to develop and implement low-cost resistance genotyping in order to increase access to efficient, low cost genotyping and drug resistance testing in Africa. SATuRN's current in-house genotyping system is based on the Sanger ABI sequencing technology. Working in partnership with a key vendor of molecular diagnostic systems, Life Technologies Inc, SATuRN has managed to reduce the cost of the reagents required for genotyping from approximately $250 to less than $50. SATuRN investigators are also working with next generation DNA sequencing techniques to further decrease the cost of resistance genotyping.

2. Scientific Collaboration Management and Governance Structure

2.1 SATuRN Steering Committee (SC)

2.1.1 Principles

The SATuRN Steering Committee plays a critical role in the governance process of the network by providing technical expertise and collaborative leadership to the SATuRN collaboration, in accordance with its core founding principles. The Committee plays a critically important role by actively screening potential solutions, resolving urgent technical issues and promoting active communication among all the datasets. Members of the Steering Committee are elected biannually.

a) All steering committee meetings follow a formal process with advance communication and formal decision-making. Meeting minutes are captured, archived and formally approved at the next meeting.
b) Each dataset is required to declare its interest in order to participate as part of the steering committee.
c) Representatives of individual datasets may veto the use of their data in new projects, even if such projects are approved by the steering committee.
d) Members of the steering committee will meet once per semester (in person and/or by conference call). One steering committee meeting will take place as part of the annual HIV Drug Resistance workshop and another, approximately, 6 months later.
e) The steering committee will review proposals to analyze data in the shared databases of SATuRN dataset data and also provide support for statistical and data analysis.

2.1.2 Composition

Each participating dataset will nominate one member from their respective datasets allowing representation in the SC. This will allow for sufficient representation of all participating datasets. The founding membership of the SC is listed in the Appendix.

The SATuRN SC will elect the Chairperson.

The Steering Committee will at times delegate or transfer some of it powers to the Executive Committee and the nature of this will be formally communicated and approved by SC.

2.1.3 Role of the Steering Committee

The SATuRN Steering Committee will meet once per semester. The meetings may be conducted face-to-face or by teleconference.

The SATuRN SC's role is to evaluate, oversee and monitor the management's succession planning in the various datasets. This involves reviewing, monitoring and where appropriate, approving scientific proposals and analysis plans. The SC is also responsible for the review of proposals for secondary analysis of SATuRN data (e.g. identification of new resistance mutations, molecular epidemiology, testing new resistance algorithms and bioinformatics software applications).

The SATuRN SC defines the management principles of the collaboration. It also monitors the progress of the collaboration and oversees results of the analysis of the combined data and resulting publications.

All processes and decision-making by the SC will be conducted in a democratic/consensual manner. When voting is required for any pending decision, majority vote will determine the course of action. In the event of a draw/tie, the Chairperson will negotiate a consensus.

2.2. SATuRN Executive Committee

2.2.1 Principles

The Executive Committee (EC) has major management oversight and responsibility for developing and implementing SATuRN's research programmes, including protocols, publications and design. In the same way as the SC, all Executive Committee meetings will be formal, professional communication and decision-making will be used, e.g. meeting minutes will be captured, kept and reviewed at the next meeting.

2.1.2 Composition

The Executive Committee is made up of six members selected from the Steering Committee.

The EC consists of the two SATuRN co-directors (Tulio de Oliveira and Chris Seebregts), one statistician, one researcher and two physicians.

Membership – members of the Executive Committee will be selected from the Steering Committee. They will then serve on the Committee for a period of two (2) years with the option of being re-elected.

The SATuRN Executive Committee will meet at least once every two months. The meetings may be conducted by teleconference. Face-to-face meetings should happen at least twice a year.

Role of the SATuRN Executive Committee

The principal role of the EC is to oversee the day-to-day functioning of the different datasets on behalf of the SATuRN SC. The Executive Committee acts as a link between SATuRN's operations and SATuRN's SC. It reviews the scientific proposals and ensures that they are in line with the scientific principles of the network, and also assesses their practicality and feasibility before they are formally submitted to the Steering Committee.

Diagram below of the organizational structure of the SATuRN Steering and Executive Committees.

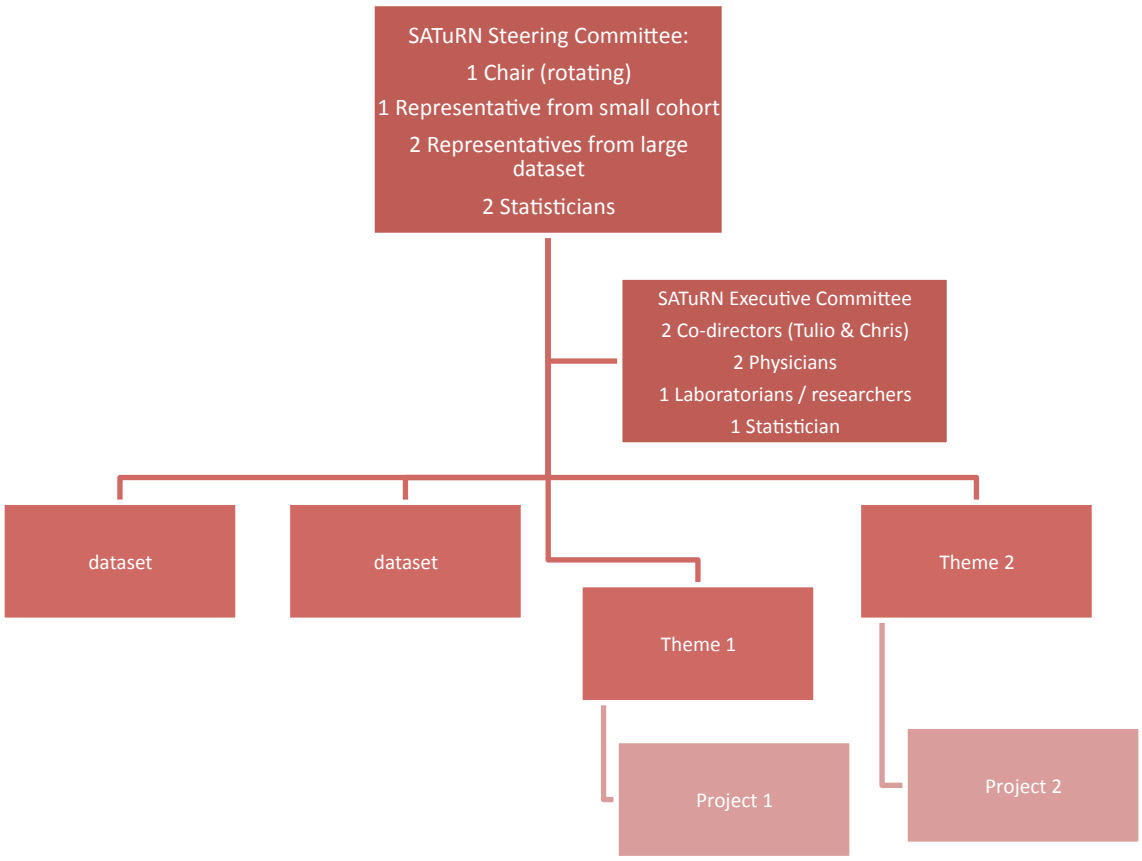


Figure 1. Organizational structure of the SATuRN Steering (SC) & Executive Committees (EC)

As with the SC, all processes and decision-making by the EC will be conducted in a democratic/consensual manner. When voting is required for any pending decision, majority vote will determine the course of action. In the event of a draw/tie, one of the directors will negotiate a consensus. All decisions taken and passed by the EC must be in line with the principles and regulations of the SC.

3. Scientific Proposals

3.1. SATuRN Proposal Process

SATuRN datasets and collaborators can propose and develop scientific projects and analysis that address new scientific hypotheses. Priority will be given to SATuRN datasets, and those planning to use SATuRN datasets will submit their proposals to the SATuRN EC and follow this process:

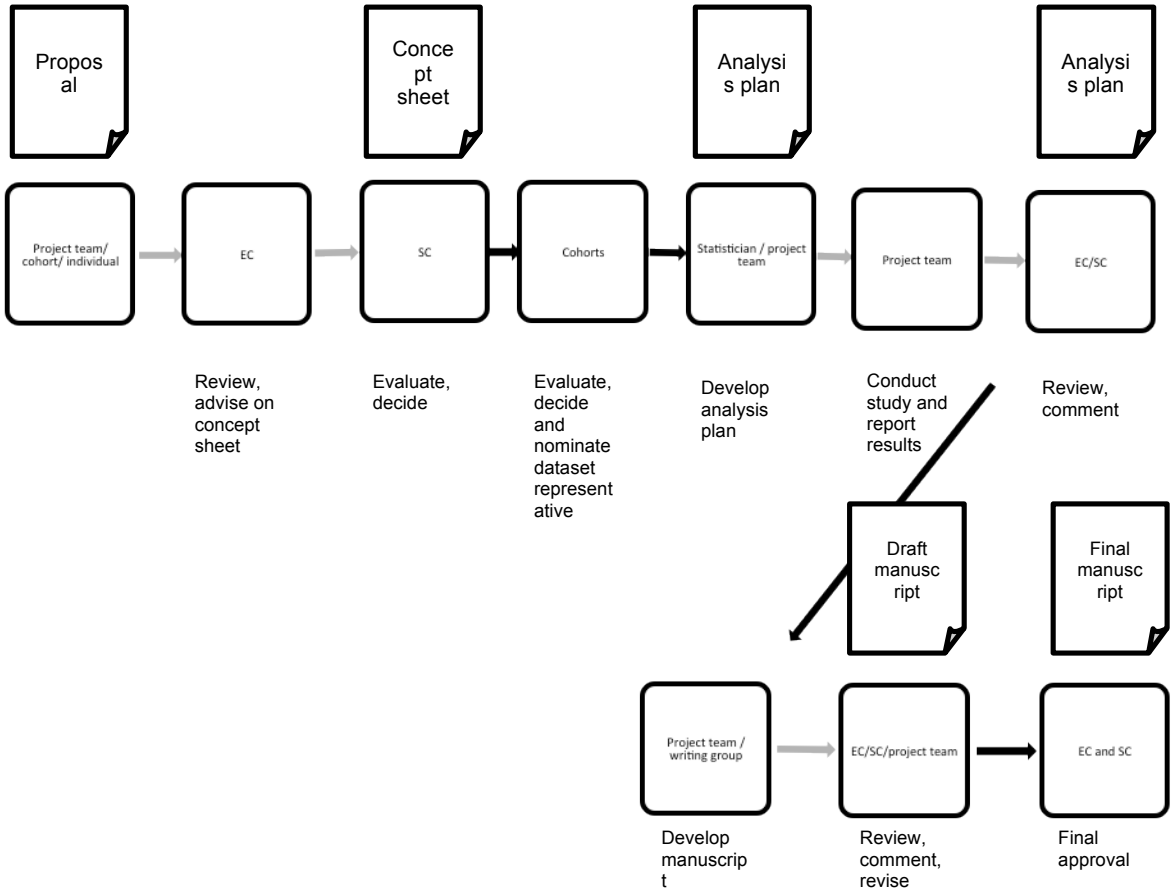


Figure 2: Process for submission and approval of project proposal in SATuRN.

3.2 Procedure for Project Approval and Management

3.2.1 Project Development

For the development of a project in SATuRN, the leader of the project must declare his/her intentions to develop a project and also declare the targeted objectives and milestones. The Project Leader should also provide a time schedule detailing important milestones and timelines, e.g. project initiation, data collection and the production of reports, abstracts and manuscripts. A concept sheet (Appendix 01) is used for the submission procedure and includes the following:

1. Background,
2. Research design,
3. Sample size considerations,
4. Details of the analysis,
5. Membership of the project team.

The EC will review and approve proposals for the development of the projects. The project should be circulated to the SATuRN EC at least 10 working days before its proposed submission to the SC. The document should then be submitted to the SATuRN SC at least 4 weeks before the decision takes place.

Project Team

The project team is responsible for conducting of the research, and for this purpose the team is required to meet and communicate face to face or via teleconference to ensure that analyses are progressing as planned. The project team will also attend SATuRN EC calls before and after the initiation of the project to identify any issues requiring discussion.

SATuRN datasets who are interested in participating in the project will be required to nominate one person who will collaborate with the project/ research team. He/she will become part of the analysis and writing group; he/she may also be responsible for part of the analysis and writing of the paper. The project team will plan the analysis, review results to prepare for abstracts, presentations and the drafting of manuscripts. The project leader will be responsible for the progress of the approved project (the decision lies with SATuRN EC).

Analysing and Writing Group

Making up the writing group will be the dataset's representatives who have contributed the data, as well as members of the project team who have made a significant contribution. The project leader will head the writing group. Before the project is implemented, the SATuRN EC will review the proposal/analysis plan making sure the analysis is in line with SATuRN's objectives.

The writing group will forward reports to the SATuRN EC for the Committee's comments and edits. Thereafter, the writing group will note the changes and comments when/if applicable and return the report to the EC. The EC may also ask help from the SC to review reports.

Once the project is completed, the statistical script and final dataset used to generate the analysis must be forwarded to the SATuRN EC for filing within one month. This information will be used as part of capacity building workshops and sessions. One of the objectives of SATuRN is to capacitate physicians, nurses and researchers in the region on the analysis of data and manuscript submission.

Abstracts based on the objectives of the projects approved by SATuRN EC should be sent to the EC for review and approval one week before deadline for submission.

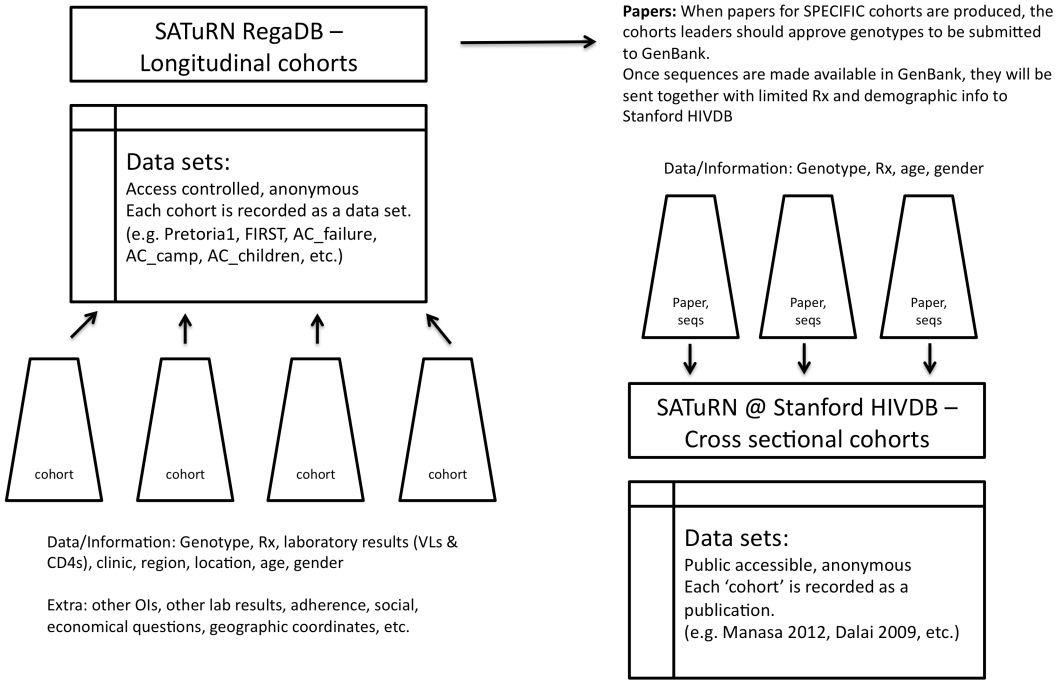
3.3. Data Management and Quality

All participating datasets of SATuRN involved in the clinical and/or laboratory management of HIV infected patients and interested in contributing anonymised clinical and laboratory data (including drug resistance information, CD4 counts and HIV-1 plasma viral loads) deposit the said information in REGADB. SATuRN will coordinate the entry of published anonymised treatment and laboratory data in the SATuRN REGADB.

All submitted unpublished data shall be accessed by the Collaborator/dataset using his/her registered username and password in the SATuRN REGADB. SATuRN shall have access to submitted unpublished data for the process of biocuration only. SATuRN and the Medical Research Council are responsible for the joint website maintenance (http://bioafrica.mrc.ac.za:8080/regadb-ui/RegaDB). The data in the website is frequently curated to ascertain that the data is clean and correct; this process will be coordinated by SATuRN.

The collaborator shall be able to donate unpublished data to SATuRN and provide written consent that the data can be made public. Once data is donated it shall be accessible to all SATuRN members using their registered username and password in the SATuRN REGADB. The database of published data will be linked to the Stanford HIVDB. However, this process will follow the Stanford HIVDB guidelines, and written consent will be requested from corresponding authors of publications before the data is made public.

Figure 3. Flow of data from the cohorts to RegaDB and Stanford HIVDB in SATuRN.



4. Human Participants Protection, Privacy and Confidentiality

SATuRN provides genotyping and collects data to deposit in REGADB. SATuRN operates in the southern African countries, and all eligible patients that meet the criteria can be included in the study regardless of gender, ethnic background, sexual orientation, political opinion and religious or philosophical conviction. SATuRN is good clinical practice (GCP) compliant. This requires all dataset representatives to ensure that their respective datasets conform to the GCP regulations. SATuRN supports the usage of drug resistance test results to inform individual patient care. However, this should be sole responsibility of each dataset group. These include conforming to:

1. Safety Considerations and Ethics Committee Approval
2. Recruitment and Informed Consent
3. Confidentiality
4. Individual clinical management
5. The quality assurance procedures of SATuRN

SATuRN accepts and believes in the protection of its participants.

4.1 Safety Considerations and Ethics Committee Approval

SATuRN would like to ensure its participants are protected from harm at all times during the whole process of the study. Data will only be accepted from datasets with ethics approval to conduct their study. All new projects / study that any SATuRN dataset performs or seeks to initiate, must first get approval from the Local/National Ethical Commission. This means that obtaining informed consent from the participants will be according to the regulations of the Local/National Ethical Commission of all countries participating in the collaboration. Each dataset should send a copy of the approved ethical application to the SATuRN EC.

4.2 Recruitment and Informed Consent

All studies must comply with the National GCP regulations in the country where the dataset is located. This will follow the regulations of Helsinki, in relation to the protection of the individuals with regards to the processing of data and movement of such data. The data is collected according to all existing ethical and safety provisions applicable in the datasets' own country.

4.3 Confidentiality

All information concerning a participant, including information relating to his or her health status and treatment is confidential. SATuRN collaborators/datasets will contribute anonymised treatment and laboratory data to the SATuRN REGADB. SATuRN will ensure that all data stored in the REGA and Stanford data bases is anonymised and no information stored online will be linked to any identifiable individual. All unpublished data shall be accessed by only the datasets' members using their registered username and password. Data in the public domain will contain no information, which could lead to identification of an individual.

4.4 Individual Clinical Management

Studies implemented using the SATuRN drug resistance databases can be used not only to assess the levels and patterns of drug resistance but also to help individual clinical management. SATuRN database allows each group to produce a report using its own letterhead and contact details. The comprehensive format for reporting resistance results with management recommendations by an specialized infectious diseases (I.D.) physician allows primary health care physicians to be able to use results for clinical management with minimal training. The reports allows useful training tool for junior physicians and nurses and to focus attention and improve awareness of these issues within individuals' clinics. However, it is the sole responsibility of each group to identify its I.D. specialized physicians and to conform to the safety and ethics guidelines. Figure 4 shows an example of a resistance report.

Figure 4, next two pages: Resistance report for a patient in the Hlabisa HIV Treatment and Care Programme. The first page 1 of the report provides a table with drug resistance mutation. The second page contains clinical chart and written interpretation of clinical chart and resistance and a specialized infectious diseases (I.D.) physician switch interpretation.

bioafrica.net/saturn/ Genotypic Resistance Interpretation Algorithm

Durban, 23/07/2011

Dear Clinician,

I enclose the report of the genotyping that you requested

Patient ID on the SATuRN Rega database*: RES264 /
**Please notice that no patient personal identification information should be stored in this database, please use an sequential study number as patientID.*

Sample ID / Sample Date: ACRES264 - 15/07/2011
Antiretroviral experience: [D4T, 3TC, EFV]
Subtype: HIV-1 Subtype C

Resistance interpretations: HIVDB 6.0.5

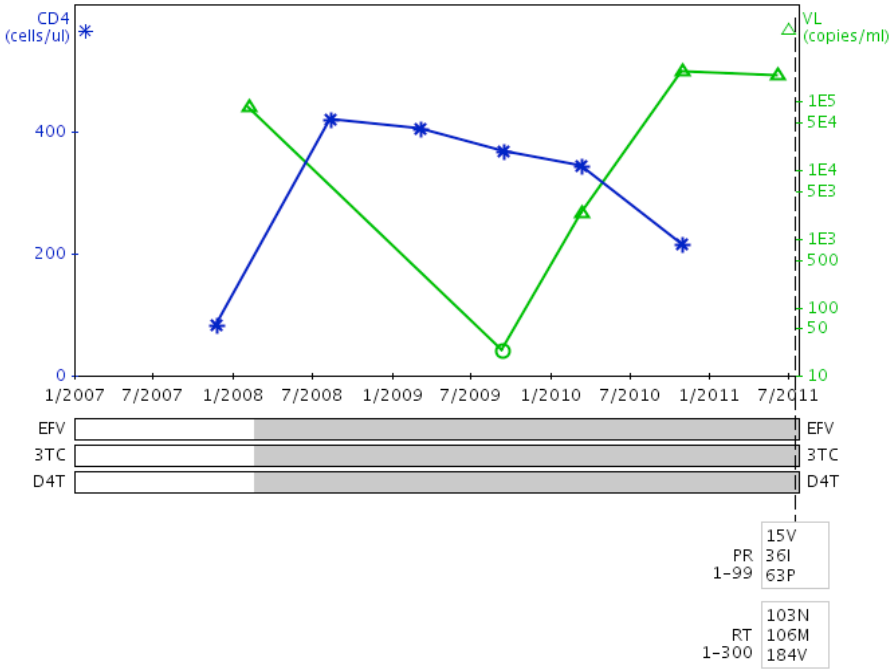
HIVDB 6.0.5

Drug	Mutations	Description	Level	GSS
zidovudine	184V	Susceptible	1	1.0
zalcitabine	N/A	N/A	N/A	N/A
didanosine	184V	Susceptible	1	1.0
lamivudine	184V	High-level resistance	5	0.0
stavudine	184V	Susceptible	1	1.0
abacavir	184V	Potential low-level resistance	2	1.0
emtricitabine	184V	High-level resistance	5	0.0
tenofovir	184V	Susceptible	1	1.0
nevirapine	103N 106M	High-level resistance	5	0.0
delavirdine	103N 106M	High-level resistance	5	0.0
efavirenz	103N 106M	High-level resistance	5	0.0
etravirine	103N 106M	Low-level resistance	3	0.5
saquinavir	N/A	N/A	N/A	N/A
saquinavir/r		Susceptible	1	1.0
indinavir/r		Susceptible	1	1.0
nelfinavir		Susceptible	1	1.0
fosamprenavir/r		Susceptible	1	1.0
lopinavir/r		Susceptible	1	1.0
atazanavir/r		Susceptible	1	1.0
tipranavir/r		Susceptible	1	1.0
darunavir/r		Susceptible	1	1.0

Advice:
- Antiretrovirals for which the virus showed a reduced sensitivity, may still be partially active in a combination therapy. Antiretroviral agents against resistant virus are not recommended but may still exhibit a temporary activity when on HAART (> 3 Antiretrovirals).
- The interpretations of enfuvirtide (Envelope entry inhibitor) and tipranavir/r (boosted PI) are based on limited clinical information. These interpretations should be take with care.

List of all amino acid mutations observed in:
Protease: V3I T12S I15V L19I M36I S37N R41K L63P H69Q L89M I93L
Reverse transcriptase: K20R V35T T39K S48T V60I K102R K103N V106M K173A Q174R D177E I178M V179I M184V T200A Q207E R211K L214F V245Q D250E K275Q R277K E291D V292I I293V E300D

CLINICAL information



Clinical chart and resistance interpretation:
This individual has resistance to two of the three ARVs that she currently on. She has High-level resistance to the NNRTI, EFavirenz (EFV) and the NRTI, Lamivudine (3TC). Her HIV population has the NNRTI mutation K103N and V106M. For resistance to NRTIs there is the 3TC specific mutation M184V. The currently circulating viral population is still susceptible to Tenofovir (TDF).

This patient's viral load has been suppressed in only one occasion in 2009. The patient had a very good immunological response after the initiation of therapy. However this lasted for less than a year only and the CD4 count started on a downward trend. Her last three viral loads done in a space of fifteen months have all been above 2000 RNA copies/ml.

I.D. treatment switch suggestion:
Interpretation of genotype: This patient has not accumulated any TAMs or TDF resistance, despite failing for quite some time.

Adherence: Intensive adherence support is needed and the use of alternative remedies and social deterrents to adherence should be thoroughly explored.

Treatment recommendation: Since the virus is still susceptible to TDF, the patient should do well on a standard second line consisting of TDF, 3TC and LPV/r.

General comments: The renal function should be monitored before initiation and again at three months. If the patient has a high risk if renal disease, pre-existing renal compromise (especially HT and DM patients) or is taking any nephrotoxic drugs such as NSAIDs, ACEI, Streptomycin, monitoring can be done more frequently.

5.4. The quality assurance procedures of SATuRN

In addition, SATuRN will ensure that: a) All data stored and sent online via emails contains no patients names, b) All data is backed up in the event of loss and c) All dataset access is password protected.

6. Publication Rules

Only datasets that contribute data will have a representative in the writing group. The project teams will adhere to the authorship rules agreed by the SATURN SC. These rules conform with the Uniform Requirements for Manuscripts Submitted to Biomedical Journals created by the International Committee of Medical Journal Editors ("Vancouver guidelines"). Exceptions to these can only be allowed upon request and with the approval of the SC.

As part of the project approval process, a draft list and order of authors will be produced. SATuRN believes that discussing and accepting authors' names and the order of the authorship before the start of a project analysis plan is helpful to the overall development of the project. The members of the writing group should discuss change of authorship order internally, during the analysis of the project. A consensus approach to changing authors and the order in the publication needs to be followed and disputes should be referred to the EC.

The names of members of the Steering and Executive Committee as well the datasets' representatives, if different from the authors of the publication, are to be listed in an appendix.

Appendix list:

Appendix 1, Project concept template (3 pages)

Appendix 2, Project reporting template, example (3 pages)

Appendix 3, Publication checklist and acknowledgements (3 pages)

Appendix 4, Members of the steering committee and executive committee (2 pages)

6.3. Appendix 1, Project concept template (3 pages)

Proposal for New Projects

Please complete the following form to allow the Executive and Steering Committees to evaluate your proposal – we encourage you to study the guidance on the SATuRN principles for collaborative projects at page 3 below to increase the acceptability of your proposal.

Proposal title	
Submitted by	
Dataset or group affiliation, if applicable	
Study team & roles:	
Background and scientific hypotheses	

Justification for use of SATuRN RegaDB data	
Objectives	
Deliverables and timelines	
Significance (added value compared to current scientific consensus and ongoing projects in individual datasets and collaborations)	
Possible limitations	

Additional data items (e.g. TB co-infection, adherence questions, HBV co-infection, social worker interview, specialized physician comments, etc.)	
Sample size/power calculations	
References from Background and scientific hypotheses:	

SATuRN principles for collaborative projects

The following principles must be adhered to:

The proposal should not be a threat to the scientific plans of each participating individual dataset. Moreover, it should not compete with the existing collaborations.

The scientific question proposed should therefore carry added value as compared to current scientific plans of datasets and collaborations.

The individual contributing datasets must declare their interest in participating.

Individual datasets may veto the use of their data in any new project.

Please observe that new ideas generated within approved SATuRN projects must be submitted for approval in line with other proposals.

Please send this proposal to: Tulio de Oliveira, co-director SATuRN Executive Committee (tdeoliveira@africacentre.ac.za), and two more other members of the Executive Committee (list to be decided at this meeting).

6.2. Appendix 2, Project reporting template, example (3 pages)

Project title	First-line antiretroviral therapy failure in South Africa and the emergence of thymidine associated mutations			
Date of this report				
Project initiation	M1 – 01/04/2012	Project completion	M12 – 31/03/2013	
Project Lead	Christopher Hoffman	AURUM Institute	choffmann@jhmi.edu	P: +27 11 F: +27 11
Statistician				
Project team	AFRICA CENTRE	Tulio de Oliveira Richard Lessells	tdeoliveira@africacentre.ac.za rlessells@africacentre.ac.za	
	AURUM	Christopher Hoffman Kavi Velen	choffmann@jhmi.edu	
	TDO	Contributing site investigators?		

Summary of the project	Using a large database of resistance sequences with duration of virologic failure we propose to assess the proportion of tested patients with TAMs (0, 1-2, 3, 4) while adjusting for potential confounding co-variates.		
Main goal and expected outcome	1. Describe the proportion of patients with TAMs by duration of failure (divided into discrete time intervals). 2. Develop a predictive model for TAMs, focused on duration of failure, but controlling for potential confounders (including treatment programme, duration on ART, regimen (AZT vs. d4T), HIV RNA, CD4, sex, and age. 3. Develop a predictive model for TAM pathway (1 versus 2) controlling for factors in objective 2.		
Deliverable due by M12	Report on a predictive model for TAM in subtype C in southern Africa		
Work Document due by: annually	Project progress report for annual scientific report		
Date dataset transferred to project team			
Dates of project team meetings			

Project plan and status for abstracts/posters/ papers	
Date of return or destruction of dataset	
Other relevant information	

6.3. Appendix 3, Publication checklist and acknowledgements (2 pages)

	YES	NO	NA
Project analysis plan approved prior to analysis by the SATuRN SC	☐	☐	☐
Primary analysis in accordance with the approved analysis plan	☐	☐	☐
All current datasets included in the manuscript?	☐	☐	☐
Authorship citation adheres to the Uniform Requirements for Manuscripts Submitted to Biomedical Journals (Vancouver guidelines)?	☐	☐	☐
Is SATuRN and specific datasets'* funding acknowledged?	☐	☐	☐
Does citation mention SATURN?	☐	☐	☐
Is the acknowledgement section in line with SATURN's Manual appendix?	☐	☐	☐
If the manuscript uses named authorship, does the SATURN SC approve this?	☐	☐	☐
Did the SATURN EC receive statistical reports, early drafts of abstracts, presentations and manuscripts before submission?	☐	☐	☐
Manuscript sent to distribution to the SATURN SC for commenting with a 2-3 weeks deadline?	☐	☐	☐
Revised manuscript sent for final approval with one-week notice prior to submission deadline?	☐	☐	☐
Abstract/conference presentation sent to SC/EC for review at least one week prior to the submission deadline?	☐	☐	☐
Final abstract/conference presentation sent to SATURN SC after submission?	☐	☐	☐

Poster/ Oral Presentation using slide and updated acknowledgement Template available on SATURN website?	☐	☐	☐
Did the presenting author inform the SATURN SC of the decision of the conference Committee?	☐	☐	☐
The statistical scripts, the final dataset used to generate the analysis and original output leading to the publication submitted electronically to SATuRN EC?	☐	☐	☐

Funding acknowledgement for FIRST/SATuRN funded (or partly funded) projects

All FIRST/SATURN publications that are fully or partly a result of funding through EC must contain the statement:

The research leading to these results has received funding from the European Union (SANTE 2007 147–790)

Acknowledgement section

The current (February 2012) SATuRN acknowledgement section of publications should include:

Project team

<To be completed for the specific project>

Steering Committee:

Contributing datasets: Dataset

Executive Committee

Executive members list

Project leaders and statistical analysis

Name of individuals

Funding:

The SATuRN study group has received generic funding from the Wellcome Trust (082384/Z/07/Z), European Union (SANTE 2007 147–790), the US Centre for Diseases Control via CAPRISA (project title: Health Systems Strengthening and HIV Treatment Failure (HIV-TFC)), the US Centre for Disease Control (5U2GPS001083-04) and the Swiss South African Joint Research Programme (SSJRP) research grant entitled "SwissProt / South Africa: Protein Bioinformatics Resource Development for Important Health-related Pathogens".

Appendix 4, Members of the steering and executive committees (2 pages)

Each participating dataset will nominate one member from their respective datasets allowing representation in the Steering Committee (SC). This will allow for sufficient representation of all participating datasets.

Current Steering Committee members

Dr. Ava Avalos, Botswana Ministry of Health, Gaborone, Botswana.

Prof. Christopher Hoffmann, Aurum Institute for Health Research, Johannesburg, South Africa.

Dr. Cloete van Vuuren, Medical School, University of the Free State, South Africa.

Prof. David Katzenstein, Division of infectious Disease, Stanford University Medical Center, USA.

Dr. Dewald Steyn, Medical School, University of the Free State, South Africa.

Dr. Diana Dickinson, President of the Botswana HIV Clinican Society, Gaborone, Botswana.

Dr. Dominique Goedhals, Medical School, University of the Free State, South Africa.

Dr. Gert van Zyl, Division of Medical Virology, Department Pathology, NHLS, Tygerberg and Stellenbosch University, South Africa.

Justen Manasa, Africa Centre for Health and Population Studies, University of KwaZulu-Natal, Somkhele, South Africa.

Dr. Kevi Naidu, Africa Centre for Health and Population Studies, University of KwaZulu-Natal, Somkhele, South Africa.

Dr. Gillian Hunt, AIDS Unit at the National Institute for Communicable Diseases (NICD), Johannesburg, South Africa

Dr. Madisa Mine, Laboratory director, Botswana/Harvard Partnership, Gaborone, Botswana.

Prof. Marie-Louise Newell, Director of the Africa Centre for Health and Population Studies,

University of KwaZulu-Natal, Somkhele, South Africa.

Dr. Michelle Gordon, HIV Pathogenesis Programme, Doris Duke Medical Research Institute, University of KwaZulu-Natal, South Africa.

Dr. Nuala McGrath, London School Of Hygiene and Tropical Medicine, London, UK & Africa Centre for Health and Population Studies, University of KwaZulu-Natal, Somkhele, South Africa.

Dr. Richard Lessells, Africa Centre for Health and Population Studies, University of KwaZulu-Natal, Somkhele, South Africa & London School Of Hygiene and Tropical Medicine, London, UK.

Prof. Susan Engelbretch, Division of Medical Virology, Department Pathology, NHLS, Tygerberg and Stellenbosch University, South Africa.

Prof. Thumbi Ndung'u, HIV Pathogenesis Programme, Doris Duke Medical Research Institute, University of KwaZulu-Natal, South Africa.

Prof. Wolfgang Preiser, Division of Medical Virology, Department Pathology, NHLS, Tygerberg and Stellenbosch University, South Africa.

Prof. Wendy S. Stevens, Department of Molecular Medicine and Haematology, University of the Witwatersrand and the National health Laboratory Service, South Africa.

Current Executive Committee members

Dr. Tulio de Oliveira, (director), Africa Centre for Health and Population Studies University of KwaZulu-Natal, Somkhele - South Africa.

Prof. Chris Seebregts, (co-director), South African Medical Research Council

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