A clinical governance report on the

Monitoring and Evaluation of HIV Clinical Management at Integrated Treatment Centre 1999 – 2004

Special Preventive Programme
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Contents

Preface

As an important and integral part of the Public Health Services Branch in the Centre for Health Protection, Department of Health, the Special Preventive Programme (SPP) coordinates and supports the control of human immunodeficiency virus infection and related diseases in the community, contributes to the surveillance of communicable diseases, and provides clinical and treatment services.

In line with our strategy for the control and prevention of HIV/AIDS, which stresses the importance of prevention-treatment-care continuum, the SPP has been committed to providing quality clinical care and supportive services to people living with HIV/AIDS, through its service delivery at Integrated Treatment Centre (ITC). Indeed, Hong Kong is one of the few places in Asia which has provided quality care and treatment to HIV/AIDS patients within the public health sector since the early HIV epidemic.

In its strive for excellence, ITC has taken reference of overseas experience, developed and maintained clinical governance mechanisms since 1999 to ensure quality assurance through measurement, transparency and accountability.

This report presents the findings of governance pertaining to HIV/AIDS clinical management at ITC from 1999 to 2004, as part of the efforts and commitment to excellence. We see this report not as a milestone of achievement, but a starting point for a continuous programme of quality development which is necessary to meet new challenges and evolving development in the discipline.

I hope readers will find this report informative, responsive and stimulating.

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Background

1. Quality is both a vision and an attribute in health care. The US Institute of Medicine has defined quality as *"the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge"*. [1] In recent years, amidst other attempts, clinical governance has emerged to become one approach of framework for pursuing quality of care. The UK National Health Service defined clinical governance as *"the means by which organisations ensure the provision of quality clinical care by making individuals accountable for setting, maintaining and monitoring performance standards."* [2]

2. HIV medicine is a rapidly evolving discipline. Advances in the field in last few years, in particular the advent of highly active antiretroviral therapy (HAART), have been translated into improved patient management and clinical outcomes. [3-5] As such, the success was no second to care of other diseases, and the potential benefits of modern HIV treatment have to be realized for each and every patient as far as possible. On the other hand, the more complex treatment could also mean greater likelihood of iatrogenic non-compliance or misdeeds. Thus, to keep up with and deliver the standards of HIV care, a quality framework is naturally indispensable.

3. The Special Preventive Programme (SPP), Centre for Health Protection of the Department of Health has been striving its best for an excellence of care provision to HIV/AIDS patients. Against international and local developments in quality assurance as well as HIV medicine, SPP embarked on an endeavour of clinical governance in early 1999, with a view to total quality assurance in its designated HIV clinical services at Integrated Treatment Centre (ITC) (Box 1).

Box 1. Integrated Treatment Centre

Located in Kowloon Bay, Integrated Treatment Centre is the executive arm of the HIV clinical programme of Special Preventive Programme. It is one of the two designated HIV clinical services in Hong Kong, providing ambulatory care of antiretroviral therapy, adherence support, opportunistic infections management, disease monitoring, nursing counseling and consult, psychosocial counselling and other support. As of end of 2004, ITC has about 800 active patients under care. SPP also runs an AIDS Hotline and anonymous voluntary HIV counseling and testing service. The other programmes of SPP are: HIV prevention and health promotion, surveillance and epidemiology and

policy support.

4. The experience of implementing clinical governance at ITC was shared at the 33rd meeting of the Scientific Committee on AIDS (SCA) in September 2004, with a focus on the development of the system, its framework and clinical audit activities. This Report attempts to document the efforts pursued and present in greater details some of the data collected in the last five years.

Setting up a clinical governance system

5. There are various models of clinical governance or quality assurance. In considering the adoption of a system at SPP, it was envisaged that the context is most crucial. The specific setting and needs of the service determines its own model, albeit that it has to be modeled from the systems in other places. During the conceptualisation phase that lasted from early 1999 to October 1999, [6] three models of the United Kingdom, United States and the Hospital Authority of Hong Kong were examined at ITC. The UK clinical governance model was adopted ultimately, because of (a) the professional training system of UK was mostly compatible with that of Hong Kong, and (b) the UK system was still in a state of development and refinement, providing precious lessons for learning.

6. A Preparatory Committee on Clinical Governance was then set up at ITC to define and lay down the infrastructure of the system, which ran through mid-2000. Based on the UK experience, clinical governance, defined as *corporate accountability for clinical performance*, [7] was adopted as the all-encompassing concept for constructing a quality framework to pursue the goal of quality in HIV medicine at SPP. The continuum of setting standards, delivering standards and monitoring standards applies for the framework of clinical governance in ITC. (Box 2)

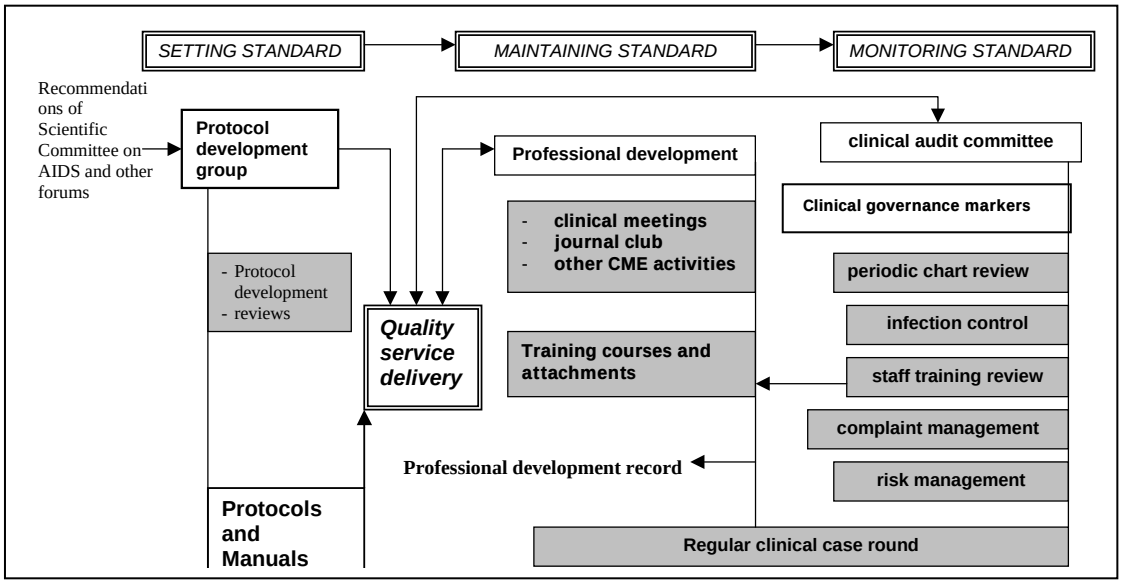
Box 2. The continuum of clinical governance

Setting standards	Linkage with the Scientific Committee on AIDS Protocol development mechanism
Maintaining standards	Journal meeting Clinical meeting Clinical case round Case conference
Monitoring standards	Periodic chart review Clinical governance markers

	Risk management Complaint management Infection control committee

7. Five spheres of activities were identified to be the backbone of the ITC model of clinical governance: (a) infection control, (b) evidence-based medicine, (c) risk and complaint management, (d) training and staff development, and (e) clinical audit. These activities and the framework are illustrated in Box 3. The consolidation phase of introducing clinical governance for SPP began with the formation of Clinical Audit Committee (CAC) (Box 4) that replaced the Preparatory Committee.

Box 3. The framework of clinical governance at ITC



Box 4. Clinical Audit Committee

Set up in April 2000, the Clinical Audit Committee (CAC) was charged with three terms of reference: (a) to audit the clinical practice, (b) to initiate and execute changes in practice, and (c) to improve quality of care. As such, the Committee oversees all matters in relation to clinical governance at SPP. Consultant Physician, SPP is the Chairman of the CAC. Quarterly meetings are held to review regular and arising items pertaining to clinical governance. A total of 20 meetings had been held as of January 2005.

8. Proactive auditing of HIV care and management at clinic practice level has been standardized and regularized, to form a critical component of the clinical governance system at ITC. Two methods were employed: (a) periodic chart review, and (b) clinical governance markers enumeration. The findings from

these two clinical audit approaches since their implementation were examined and systematically presented below.

Compliance audit with periodic chart review

How it started and got on

9. Chart review is a typical example of monitoring the standard of HIV care, through checking for compliance or non-compliance with standards set within a unit or accepted internationally. The idea of conducting similar review exercise at ITC was borrowed from the Johns Hopkins AIDS Service, upon the recommendation of Prof. John Bartlett when he came to Hong Kong to serve as one of the external consultants for the review of AIDS programme in Hong Kong in 1998. Prof. Bartlett introduced the idea, the process and a chart used for review at his service to us. Subsequently, after intense discussion and exploration of its applicability in ITC by the aforementioned Preparatory Committee, a protocol for implementation of chart review in our setting - periodic chart review (PCR) - was finalised in December 1999, detailing its rationale, content and operation. (Appendix I) Much of the protocol holds true till now, except the review and reporting is at quarterly and not bi-monthly interval.

10. Taking reference of the review chart used at Johns Hopkins AIDS Service, we adopted a standardised checklist of various documentation and quality indicators for compliance checking in each PCR exercise. The indicators currently in use is at Appendix II; many areas of HIV clinical care are covered, including antiretroviral treatment (ART), opportunistic infections prophylaxis, immunologic and virologic monitoring and gynaecologic examination. While some indicators apply to all patients, some apply to specific population groups and others apply only to patients with specific conditions. With the exception of the quality indicator of "appropriateness of PPD testing and therapy" which was added since the 7th review, all have been used since the very first PCR. It can be seen from Appendix II that "meeting" the documentation indicators is good for some quality indicators but not good for other which are coined in negative term, e.g. inappropriate antiretroviral therapy. There are reference notes laid down for assessing these documentation and quality indicators. (Appendix III) Elaboration of findings for each indicator, especially those with non-compliance to the standard shall be made as appropriate. These indicators represent the

minimum and standardised part of the review process only and reviewer is to check and comment on other areas relating to quality of care as judged from the medical record.

11. A digit from zero to nine is randomly chosen to be the last digit of the clinic number of patients whose charts are for review each time. Except three PCR for which all charts systematically sampled by this ending number were reviewed, only half (preceding even or odd number) of the charts selected that way were reviewed subsequently. Due to death, departure, transfer out and lost to follow-up, some of the selected cases would not be eligible for review. After exhausting all nine digits as the last number for the clinic number, a new cycle of using the 0-9 is repeated for chart selection. SPP doctor who serves as an internal reviewer takes turn to perform the chart review. The covering period of content under chart review is the last one year at time of the exercise. Basically all reviewers had participated in patient care to various extents at ITC.

12. The first PCR findings were presented at the first CAC meeting in April 2000. As of January 2005, a total of 20 PCR had been performed, presented and discussed at the CAC meetings. Table 1 shows some basic information on the PCRs done so far. Two of the reviews were on overlapping cases and presented on the same date of 17 May 2001. During the presentation of findings at CAC meeting, it has been a practice to list results of the indicators of the current as well as the immediate prior PCR for comparison. Qualitative comments on the indicators and other areas of importance were highlighted by the reviewers in their PCR reports.

Quantitative findings per PCR indicators

13. Quantitative results in terms of compliance level of the various documentation and quality indicators were generated from the review against the standard checklist. The findings can be arbitrarily classified under three categories:

(a) documentation indices,
(b) objective quality indicators, and
(c) subjective quality indicators.

14. The documentation indices refer to the 4 documentation indicators. Objective indicators are those quality indicators with clear-defined requirements; they include *Pneumocystis carinii* pneumonia (PCP, now renamed *Pneumocystis*

jerovecii pneumonia) prophylaxis when indicated, *Mycobacterium avium intracellulare* (MAI) prophylaxis when indicated, appropriate PPD (purified protein derivative) testing and therapy, up-to-date gynaecologic examination for pap smear, indirect ophthalmologic examination when indicated and failure to follow consensus of clinical case round (CCR, a forum to discuss and derive consensus on case management). Subjective quality indicators are those lacking more objective criteria for ruling as compliant or not; they include regular and timely CD4/viral load monitoring, undue delay in follow up of abnormal results, inappropriate antiretroviral therapy, contraindicated drug combination and oversight of non-adherence to antiretroviral therapy.

15. Longitudinal tracking of the 20 PCRs findings provides insight into the time trend of compliance with various indicators. It has to be emphasized that despite a protocol is in place, review findings are reviewer-dependent, in particular for the more subjective indicators. This stems from at least two reasons: (a) no easy standardised definition and inclusion for some items, and (b) subjective interpretation of compliance or otherwise of the indicators. Nevertheless, some trend can still be discerned from the results.

16. Figure 1 shows the compliance regarding documentation of information as judged in the PCRs over time. It was noted that the adoption of SOAP (subjective, objective, assessment, plan) logic improved gradually with time. Starting with half of the cases for which SOAP logic was followed, the proportion increased to consistently over 90% after 14 months or so of the exercise. Documentation of accurate information in the record had generally stayed at high level, which uncommonly scored less than 95%. The degree of complete and logical documentation has also improved with time up to the 9th review but then fluctuated widely for several exercises before stablised again. The lowest percent recorded was 11% in the 10th exercise. Missing signature/print names on consultation notes accounted for a large proportion of incomplete documentation found during PCR. Also, compliance of attention to legal issues fluctuated with time, with a dip more prominent in around the middle of the whole period. Overall, it can be said that documentation indices were of high scores and there was a general trend of improvement over time.

17. Results of the objective quality indicators of prophylaxis for PCP and MAI, and workup and treatment of latent tuberculosis are depicted in Figure 2. Compliance with PCP prophylaxis is at 100% for all reviews except twice; one at

86% and the other 92%, indicating good implementation of this important intervention which effectively improves survival of HIV-infected patients. Although the number of advanced disease patients indicated for MAI prophylaxis were much less than those requiring PCP prophylaxis, compliance was equally good with only one time (66.7%) not being full. Compliance with appropriate PPD testing and therapy was poor in our clinic when this indicator was first recommended internationally - a major reason for its inclusion into the PCR then. The unfavourable results triggered measures to enhance compliance with detecting and treating latent TB. For example, a reminder card was placed for doctor and cooperation with prison staff to read PPD results of their inmates was initiated. The compliance rate did improve with time, being some 80-90% in the last five reviews.

18. Figure 3 shows the results regarding two regular checkups of HIV disease – pap smear in female patients and retinal examination for advanced patients. There was improvement in up-to-date gynaecological examination over time, which consistently achieved over 80% in the second half of the reviews so far. This was after the introduction of an examination reminder on the doctor consultation desk. The compliance rate of indirect ophthalmic examination fluctuated quite widely, probably related to the small number of patients involved.

19. Results of subjective quality indicators in HIV management can be categorised into two groups: disease monitoring/follow-up and antiretroviral therapy. For the first, it was found that timely and regular monitoring of CD4/viral load and appropriate responses started at about 80% in the first PCRs and then improved to consistently at or near 100% since 2002 (Figure 4). However, the occurrence of undue delay in follow up of abnormal results fluctuated across the review years, ranging from nil on many PCRs to the highest of 25% for once (Figure 4). There was a whole range of abnormal results, including that of biochemistry, haematology, HIV markers and X-rays.

20. Irregularities of antiretroviral therapy as assessed from charts were uncommon over the years (Figure 5). The rate of giving inappropriate antiretroviral therapy was often zero, with the highest of 15% found in one PCR. Contraindicated drug combinations were identified in less than 10% for all PCRs, again with many times being non-existent in the reviews. Oversight of non-adherence to antiretroviral therapy was also rare. Poorer findings for these

three indicators were in the first 2 PCRs.

Synthesis of qualitative findings

21. There were qualitative comments by the reviewers in their respective PCR, be them highlights of important points, explanation of their ruling, or supplementation of information that were not captured by the specific indicators. It was observed that the tone of the reviewers fluctuated over time. All in all, the major qualitative emphases can be summarised as: orderly layout of information and filing of results, complete and orderly documentation of notes, accuracy of information, attention to issues of legal implications and legible hand-writing. To minimise error, smoothen subsequent management and facilitate follow up of progress of the patient, the followings have been recommended by the reviewers: proper disposal of outdated laboratory summaries, efficient use of computer, writing down of investigations performed, alert for abnormal result and its follow up action, documentation of working/provisional diagnosis, and periodic drawing up of case summary. Legibility and synthesis of meaningful management plan are considered particularly important for following patient management.

22. Upon the comments and discussions about the findings of PCR, measures have been adopted per recommendations to narrow service gaps and improve patient care. For instance, a list of commonly used abbreviations has been compiled for better documentation. Some patient form was modified to suit the changing needs. More attention on continuity of care, linkage with hospital and obtain of information was paid. For the PCR itself, several new measures were lately introduced to streamline its administration, operation and documentation.

Monitoring with clinical governance markers

23. With the relocation of the government HIV clinic to the Integrated Treatment Centre in mid 1999, a customised computerized Clinical Information System (CIS) was planned and designed to keep track of the clinic patient cohort. With the numerous efforts of care team doctors and nurses, the CIS began its operation in early 2000. The CIS is employed to collect, store and retrieve data pertinent to clinical management, clinical governance, research and planning.

24. The development of CIS enabled and supported a systematic approach to

clinical governance of HIV care, with regular monitoring of pre-defined markers. Data is captured into CIS on a day-to-day as well as quarterly basis per protocols set. As a consequence, clinical governance markers can be generated quarterly and yearly from the system. These markers can be categorised into three areas: (a) clinical caseload statistics, (b) risk management indices, and (c) clinical effectiveness indicators. The effectiveness indicators are specifically linked to optimal clinical outcomes, which thus measure the care quality. Definitions of the various markers in these three categories are at Appendix IV.

25. The first set of standardized markers was drawn for the fourth quarter and the year of 2002. Yearly findings of 2002, 2003 and 2004 are at Tables 2 to 10 and Figures 6 to 12. It is noted that some 110-150 new HIV positive patients were seen at ITC each year. Demographically, about 85-90% of them was male, ethnic Chinese and contracted HIV via sexual contact (Table 2). Annually there were close to 40 new AIDS cases (Table 3) who were either known HIV infected patients or, more likely, had HIV diagnosed only when they presented late with AIDS. With the referral of new patients and cumulating old cases, the number of active patients increased each year by about 15%. Similarly, a majority of the active patients (who had attended at least once in the last 1 year period) were male. At any single year, about one-fourth of the patients under care had already progressed to AIDS (Table 4). Over half of the cumulative reported HIV/AIDS cases had ever attended the government HIV clinic (Table 5).

26. From 2002 to 2004, patients newly started on antiretroviral therapy per year increased from 67 to 100 (Table 6). Seldom was the prescription indicated for prevention of mother-to-child transmission, which could be explained by the low HIV prevalence among women in the locality. The proportion of active patients who were on antiretroviral treatment was on a continual rise over these 3 years. This reflects the life-long nature of antiretroviral therapy and also its success. As expected, HAART was received by almost all of the patients under treatment; monotherapy or dual therapy were still taken by some patients for historical reasons (Table 6).

27. Laboratory monitoring is of crucial importance in following HIV disease progression and response after treatment. As of now, CD4/CD8 T lymphocyte and plasma HIV-1 viral load are the two pivotal tests in this regard. In the government HIV clinic, the former has been in use since 1985 while the latter became available in 1996. Our practice is to check these two surrogates every

3-4 months for stable patients, with closer repeat when need arises. About 5% of active patients did not have a CD4 or viral load check within 6 months, which was quite consistent across years (Figure 6). The most plausible reason was irregularity of clinic attendance, which also hinges on risk management of HIV care.

28. HAART became the standard of care in our clinic in 1997. Table 7 shows that all except two of the patients newly started on antiretroviral therapy between 2002 and 2004 for their HIV disease were put on HAART – the 2 patients were started on treatment overseas before presenting to ITC. To achieve the effectiveness of HAART, good drug adherence of the patients is indispensable. Since the availability of HAART in our clinic, a Drug Adherence Counselling Programme has been developed and spear-headed by the nursing team. The programme serves to support as well as monitor drug taking behaviour and adherence of patients on antiretroviral treatment. Self report by patient of the number of missed drug doses since last clinic visit [8] was used to gauge level of drug adherence. It was noted that consistently some 80% and 95% of the assessed patients had full and >=95% adherence (Figure 7).

29. Viral load suppression is a direct measure of the efficacy of current antiretroviral therapy, which literally inhibits viral replication. On an intent-to-treat approach, we found that some 60-80% of the patients newly initiated on antiretroviral therapy had undetectable (<500 copies/ml) plasma viral load (Figure 8). Several reasons may contribute to not achieving full viral suppression, including treatment withdrawal, default and treatment failure. From a different angle, we monitored the proportion of patients who previously responded to treatment but now had viral rebound. There were some 10-15% of such ever-responded patients on a yearly basis with a seemingly downward trend (Figure 9). Some of these patients could have stopped treatment due to one reason or another, for which we have not examined under the governance markers as defined. Attainment of initial and durable viral suppression in most of the patients echoes an earlier study of us that found good correlation between reported drug adherence and plasma viral load. [9]

30. Improving clinical outcome in HIV/AIDS patients is the ultimate aim of antiretroviral therapy in ITC. This is in line with the goal of minimizing morbidity arising from HIV/AIDS in Hong Kong as recommended by the SCA. [10] We gauged the development of new AIDS-defining illnesses (ADI) in patients who

had been followed up for over 6 months to proxy our care effectiveness, after discounting complications under harbour before clinic attendance. As shown in Figure 10, about 2-3% of the patients developed new ADI after on track of follow-up, of which 30-60% were PCP, a most common but preventable condition. With the advent of HAART and improved HIV care, death was now a rare event. Some 5 to 14 deaths were recorded each year between 2002 and 2004 (Table 8). The mortality ratio as defined by the number of deaths over the number of active patients was 0.83-1.76% (Table 9).

31. Maintaining patients under care is of both clinical good to individual patient and benefits on a global public health consideration. In tracking the situation of default among active patients, a consistent <4% yearly default rate was found in the 3-year period (Figure 11). Of the cumulative patients who ever attended the government HIV service, some 60% were active patients at ITC as of end of 2002 to 2004 (Figure 12). We use the occurrence of several sexually transmitted diseases (STD) - early syphilis, gonorrhoea, Chylamydia and trichomoniasis to reflect unsafe sex in our patient population. Viral diseases such as herpes simplex and wart were not included as it is hard to differentiate between new infections or recurrence of old diseases. The new STD incidence was low across the years (Table 10). However, we cannot exclude under diagnosis.

Discussion

32. In the last few years, we have used two methods – periodic chart review and governance markers enumeration – for regular monitoring and evaluation of the performance of clinical HIV management at Integrated Treatment Centre. Taking reference of overseas experience in clinical governance of medicine and specifically that on HIV/AIDS care, we have developed and systemised our own model. It is envisaged that continual tracking of clinical service delivery is necessary to uphold and improve standard of care. The importance of quality assurance has become increasingly recognised and this is no less for the once deadly HIV disease but now a chronic condition. Not only conforming to the local SCA recommendations, [10] our experience on governance of HIV care may be applicable to similar initiative on other clinical services, which may or may not have major public health importance. Documentation in this Report would thus be useful reference for other care providers.

33. PCR at ITC was charged to focus on two key aspects of medical notes: (a) the completeness, propriety and accuracy of documentation, and (b) timeliness and appropriateness of clinical management. The coverage of review is actually quite wide, ranging from record writing/documentation, attendance to medico-legal issues and specific HIV disease monitoring and management. While without bearing on penalizing attending doctors, PCR has proved its value as a clinical audit tool in upholding and augmenting the overall standard of care, according to those recognised internationally or set locally.

34. It is quite clear that serial comparison of the review findings can shed light into our care practice, viz. whether standard was followed, and the changes with time. Understandably, some indicators are bound to have more fluctuation while others are expected to follow a better defined level of "performance". We should be mindful that the results might not be directly comparable from year to year, in particular for the more subjective and reviewer-dependent indicators, as the reviews were done by different persons at different times and subjective element cannot be ruled out. Regular undertake of the exercise shall, however, provide reasonable buffer in its accuracy and consistency. Hence, marked difference from the "norm" shall alert us of the possibility of unintended deviation of standard of care. As such, follow up actions would be needed. Qualitative findings are the other important product of PCR. Observations, comments and recommendations of the reviewers had provided triggers for care improvement.

35. As HIV medicine is fast-changing, the PCR indicators have, paradoxically, to be kept under periodic review. Modification of the interpretations of the indicators per our standard of care (and even the indicators per se) might be necessary from time to time to keep up with the international and local changes. The indicator on PPD testing was added in 2001 to be in line with the change in our clinic practice of adopting the test and treatment of latent TB. The need for further modifications to the scope of review shall be borne in mind should there be critical changes in HIV management in the future. On the other hand, we have relied on internal reviewers to do the exercise all along. Soliciting the assistance of external reviewers, if feasible, may have the advantage of allowing more objective assessment and external validation.

36. Establishment of a computerized information system has proven to be immensely useful for a variety of purposes. As far as clinical governance is

concerned, the CIS at ITC greatly facilitated its quantitative measurement and monitoring through regular retrieval of markers of different aspects. Short of such, it would be difficult to obtain timely and accurate statistics pertinent to quality assurance and improvement. In fact, collection of data aids individual patient management from the outset and this has the added value of enabling global analysis for research and evaluation.

37. The governance markers were set after years of deliberation among the care teams at and off CAC meetings. To us, these quantitative markers reflect the most tale-telling parameters of HIV care and they complement as well as supplement findings of the PCR, for painting a more complete governance picture at ITC. The clinical effectiveness indicators cover prescription of and adherence to antiretroviral therapy, viral load response, development of ADI, mortality, compliance with regular follow up and unsafe sex leading to contract of new STDs. As regards risk management indices, they are on the two basic but essential laboratory tests of CD4 and viral load.

38. All in all, findings of the various areas of clinical effectiveness were satisfactory. Virtually all therapy commencement of patients who were indicated for treatment followed the state-of-the-art of HAART. The 60-80% of patients with viral load suppressed to below detection limit 6 months after HAART initiation is less than optimal but compatible with overseas experience. It is encouraging to find that a low proportion (less than 15%) of patients who ever responded to HAART now had viral rebound from failure or treatment cessation. This compares favourably with western report of over half of patients on HAART having virologic failure even in university clinic practice. [11] The good virologic response most likely resulted from good drug adherence of the patients, which hinges greatly on the counseling programme. Good virologic control translated into improved clinical course, with fewer patients than expected developing new ADIs. As a consequence, HIV/AIDS mortality was also substantially reduced. It is important to ensure regular follow up of the patients, and the annual default rate was below 4% at ITC. Clinic-based prevention targeting HIV-infected patients has become contemporary; as such the occurrence of new STDs among our patient population was found to be uncommon.

39. HIV medicine is rapidly advancing and so is the problems encountered in patients during clinical practice. In view of the changing recommendations and environment, to truly reflect the quality of care as time moves, it is important to

keep the governance markers and scope of periodic chart review under scrutiny, and modify according to the development. One obvious area is toxicity of HAART, which is fast becoming a key concern with the prolonged treatment and improved longevity of patients. For example, metabolic complications are more and more common nowadays in HIV positive patients, in particular among those on HAART. The other aspect would be treatment failure as gauged by resistance development. So far we have not included side effects and resistance monitoring in our governance system, which shall be explored for its improvement in the future.

40. Over the last 5 years, clinical governance has gradually evolved from zero and become integrated into the HIV clinical service of ITC. This would not have been possible without the care infrastructure, vision of the initiator, effort of the system builder and commitment of professional care teams. The system currently in place at ITC is characterised by (a) adoption of a systematic approach, (b) emphasis on evidence and competency-based medicine, (c) inclusion of a variety of core components, and (d) implementation at on-going regular time intervals. Elucidating various findings in the monitoring and evaluation of clinical management enables the keeping track of trends in care provision, care quality and effectiveness, as well as informing service needs. Further cumulation of experience in our learning curve, coupled with appropriate actions would be required for the ultimate pursuit of excellence in HIV patient care.

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Tables & Figures

Table 1. Cases and reviewers of PCR presented from April 2000 to January 2005

	Presentation date	Case criteria	No. of cases	Reviewer
1st	2000/4/13	all 1 as last digit	35	A
2nd	2000/9/12	all 8 as last digit	36	B
3rd	2000/11/9	even 5 as last digit	20	C
4th	2001/2/15	even 3 as last digit	22	D
5th	2001/5/17	even 9 as last digit	44	E
6th	2001/5/17	all 9 as last digit	23	F
7th	2001/8/16	odd 0 as last digit	25	G
8th	2001/12/6	odd 2 as last digit	23	H
9th	2002/3/7	odd 3 as last digit	26	I
10th	2002/6/6	odd 7 as last digit	26	B
11th	2002/9/5	odd 4 as last digit	24	J
12th	2003/1/3	odd 6 as last digit	30	K
13th	2003/3/3	odd 5 as last digit	30	L
14th	2003/6/3	odd 6 as last digit	32	F
15th	2003/9/26	odd 0 as last digit	28	M
16th	2003/12/22	even 1 as last digit	30	A
17th	2004/3/29	odd 3 as last digit	32	J
18th	2004/7/6	even 9 as last digit	36	L
19th	2004/10/5	even 7 as last digit	37	F
20th	2005/1/11	even 2 as last digit	37	A

Table 2. Number and demographic characteristics of new patients

	2002	2003	2004
Total no.	145	109	140
Sex			
Male (%)	122 (84%)	94 (86%)	115 (82%)
Female (%)	23 (16%)	15 (14%)	25 (18%)
Ethnicity			
Chinese (%)	112 (77%)	90 (83%)	112 (80%)
Non-Chinese (%)	33 (23%)	19 (17%)	28 (20%)
HIV risk			
Heterosexual (%)	90 (62%)	58 (53%)	68 (49%)
Men who have sex with men (%)	44 (30%)	39 (36%)	50 (36%)
Injecting drug use (%)	9 (6%)	12 (11%)	21 (15%)
Others (%)	2 (1%)	0 (0%)	1 (1%)

Table 3. New AIDS patients

	2002	2003	2004
Total no.	38	37	37
Sex			
Male (%)	30 (79%)	33 (89%)	33 (89%)
Female (%)	8 (21%)	4 (11%)	4 (11%)

Table 4. *Active HIV/AIDS caseload

	2002	2003	2004
Total no.	605	698	796
Sex			
Male (%)	495 (82%)	576 (83%)	656 (82%)
Female (%)	110 (18%)	122 (17%)	140 (18%)
Disease status			
HIV (%)	458 (76%)	513 (73%)	593 (74%)
AIDS (%)	147 (24%)	183 (26%)	203 (26%)

**Active patient is defined as patient who attended for follow-up at least once in the preceding year*

Table 5. Cumulative and active patient against total reported cases in Hong Kong

	2002	2003	2004
No. of cumulative caseload	1072	1179	1318
No. of total reported HIV/AIDS	2015	2244	2512
% total reported cases ever attended ITC	53.2%	52.5%	52.5%
% total reported cases being active ITC patients	30.0%	31.1%	31.7%

Table 6. Antiretroviral therapy in newly started and active patients

	2002	2003	2004
No. of patients newly started on ART for disease treatment	62	76	98
No. of patients newly started on ART for MTCT prophylaxis	5	1	2
No. of active patients	605	698	796
No. of patients on ART	366	443	530
% of active patients on ART	60.5%	63.5%	66.6%
% regimen			
Monotherapy	1.09%	0.9%	0.57%
Dual therapy	3.55%	2.03%	0.57%
HAART (>=3 antiretrovirals)	95.36%	97.07%	98.87%

Table 7. Newly initiated ART for disease management being HAART

	2002	2003	2004
No. of patients newly started on ART for disease treatment	62	76	98
No. of patients newly started on HAART (>=3 antiretrovirals) for disease treatment	61	76	97
% being HAART	98%	100%	99%

Table 8. Deaths in ever clinic patients

	2002	2003	2004
Total no. of deaths in ever patients (both AIDS and non-AIDS)	5	8	14
Deaths in AIDS patients (%)	2 (40%)	6 (75%)	12 (86%)
Deaths in non-AIDS patients (%)	3 (60%)	2 (25%)	2 (14%)

Table 9. Mortality ratio

	2002	2003	2004
No. of active patients	605	698	796
No. of deaths	5	8	14
% of deaths against active patients	0.83%	1.15%	1.76%

Table 10. New sexually transmitted diseases (STD) in clients

	2002	2003	2004
No. of patients with new STD	11	15	7
No. of specified STD episodes	14	16	7
Follow-up person-months	6122	7242	8249
New STD incidence density (episodes/person-months)	0.23%	0.22%	0.08%

Figure 1. Documentation indices from periodic chart review

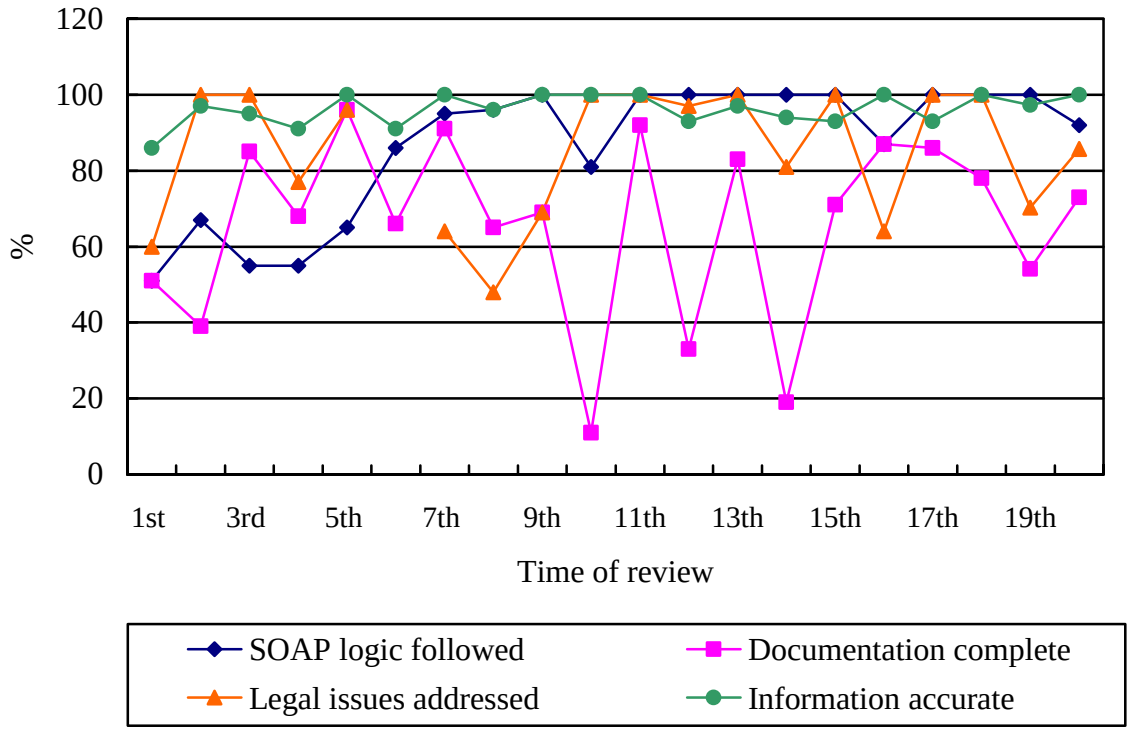


Figure 2. Objective quality indicators of opportunistic infection prophylaxis

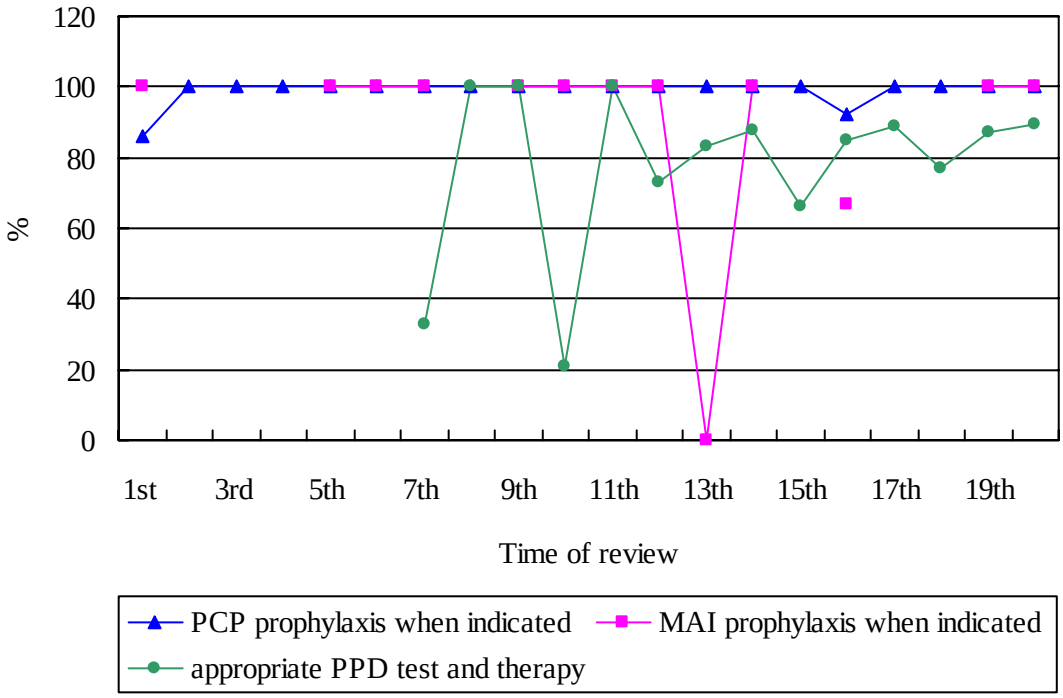


Figure 3. Quality indicators of regular clinical check up and follow up of consensus

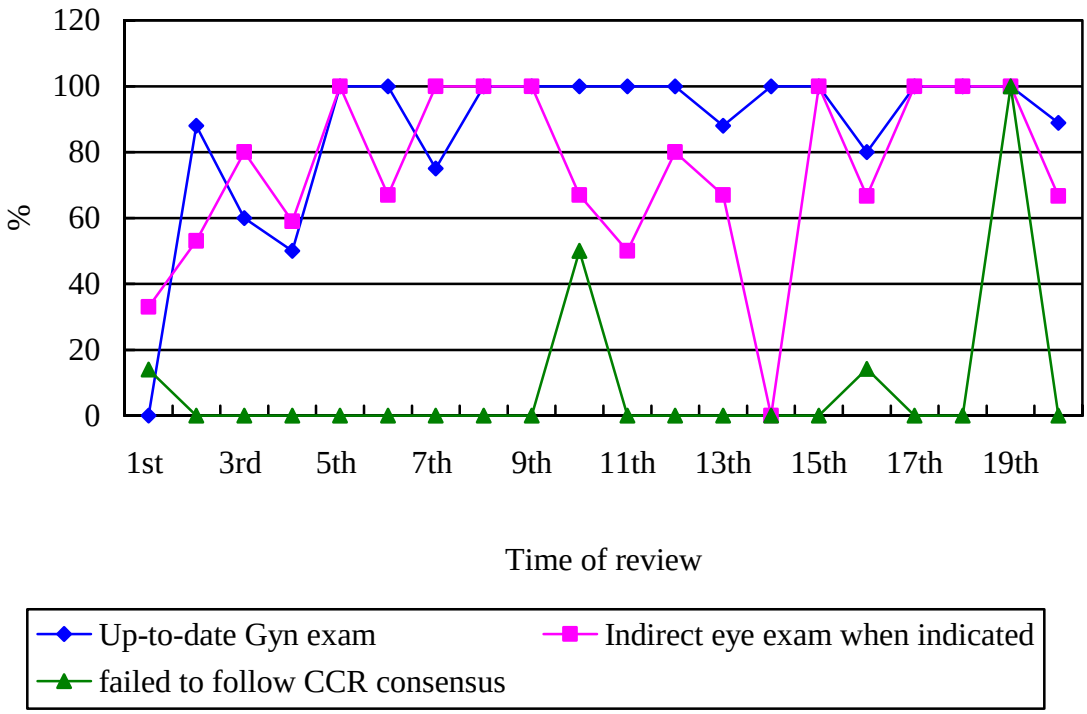


Figure 4. Subjective quality indicators of laboratory monitoring and follow up

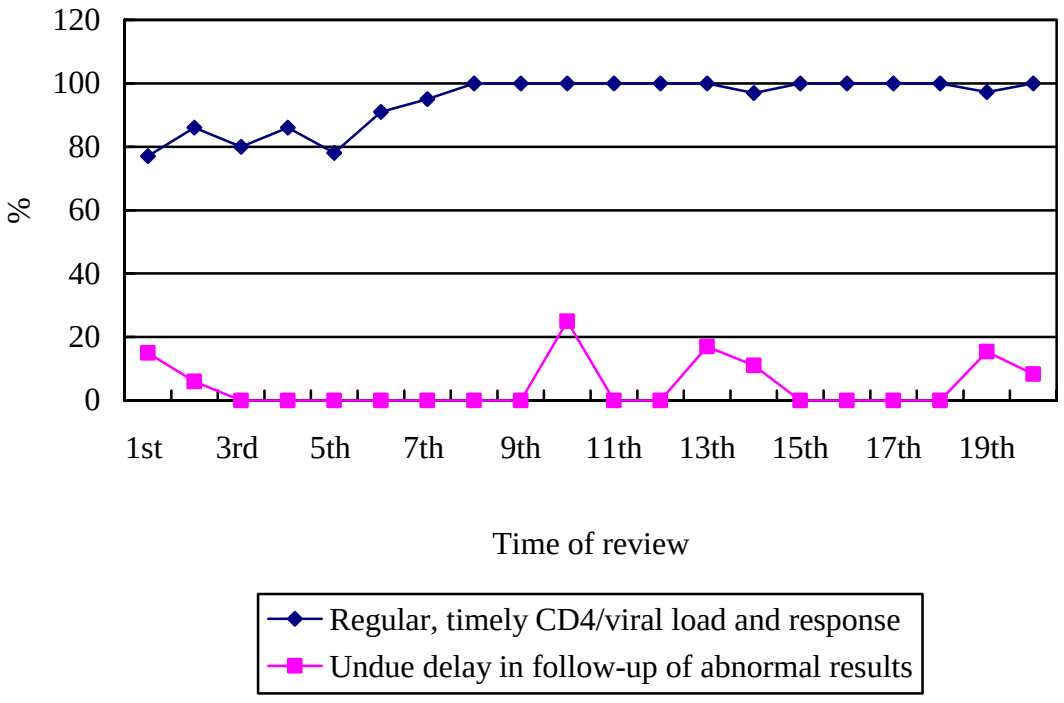


Figure 5. Subjective quality indicators on antiretroviral treatment

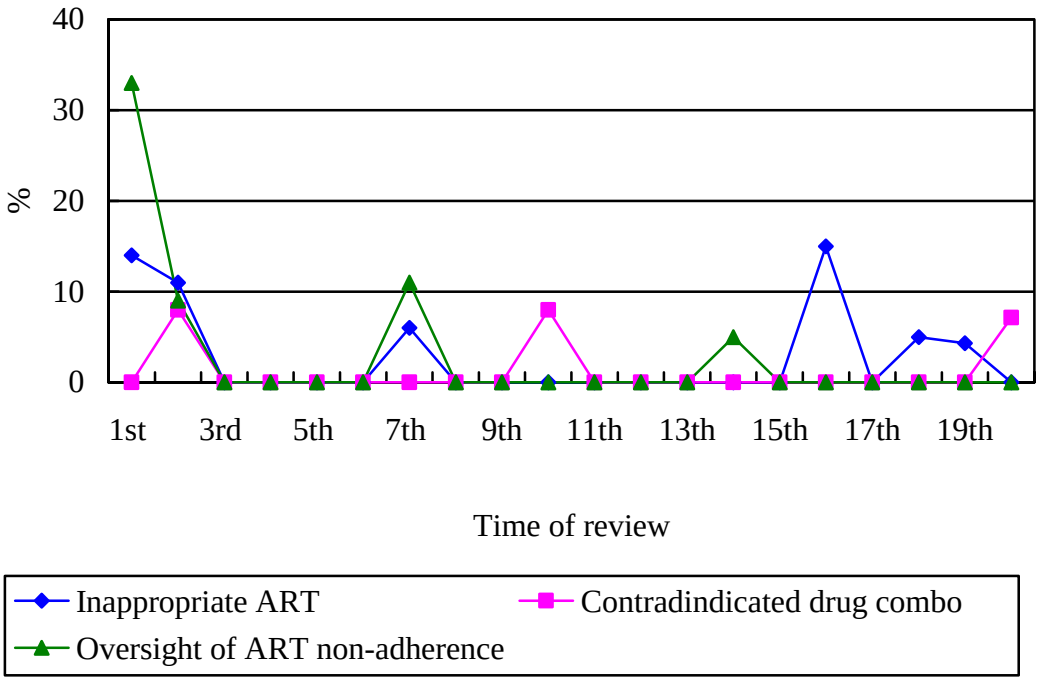
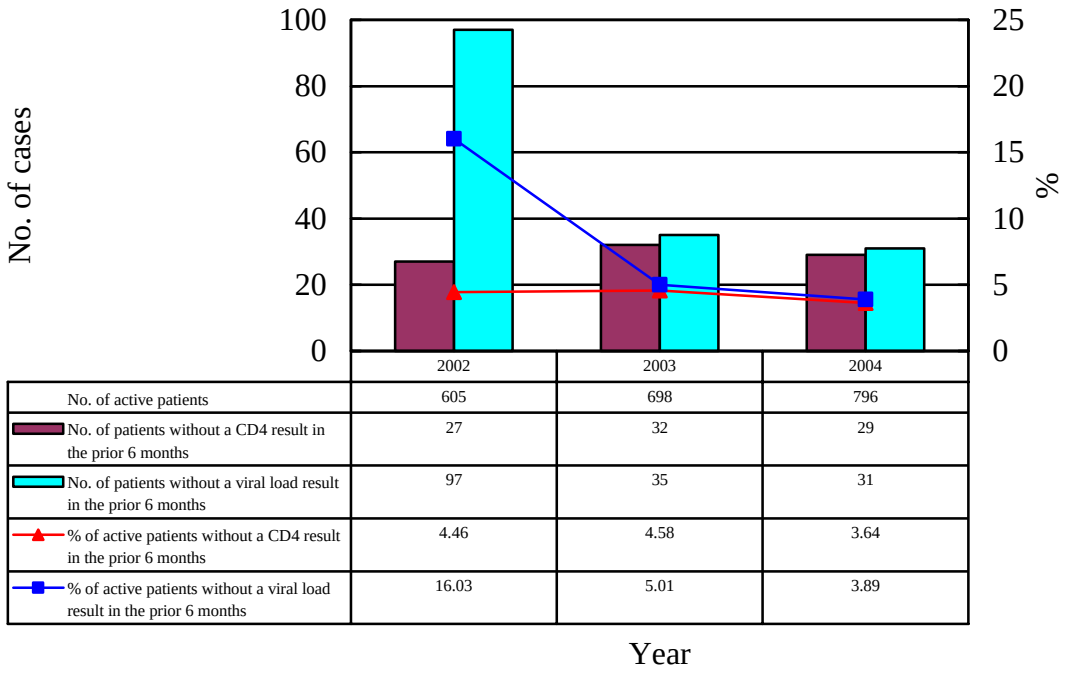
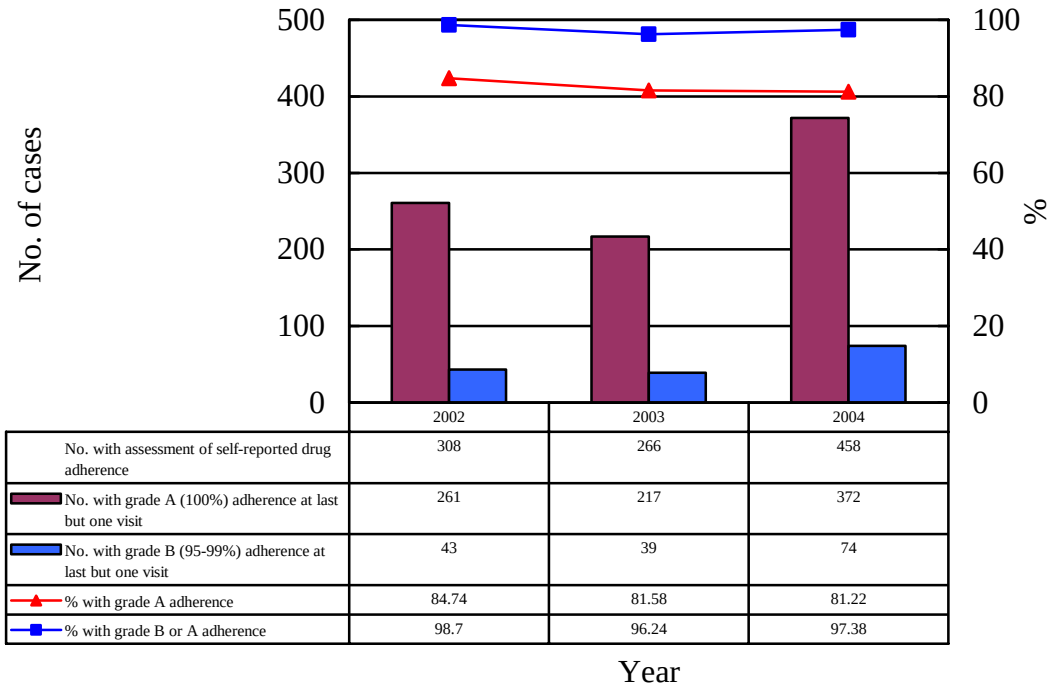


Figure 6. Lack of regular monitor of CD4/CD8 T lymphocyte and lack of regular monitor of plasma viral load



	2002	2003	2004
No. of active patients	605	698	796
No. of patients without a CD4 result in the prior 6 months	27	32	29
No. of patients without a viral load result in the prior 6 months	97	35	31
% of active patients without a CD4 result in the prior 6 months	4.46	4.58	3.64
% of active patients without a viral load result in the prior 6 months	16.03	5.01	3.89

Figure 7. Patients on ART have good adherence



	2002	2003	2004
No. with assessment of self-reported drug adherence	308	266	458
No. with grade A (100%) adherence at last but one visit	261	217	372
No. with grade B (95-99%) adherence at last but one visit	43	39	74
% with grade A adherence	84.74	81.58	81.22
% with grade B or A adherence	98.7	96.24	97.38

Figure 8. Undetectable viral load at 6 months post-ART initation for disease treatment

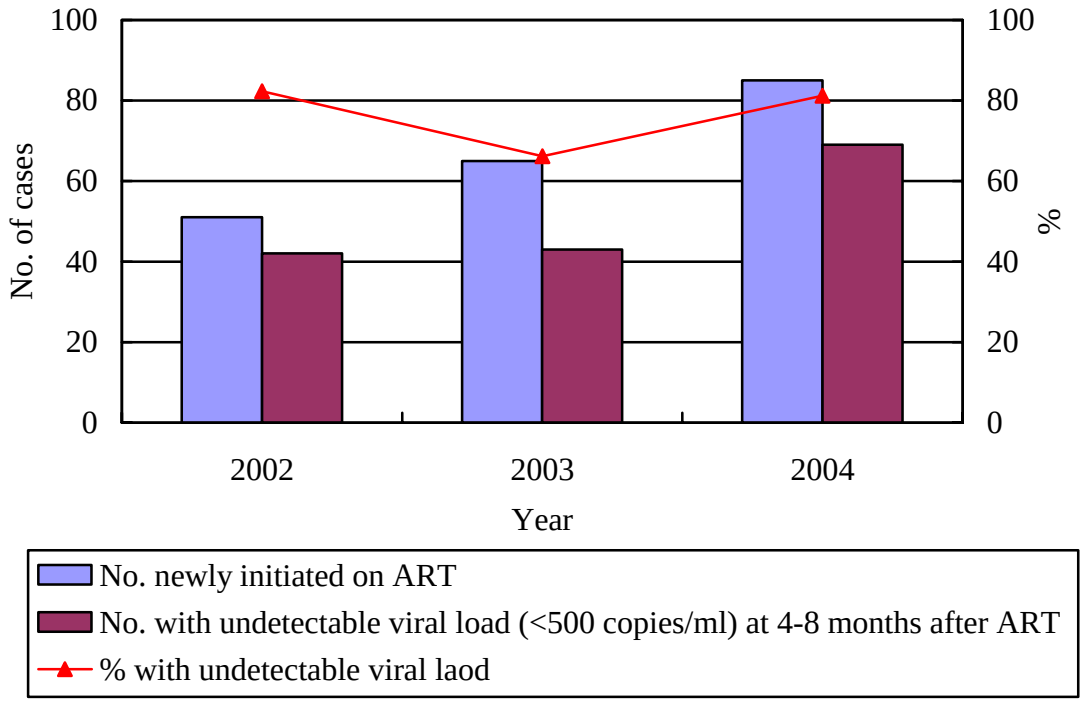


Figure 9. Virological failure in patients who ever responded to HAART

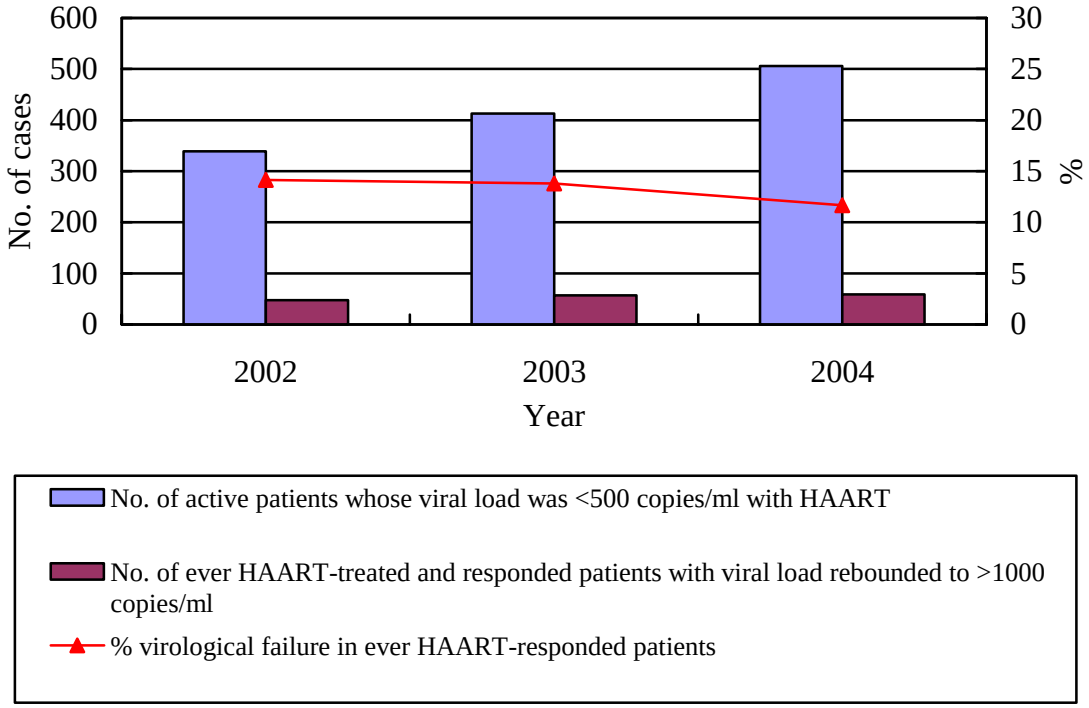
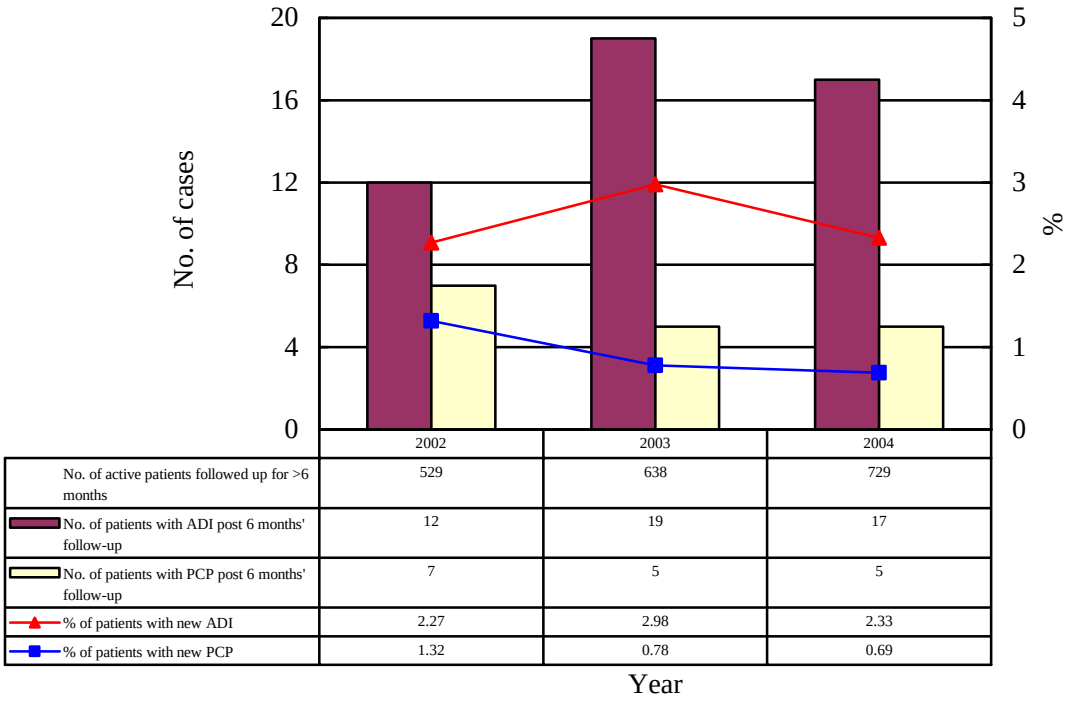


Figure 10. Patients with new ADI after on track of follow-up and patients with new PCP after on track of follow-up



	2002	2003	2004
No. of active patients followed up for >6 months	529	638	729
No. of patients with ADI post 6 months' follow-up	12	19	17
No. of patients with PCP post 6 months' follow-up	7	5	5
% of patients with new ADI	2.27	2.98	2.33
% of patients with new PCP	1.32	0.78	0.69

Figure 11. Annual default rate

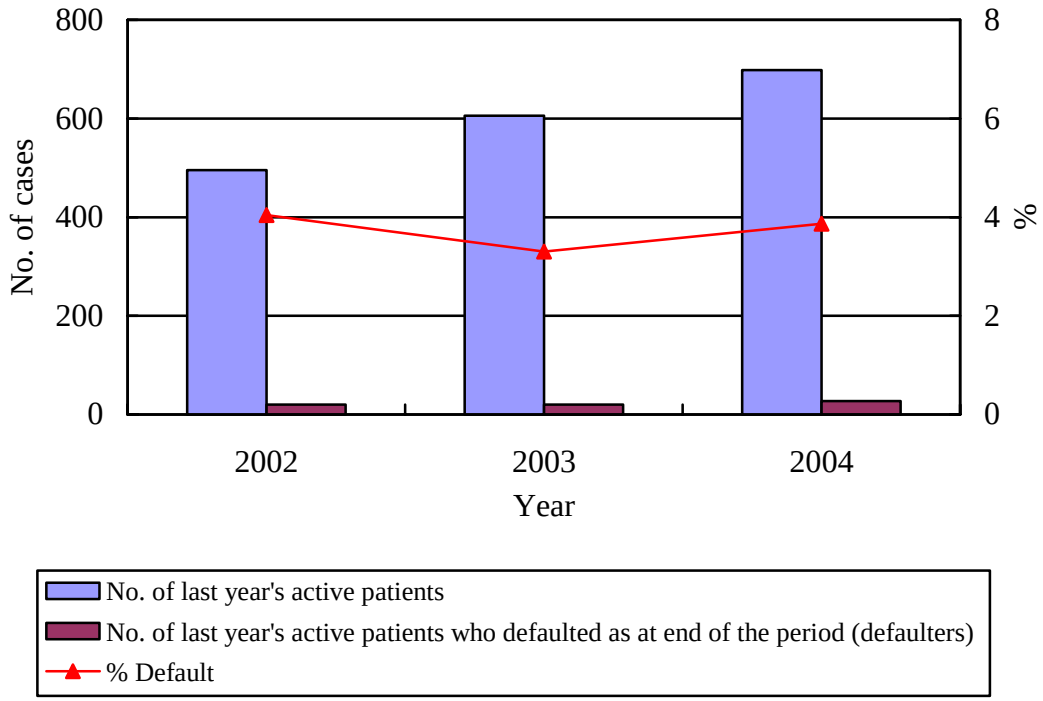
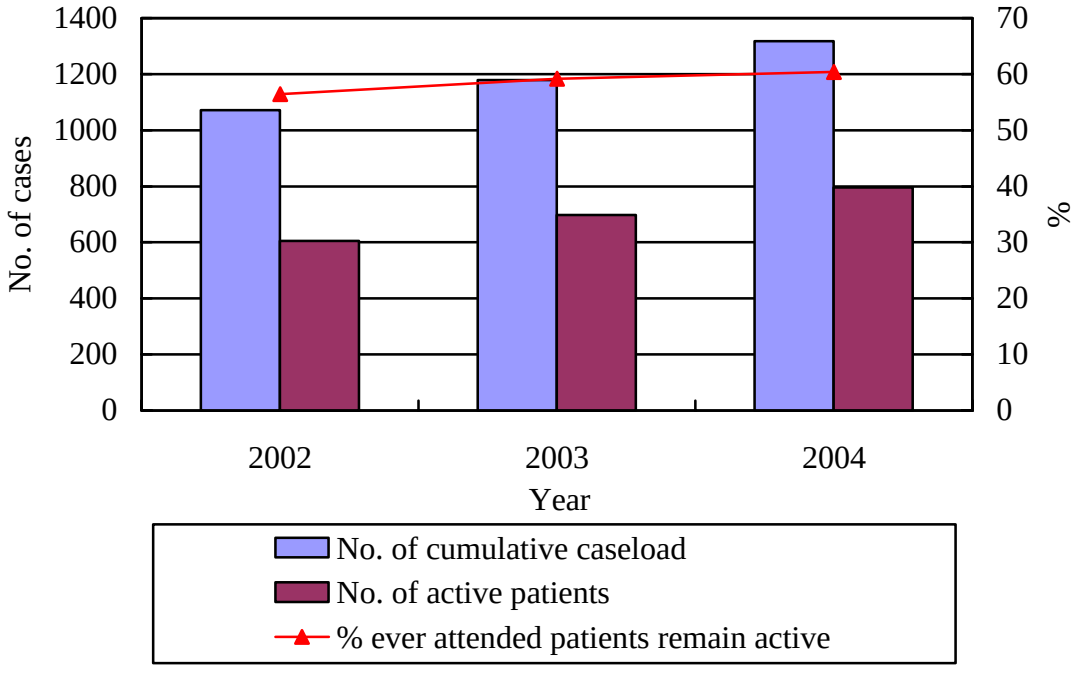


Figure 12. Patients remain under care



Appendix I

Protocol of Periodic chart review in SPP (December 1999)

Introduction

1. Information about the clinical care of patients is recorded in their record or casenotes. Many people are involved in creating, using and maintaining these at considerable expense. Good medical records facilitate good medical management and can be reliably used for research and clinical audit.

2. Poor casenotes undermine quality care. Physicians may miss viral information on drugs, allergies or previous test results; consultations may take longer than necessary; investigations may need to be repeated. Poor records jeopardize patients and also reflect poorly on the quality of the entire service.

3. Casenotes exist primarily to describe management of the client. Any review of charts will therefore be incomplete if the underlying medical management is not examined as well as the quality of documentation.

An Overview

4. Periodic Chart Review (PCR) is an effort of quality assurance in the provision of health care in SPP. As such it constitutes one element of clinical audit. Indeed, as stipulated in the discussion paper on clinical governance in SPP, PCR is overseen by the Clinical Audit Committee (CAC). However, its regular reporting conference will be attended by all medical staff.

5. PCR in SPP is a systematic and continual review of patients' records, with regard to the following:
   (a) The completeness, propriety, and accuracy of documentation
   (b) Timeliness and appropriateness of clinical management

6. Some overlap of activity is therefore expected with clinical risk management. In fact, both share the same objective, that of quality improvement. Nevertheless, the approach taken differs. PCR takes a more qualitative and individual stance, addressing substandard practice and documentation as reflected in medical casenotes, whereas risk management focuses more on specific, predefined indicators of the whole service.

7. Although the scope of PCR is currently limited to medical notes and the focus on improving the quality of medical management, it is hoped that a parallel programme will develop for nursing records. The idealistic vision is one of an efficient and effective review of all notes, nursing and medical, by a single team of physicians, nurses and social workers.

8. There can be no overstating the importance of culturing a learning environment in relation to the review process, if the objective is the quality improvement of service. A disciplinary approach will defeat the purpose by discouraging reporting and creating defensiveness.

9. A regular reporting conference will be the highlight of the effort. In this the appointed reviewer presents his findings and makes recommendations on improvement. These will be duly noted and submitted to the clinical audit committee for consideration of policy changes, alignment of training needs, or further investigations.

10. It is easy to fall into a vicious cycle of mutual fault-finding if the highest standard of professionalism is not upheld. To forestall such a potentially counterproductive scenario, the reviewer shall strive to make the conference a learning and educative opportunity for all medical staff, remembering that the subject of review is the notes and the recorded medical management, not any individual doctor. Indeed, he is also encouraged to present what he thinks is commendable and exemplary practice for emulation.

The Operation

11. A 2-monthly rota of reviewers is prepared by the Clinical Audit Committee. The rota involves all doctors in the clinic, regardless of rank. This is necessary if the PCR is to be seen as a transparent and fair process.

12. The subject of review is all medical records. There is no time limitation on the selection of charts. The review is undertaken systematically and will at least consist of all records whose serial numbers end with a predetermined digit. All medical staff are also encouraged to submit to the reviewer-on-duty charts for review. Feedback will be provided to those who report so as to maintain momentum. The reason for submission may either be questionable or commendable practice.

Criteria of Review

13. The reviewer examines two aspects of the medical notes[*]:
    (a) The completeness, propriety and accuracy of documentation
    (b) Timeliness and appropriateness of clinical management

[*] A checklist is appended for use in the initial rounds of PCR.

14. A relative rather than absolute attribute, quality shall be judged by referencing against standards. Notes shall follow the SOAP mnemonic[1], to ensure their **completeness**:
    (a) **S**ubjective: patient's comments, requests, or complaints, eg "It hurts when I take a leak".
    (b) **O**bjective: description of physical findings and recording of laboratory, x ray, or ECG data
    (c) **A**ssessment: analysis of data and tentative diagnosis; identification of problems that have to be addressed; checklist of health maintenance, etc.
    (d) **P**lan: diagnostic studies and therapeutic regimen; liaison with social workers, hospice or NGOs; admission to hospital.

15. **Propriety** of notes is reflected by their being:
    (a) Legible – self-explanatory
    (b) Logical – the coherence between patients' complaints and findings; the logical deduction in assessment and plan; clear explanation of irregularities, etc
    (c) Legal – Notes have to be dated properly; both pre- and post-dating are unacceptable. Corrections are done by crossing out mistakes rather than erasing them. Wording shall be careful, avoiding incriminating overtures. Events with potential legal consequences should be carefully but fully documented eg verbal or written admission of fault, misreporting of lab and radiology results, patient accusations, iatrogenic injury, etc.

16. The importance of **accuracy** is obvious, for medical and legal reasons. The reviewer pays particular attention to the accuracy of recorded complaints, therapeutic regimen, the charted lab results, discrepancy between nursing and medical notes, etc.

17. Proper medical management has to be both appropriate and timely. Standards of **appropriateness** are available for referencing for most clinical problems, ie the SPP protocol series. A *living* document, the series is updated continually in accordance with evidence-based medicine. All medical practice that deviates from the protocols or international standard of care has to be explained in the chart.

18. **Timeliness** is equally important. Management is measured by both its compliance with evidence-based medicine and its timeliness. For instance, a high amylase that is not worked up until 3 months later is untimely; delayed admission in the face of septicemia is also untimely, if not legally indefensible.

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[1] Ferri F. Approach to the medical patient. Practical Guide to the Care of the Medical Patient. 4th edition. Mosby 1998

The reporting conference

19. All notes written in a chart will be examined if it is reviewed for the first time. Thereafter, review will focus on notes written after the previous one.

20. The reviewer will in his judgement select and present significant findings in a special bimonthly reporting conference. This conference shall therefore allow not only feedback to all medical staff, but clarify the points made by the reviewer.

21. The reviewer analyzes the charts and makes recommendations on improvement. He also makes specific evaluations pertaining to documentation and specific quality indicators (Appendix). The latter will allow continued monitoring progress in certain predefined parameters, at least on an annual basis.

22. All presentations and recommendations are filed. As patients' information may be involved, the file is kept with the secretary of the clinical audit committee. Access to the presentations, which may contain patient's information, is limited to a need-to-know basis. Reviewers' recommendations, however, will be accessible to all medical staff. These are also submitted to the clinical audit committee for reference.

23. To encourage voluntary submission for review, the reviewer has to provide feedback to those who submit. At the minimum, the reviewer will note his comments in the chart, regardless of findings.

Caution

24. The reviewer is reminded of the educational design of the reporting conference and the goal of quality improvement and training. Discussions and presentations are therefore handled to this effect. For the same reason, anonymous submission for review is not allowed.

25. Despite the non-disciplinary nature of PCR, the Chief of Service reserves the right of such in exceptional circumstances:
    (a) criminal activities
    (b) malicious activities, including malicious reporting
    (c) acts of gross misconduct, and
    (d) repeated errors or violations.

Evaluation

26. The quality indicators appended for use represents the minimum number of review criteria. It serves no more than a reminder of the basics in the initial few rounds of PCR. Never is it intended to replace the intelligent evaluation of medical charts.

27. The checklist also provides a quantitative aspect to the process of evaluation. Comparison is therefore made possible at least annually.

28. The operation and goal of PCR is subject to continual review in the Clinical Audit Committee. It is expected that an annual evaluation of the PCR will be included in the audit report.

Appendix II

Documentation and Quality indicators for Periodic Chart Review

KB_____

1-year covering period: From _____ To _____

	Compliance		
	Yes	**No**	**Not applicable**
Documentation			
1. ***SOAP*** logic followed			
2. Documentation complete (including signature) and logical			
3. Issues of legal interest fully addressed, if there is any			
4. Information accurate			
Specific quality indicators			
5. Regular and timely CD4/viral load monitoring, and appropriate response measures			
6. Inappropriate antiretroviral therapy (eg, monotherapy)			
7. Contraindicated drug combination (eg AZT+d4T, SQV+Rifampin)			
8. PCP prophylaxis when indicated (eg CD4<200, thrush, prior PCP)			
9. MAI prophylaxis when indicated (eg CD4<50 + 6 months after ART)			
10. Oversight of non-adherence to ART			
11. Up-to-date Gynecologic exam for pap smear			
12. Ophthalmological exam (by indirect ophthalmoscopy) according to protocol			
13. Undue delay in follow up of abnormal result			
14. Failure to follow consensus of clinical case round			
15. Appropriate PPD testing and therapy			

*shaded means good

Remarks, if any

No.	Remarks

Reviewer:_____(_____)

Review Date:_____

Appendix III

Reference notes for Periodic chart review

Documentation

SOAP - Review is on the presence, rather than sequence, of SOAP logic. SOAP is an abbreviation of subjective ("presenting complaint"), objective ("our observation and on examination"), assessment ("our impression or differential diagnoses"), and plan ("prescribed treatment and follow-up action"). It is a logic thinking that most clinicians follow throughout their clinical assessment. Subjective: patient's comments, requests, or complaints, e.g. "It hurts when I take a leak". Objective: description of physical findings and recording of laboratory, x ray, or ECG data. Assessment: analysis of data and tentative diagnosis; identification of problems that have to be addressed; checklist of health maintenance, etc. Plan: diagnostic studies and therapeutic regimen; liaison with social workers, hospice or NGOs; admission to hospital.

Logical and complete documentation - Review should include the coherence between patients' complaints and findings; the logical deduction in assessment and plan; clear explanation of irregularities and so on. Examples include date of note-entry, all relevant clinical data, legible writing, appropriate use of ink colour and types of writing instrument, clearly seen and identifiable signature, or use of uncommon abbreviation without elaboration.

Moral and legal issues - This is not an objective indicator for monitoring the compliance of legal matter but a growing list of possible issues that may have caused inconvenience or unnecessary dilemma in management both medically or administratively. Examples include proper dating of notes, crossing out rather than erasing mistakes, careful wording, laboratory results or correspondences being filed wrongly, loose (or potential) progress notes, worn out or "dirty – such as blood- or ink stained" progress notes, missing KB number at the top right hand corner in every valid progress sheet, referring letters or information sent to unintended recipients, prescribed medications being collected by others without stating a valid reason, or too many (redundant) laboratory result print-outs causing possible confusion. Events with potential legal consequences should be carefully but fully documented, eg verbal or written admission of fault, misreporting of lab and radiology results, patient accusations, iatrogenic injury.

Accurate information - Examples are the accuracy of recorded complaints, names and dosages of therapeutic regimen, the charted laboratory results, documentation of discrepancy between nursing and medical notes, and the accurate interpretations of test result.

Specific quality indicators

These indicators shall be judged, in decreasing order of priority, according to:

- written protocol of SPP, if there if any, prevailing at the time
- accepted medical practice prevailing at the time, and
- explanations in the chart

Appendix IV

QUARTERLY & ANNUAL AUDITING OF CLINICAL GOVERNANCE MARKERS

Clinical effectiveness indicators, risk management indices and clinical caseload statistics – Definitions and Enumeration

A. Clinical effectiveness indicators

Index	Category	Description	Parameter and its derivation	Target	Remarks
1. Newly initiated ART for disease treatment being HAART	ART & its effectiveness	Proportion (%) being HAART (no. of ART ≥ 3) for patients newly started on ART for treating their HIV disease (prophylaxis for prevention of MTCT is excluded)	• Denominator = No. of patients newly started on ART for disease treatment in a specified time period • Numerator = No. of patients newly started on HAART (>=3 antiretrovirals) for disease treatment in the same specified time period	100%	-
2. Undetectable viral load at 6 months post-ART initiation for disease treatment	ART & its effectiveness	Proportion (%) of newly treated patients (exclude MTCT prevention cases) whose viral load fall below 500 copies/ml after 6 months of ART	• Denominator = No. of patients newly initiated on ART in the a specified time period • Numerator = No. of newly treated patients in the same specified time period whose viral load was undetectable (<500 copies/ml) at 4-8 months after ART	70%	• By patient, not by regimen • Patients will be counted even if they are off ART, defaulted or missing at 4-8 months after treatment initiation, i.e. intention to treat analysis • Forward data collection - the numerator data refers to 4-8 months later and thus there is a time lag; cannot be backward data collection • Turn around time for viral load testing needs be taken into consideration; in effect, data for a specified time period may only be available 9 months or more later
3. Virological failure in	ART & its effectiveness	Proportion (%) of active patients whose viral load	• Denominator = No. of active patients as at the end of a specified time period who	<20%	• By patient and not HAART regimen • Patients without viral load in the specified

* Data is taken from the CIS Discoverer Report Information Set, which is compiled from the ITC Clinical Information System in the third month following the end of a quarter (i.e. Mar, Jun, Sep, Dec), on 10-15th of the respective month.

	patients who ever responded to HAART for disease treatment		was <500 copies/ml with HAART for disease treatment and now rebounded to >1000 copies/ml	were ever treated and responded to HAART for disease treatment with viral load <500 copies/ml • Numerator = No. of patients ever treated and responded (VL <500 copies/ml) to HAART with viral load >1000 copies/ml in a specified time period		time period will not be counted in numerator but may be so in the denominator • Patient will be counted in the numerator if there is one VL reading >1000 copies/ml in the specified time period, even if the VL later dropped to <500 copies/ml in that time period • A same patient will be counted again if he/she again has viral load >1000 copies/ml in two survey time periods
4.	Patients on ART have good drug adherence	ART adherence	Proportion of patients whose self-reported ART adherence was grade A (100%) or B (95-99%)	• Denominator = No. of patients on ART with assessment of self-reported drug adherence in a specified time period • Numerator = No. of patients who were assessed to have grade A or grade B ART adherence (via self-report) at his/her last but one visit within the same specified time period	80% for grade A, 95% for grade B or A	• By patient, not by patient-attendance • The grade refers to adherence in the period between the previous and the present clinic visit • Data of the last attendance with drug adherence assessed is taken, if a patient has multiple adherence results within the time period
5.	Patients with new AIDS-defining illnesses after on track of follow-up	ADI profiling	Occurrence of new AIDS-defining illnesses (ADI) in patients who have been followed up for more than 6 months	• Denominator= No. of active patients who have been followed up for more than six months as at the end of a specified time period (exclude those patients who were followed up for less than six months even if they were active patients as at end of the specified time period, viz. have attended for at least once in the last one year) • Numerator = amongst the denominator, the no. of active patients who had ADI after six months of follow up within a specified time period (patients who had ADI only within the first six months of his/her follow-up were excluded)	< 5%	• Active patients who had been followed up for more than six months and then defaulted were also included in the denominator
6.	Patients with new	ADI profiling	Occurrence of new PCP in patients who have	• Denominator = No. of active patients who have been followed up for more	? <5%	• Active patients who had been followed up for more than six months and then defaulted

	Pneumocystis carinii pneumonia after on track of follow-up		been followed up for more than 6 months	than six months as at the end of a specified time period (exclude those patients who were followed up for less than six months even if they were active patients as at end of the specified time period, viz. have attended for at least once in the last one year) • Numerator = amongst the denominator, the no. of active patients who had PCP after six months of follow up within a specified time period (patients who had PCP only within the first six months of his/her follow-up were excluded)		were also included in the denominator
7.	New clients were explained on Partner Counselling and Referral Service (PCRS)	PCRS & HIV prevention	Proportion of new clients who are counseled under the Partner Counselling and Referral Service (PCRS) within six months of first ITC attendance	• Denominator = No. of new clients within a specified period of time • Numerator = No. of new clients within the same specified period of time who were counselled under the PCRS within six months of first attendance	80%	• Time lag of six months or more for data availability • A lower than 100% target is set as counselling on PCRS may not be desirable in the first attendance and some of these patients might have defaulted after first visit
8.	Client-referral partners of new clients had HIV status clarified	PCRS & HIV prevention	Proportion of traceable client-referral partners of new clients who have their HIV status clarified under the PCRS within one year of first ITC attendance of the new clients	• Denominator = No. of traceable client-referral partners of new clients in a specified period of time • Numerator = No. of traceable client-referral partners of new clients who have their HIV status clarified under the PCRS within one year of first ITC attendance of their partner new clients in the same specified period of time	XX%	• The number (and who are they) of traceable partners were self-reported by each new client, by one year of first PCRS date • Reference date is the first ITC date
9.	New sexually transmitted diseases (STD) in clients	PCRS & HIV prevention	Occurrence of new specified STDs with documented microbiological proof in active clients as gauged by incidence density	• Denominator = follow-up person-months of clients within a specified time period • Numerator = No. of new episodes of the specified STDs in clients within the same specified time period	XX/person-months	• The specified STDs are: primary syphilis, secondary syphilis, gonorrhoea, genital Chylamydia and trichomoniasis (diagnosis can be made by public or private services), the occurrence of new episodes implies recent unsafe (or failed protection) sex

					• Clients with only one consultation are excluded • STD episode prior to first consultation is excluded • Both denominator and numerator include happenings till the end of the specified time period, if the last visit of a client is beyond the period end
10. Default rate	HIV care	A point prevalence of yearly default rate of clients, with exclusion of non-attendance due to death or permanent departure from the clinic	• Denominator = No. of active clients as at one year before a specified time point • Numerator = those active clients from the denominator who defaulted: (a) did not attend at least once in the one-year period till the specified time point, AND (b) the non-attendance is not due to death, permanent departure or transfer during this one year	<5%	-
11. Patients remain under care	HIV care	Proportion of patient who ever attended and remains active patient	• Denominator = No. of cumulative caseload as a specified time point • Numerator = No. of active patients at the same specified time point	50%	• Cumulative caseload refers to patients who ever attended medical/nursing consultation • Numerator depends on number who defaulted/died/left
12. Mortality ratio	Mortality	Proportion of deaths against active patients	• Denominator = No. of active patients at the end of the specified time period • Numerator = No. of ever patients who died in the same specified time period	<1%	-

B. Risk management indices

Index	Category	Description	Parameter and its derivation	Target	Remarks
1. Lack of regular monitor of CD4/CD8 T lymphocyte	Disease monitoring	Proportion of active patients who has monitoring of CD4/CD8 T lymphocyte subset at intervals of < 6 months	• Denominator = No. of active patients at a specified time point • Numerator = No. of active patients who did not have CD4/CD8 result available within the past 6 months of the same specified time point, i.e.	<10%	• Refer to active patients only; defaulters by definition were excluded • Numerator depends on (a) the turn around time of the test, (b) timing of result entry into CIS and (c) timing of data retrieval for analysis

			whose date of last CD4/CD8 result was beyond 6 months before the time point		
2. Lack of regular monitor of plasma viral load	Disease monitoring	Proportion of active patients who has monitoring of plasma viral load at intervals of < 6 months	• Denominator = No. of active patients at a specified time point • Numerator = No. of active patients who did not have viral load result available within the past 6 months of the same specified time point, i.e. whose date of last viral load result was beyond 6 months before the time point	<10%	• Refer to active patients only; defaulters by definition were excluded • Numerator depends on (a) the turn around time of the test, (b) timing of result entry into CIS and (c) timing of data retrieval for analysis

C. Clinical caseload statistics

New patients

Total no., sex, ethnicity (Chinese, non-Chinese), HIV risk (heterosexual, MSM, injecting drug use, others)

New AIDS patients

Total no., sex

Deaths

Total deaths in ever patients, deaths in AIDS patients, deaths in non-AIDS patients

Active HIV/AIDS caseload

Total no. sex, disease status (HIV, AIDS)

Cumulative, active and reported cases

No. of cumulative caseload, no. of total reported HIV/AIDS, % total reported cases ever attended ITC, % total reported cases being active patients

Antiretroviral therapy

No. of patients newly started on ART for disease treatment, no. of patients newly started on ART for MTCT prophylaxis, no. of active patients, no. of patients on ART, % of active patients on ART, % regimen (monotherapy, dual therapy, HAART (>=3 antiretrovirals)).

This Report is available at Hong Kong Virtual AIDS Office (VAO) – www.aids.gov.hk.

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