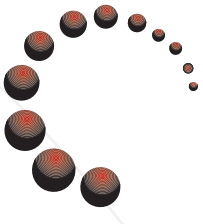


forging Synergy

Health Sciences Authority Annual Report 2007-08

contents

02 Vision • Mission • Values
04 Accolades
06 Chairman's Foreword
10 CEO's Preface
14 HSA Board
18 HSA Leadership
20 Organisation Chart
22 Principal Officers

innovating strategy

28 Corporate Headquarters

building strength

44 Health Products Regulation Group

upholding standards

60 Health Services Group

defining solutions

70 Applied Sciences Group
80 International Visitors
84 Research Papers and Projects
92 Financial Statements

forging Synergy

At HSA, we embrace the notion of Forging Synergy. Beneath this lies the power to create unlimited possibilities when unleashed.

We must continue to sharpen the synergies across all our professional groups and corporate headquarters as we move forward together as an organisation. Many of our key tasks and targets are inter-connected, and these all contribute towards the same core mission objectives.

We also extend this collaborative mindset beyond HSA by widening and deepening our local and overseas networks of services and industry partners, and aim to enhance our appreciation of their needs and concerns.

We strive for Innovative Strategies at our Corporate Headquarters, focus on Building Strengths in our Health Products Regulation Group, continue to Uphold Standards in our Health Services Group, and consolidate expertise to Define Solutions in our Applied Sciences Group.

As one organisation, we will always seek to scale new heights as we advance in our vision to be the leading innovative authority protecting and advancing national health and safety.

our Vision

To be the leading innovative authority protecting and advancing national health and safety

our Mission

- To wisely regulate health products
- To serve the administration of justice
- To secure the nation's blood supply
- To safeguard public health

our Core Values

- **Service to the Nation**
  We are part of the Singapore Public Service, committed to integrity, excellence and efficiency.
- **Passion for Excellence**
  We aim to be the best in all that we do.
- **Develop Our Community**
  We value our people and build trusted teams.
- **Inspire Trust**
  We act with credibility, professionalism and integrity, to instill public trust and confidence.
- **Live Innovation**
  We seek constantly to improve and transform.

our Accolades

ORGANISATIONAL EXCELLENCE

People Developer Standard Certification
since December 2002

Singapore Innovation Class
first public healthcare agency to be endorsed - July 2003

Singapore H.E.A.L.T.H. Gold Award
since 2005

Public Service Award for Organisational Excellence
2006

Meritorious Defence Partner Award
since 2005

Community Chest Awards
since 2003

Singapore Family Friendly Employer Award 2004

ISO 9001:2000
Information Management Department, Corporate HQ
November 2007

PROFESSIONAL EXCELLENCE

HEALTH PRODUCTS REGULATION GROUP

Centre for Drug Administration
ISO 9001:2000
Tobacco Regulation Unit
March 2008

HEALTH SERVICES GROUP

Centre for Transfusion Medicine
AABB Accreditation
first national blood service in Asia to be accredited - May 2006

Certified On-the-Job Training Centre
December 2005

Regional Quality Management Project Training Centre of the
Western Pacific for Transfusion Medicine
since 2002

World Health Organisation Collaborating Centre for Transfusion Medicine
since 1992

APPLIED SCIENCES GROUP

Centre for Forensic Medicine
National Association of Medical Examiners (NAME)
first agency outside North America to be accredited - September 2005

Centre for Forensic Science
American Society of Crime Laboratory Directors/
Laboratory Accreditation Board (ASCLD/LAB)
since July 1996

Excellence for Singapore Award
August 1999

Centre for Analytical Science
ASEAN Leading Country for Colorants and Tretinoin Analysis
in Cosmetic Products
since 2004

ASEAN Reference Laboratory for Mycotoxins Analysis
since June 2004

Public Service Award for Organisational Excellence
July 2003

Singapore Quality Class
since July 2002

ISO/IEC 17025 Accreditation under Singapore Accreditation Council
–Singapore Laboratory Accreditation Scheme (SAC-SINGLAS)
upgraded from ISO/IEC Guide 25 in July 2002

ISO/IEC Guide 25 Accreditation under SAC-SINGLAS
1997 to 2002

World Health Organisation Collaborating Centre
for Drug Quality Assurance
since 1994

World Health Organisation Collaborating Centre
for Food Contamination Monitoring
since 1993

Chairman's foreword

The Health Sciences Authority (HSA) of Singapore is a unique organisation responsible for protecting and advancing national health and safety in the Republic through regulating health products and our blood supply. I am pleased that in the year under review, the HSA team has sought to achieve clarity of strategy, transparency of regulations, and efficiency of operations. We are working harder and smarter to meet various challenges and opportunities as the nation advances in biomedical sciences and in medical sophistication.

Forging synergy, the theme of this report, aptly describes the innovative strides that HSA has undertaken in the past year. HSA has strategically leveraged on its unique strengths to deepen integration and foster positive regulatory and scientific outcomes, both within the organisation and also on the local and international fronts. This has advanced public health and safety for Singapore's population, as well as beyond our borders.

Collaboration releases powerful synergies of collective resources to yield innovative solutions. Despite being small in size compared to its various overseas counterparts, HSA has great potential because of its unique expertise and talent mix. It is also strongly networked regionally and internationally across its health products regulation, applied scientific and transfusion medicine arms. Such alliances have multiplier effects in information exchange, sharing of technical expertise, and resources and manpower capability building. These lead to faster and better regulatory outcomes, improved standards of transfusion safety, and enhanced applications of science for the administration of justice.

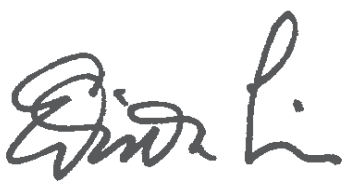
An indication of this synergy was HSA's rapid response and swift intervention in dealing with a cluster of illegal aphrodisiac products that appeared on the local front. A successful collaborative investigative and enforcement network tapped on the different specialties within HSA and also its strong alliances with local healthcare and enforcement agencies. Speed and comprehensiveness of response were crucial, and this strategy of seeking synergy allowed HSA to respond in this fashion. Findings were quickly shared with its international regulatory counterparts and the problem was readily contained.

In the face of growing complexity and challenges in pharmaceutical crime, HSA is thus succeeding in drawing together the distinct strengths across its professional groups - spanning adverse event detection, enforcement and specialised laboratory testing. This demonstrates growing organisational agility and the good use of HSA's diverse talent base to achieve effective collaboration.

Another key synergistic development is HSA's partnership with A*Star's National Metrology Centre to introduce a robust national chemical metrology infrastructure. Filling a needs gap, the development of chemical metrology - the science of achieving traceable analytical data in chemistry, will raise the standard of chemical measurements made in Singapore in terms of reproducibility, reliability and traceability to international system of units (SI) standards. This will raise laboratory testing standards, facilitate trade, market access and industry development, thus supporting HSA's commitment to serving the nation and its mission to safeguard public health.

The strong networks established within the bloodbanking and transfusion medicine community both locally and overseas have enabled HSA to become a significant player in the international transfusion medicine scene. Through its appointment as a World Health Organisation Collaborating Centre for Transfusion Medicine and as a founder member of the Asia Pacific Blood Network, it has been able to actively participate in influencing developments in blood safety and transfusion medicine at national, regional and global levels. This has provided strategic opportunities in communication, cooperation and information sharing. This adds significantly to ensuring a progressive and up-to-date blood service in support of HSA's mission to secure the nation's blood supply.

HSA is fast growing its capacities and forging strategic synergies to operate in a more complex, interconnected, but uncertain world. As the agency confronts the challenges of the dynamic environment in which it operates, across the fast changing landscapes of regulation, transfusion medicine and the biomedical, forensic and analytical sciences, HSA will press on with innovative strategies, building strengths, upholding standards and defining solutions.



Professor Edison Liu
Chairman

CEO's preface

As HSA gears up for growth, we are gathering momentum and speed. A key driver is synergy, as we deepen integration within and across our professional and corporate groups. In the process, we are clarifying and defining our strategies, strengths, standards and solutions.

At the corporate level, the four fundamental reviews of human resource, pricing and costing, pro-enterprise orientation and business processes moved on apace in the year under review. The most fundamental has been the HR review - we are undertaking a major overhaul and updating of our HR system to ensure that HSA is better positioned to attract, retain and develop our staff in today's challenging scientific environment. Overall, the reviews support HSA's strategic positioning for the future. They have identified key initiatives for implementation at the corporate level and within each professional group. This is already translating into organisational restructuring to support integration and innovation in our core functions, as well as greater agility in systems and mindsets to take us further as a responsive scientific and public health agency.

In our regulatory mission, we have been focusing on building strength. The rapidly evolving biomedical and life sciences landscape requires HSA to have the capacity to anticipate and advance. Various workgroups are diligently working to develop and enhance our regulatory frameworks to address key developments in new areas such as genomics, as well as 'new old' areas such as traditional medicines, where products are being innovatively updated and combined, and where efficacy is being increasingly studied. We therefore continue to use the ongoing roll out of the Health Products Act to revisit, update and consolidate our regulatory frameworks. We are also exploring new approaches and tools at different points of the regulatory continuum, such as pharmacogenomic data in early detection of individualised adverse events. This requires ongoing upgrading of the range and quality of professional expertise within our regulatory arm. In order to be successful in all these challenges, in the face of a rapidly globalising world, we continue to actively engage and collaborate with key international partner agencies.

In our bloodbanking and transfusion medicine mission, we have continued to advance the high standards of blood supply safety and quality, for which we have achieved international reputation. Through our many accreditation and affiliation efforts, we have successfully benchmarked ourselves against international best practices. In addition to continual reviews and enhancements of processes, we have also explored innovative strategies to ensure an adequate and safe blood supply for the nation. We have contributed to international efforts to strengthen global blood supply safety and availability, through our participation in capability building programmes and collaborative strategic initiatives both in and beyond our region.

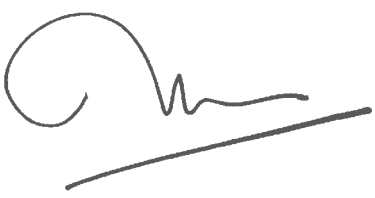
In our forensic and analytical sciences mission, we have focused on defining solutions - from crime scenes to the courtroom, and across the range of health products, food and water testing that our laboratories deal with. The field of chemical metrology that we are developing will open up a field of endeavour in which our applied sciences capabilities can further contribute to supporting national development. New capabilities, new testing methods, new processes and new services will further add value and inspire trust amongst the various stakeholders and the public at large whom we serve.

HSA is only as good as the collective strength of our people. Individual commitment and competencies are already a key and vital resource. But it is as we function increasingly as an integrated and synergised team that our capabilities can be significantly transformed to effectively fulfill our wide-ranging mission. This will inspire trust that HSA is indeed established and equipped to deal with the complexities and challenges of our operating environment.

In the coming year, we will continue to place our priority on sharpening our operating efficiencies and synergies, translating our strategic vision into tangible and practical outcomes for our stakeholders, and strengthening public trust.

We are grateful for the continuing strong support from our parent Ministry, our Board and our partners in Government, industry and global counterpart agencies.

I am confident that the HSA Team will always give of their best in extending our regulatory and scientific capabilities, and that we will not only synergise but we will soar.



Dr John Lim
Chief Executive Officer

HSA board

as at July 2008

Chairman
Professor Edison Liu
Executive Director
Genome Institute of Singapore

Member
Professor Alastair Campbell
Director, Centre for Biomedical Ethics
Yong Loo Lin School of Medicine
National University of Singapore

Member
Dr Chong Yoke Sin
Group Chief Information Officer
Singapore Health Services Pte Ltd

Member
Dr Lee Chien Earn
Senior Director
Healthcare Performance Group
Ministry of Heath

Member
Dr Jennifer Lee
Senior Consultant
Primary & Community Care Division
Ministry of Health

Member
Mdm Liew Wei Li
Principal
Xinmin Secondary School

Member
Dr John Lim
Chief Executive Officer
Health Sciences Authority

Member
Professor Low Teck Seng
Chief Executive Officer
Parkway Education Pte Ltd

Member
Professor Walter Tan
Medical Director
Raffles Hospital

Member
Ms Serene Wee
Chief Executive
Singapore Academy of Law

HSA board committees

with effect from August 2008

Audit Committee

Professor Low Teck Seng	Chairman
Professor Walter Tan	Member
Ms Serene Wee	Member

Staff Establishment Committee

Dr Jennifer Lee	Chairman
Professor Low Teck Seng	Member
Professor Alastair Campbell	Member
Mdm Liew Wei Li	Member

Finance Committee

Dr Chong Yoke Sin	Chairman
Dr Jennifer Lee	Member
Dr Lee Chien Earn	Member

Board changes

We would like to express our deepest appreciation to Mr Khoo Chow Huat who stepped down from the HSA Board on 1 February 2008.

We warmly welcome our new Board Members: Ms Serene Wee, Chief Executive of the Singapore Academy of Law, and Mdm Liew Wei Li, Principal of Xinmin Secondary School, who joined the HSA Board on 1 February and 1 June 2008 respectively. Dr John Lim, Chief Executive Officer, HSA was also appointed Board Member on 1 February 2008.

HSA leadership

as at July 2008

L to R:

Dr Christina Lim
- Administrator, Health Products Regulation Group
- Senior Advisor, International Collaboration

Dr Paul Chui
- Senior Director, Applied Sciences Group
- Director, Centre for Forensic Medicine

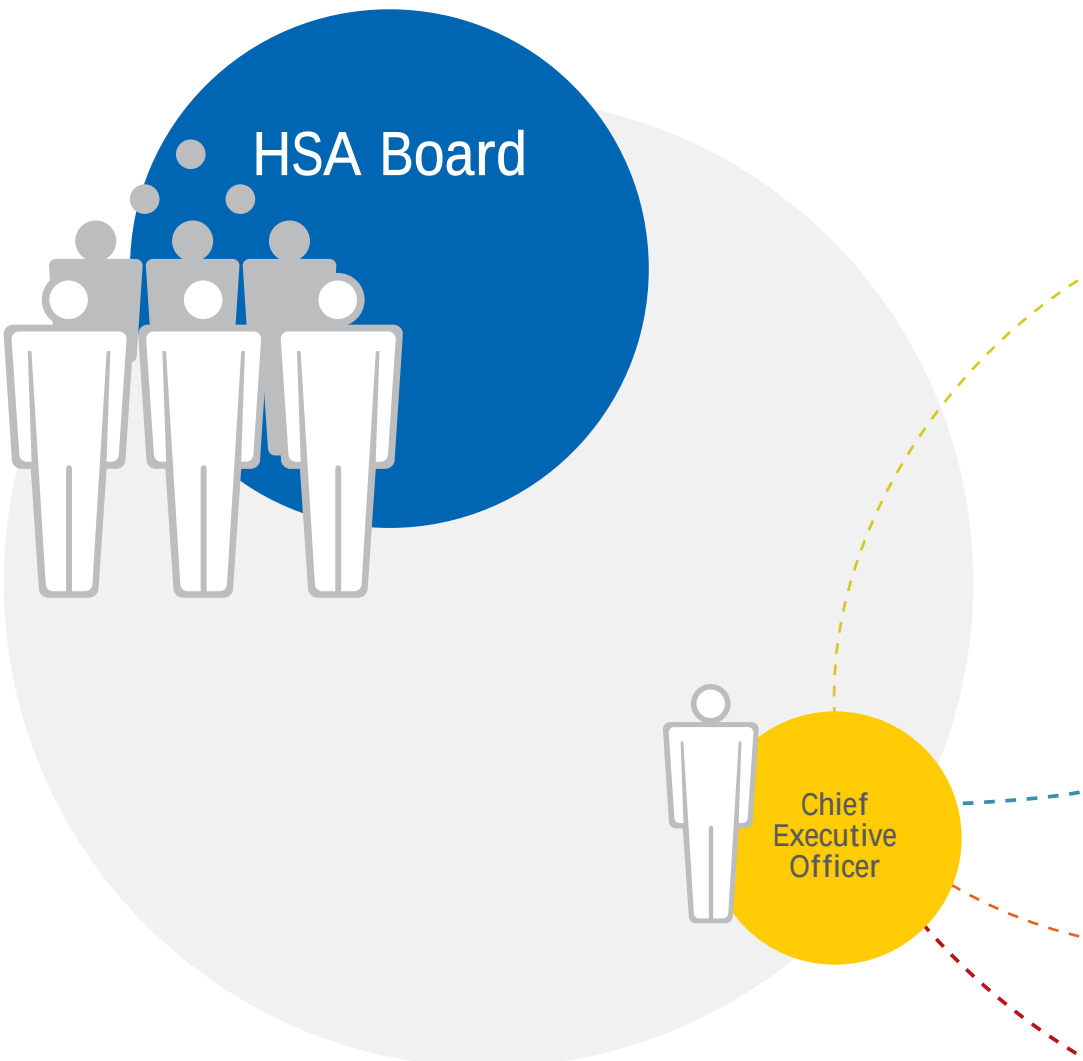
Dr John Lim
- Chief Executive Officer
- Senior Director, Health Products Regulation Group

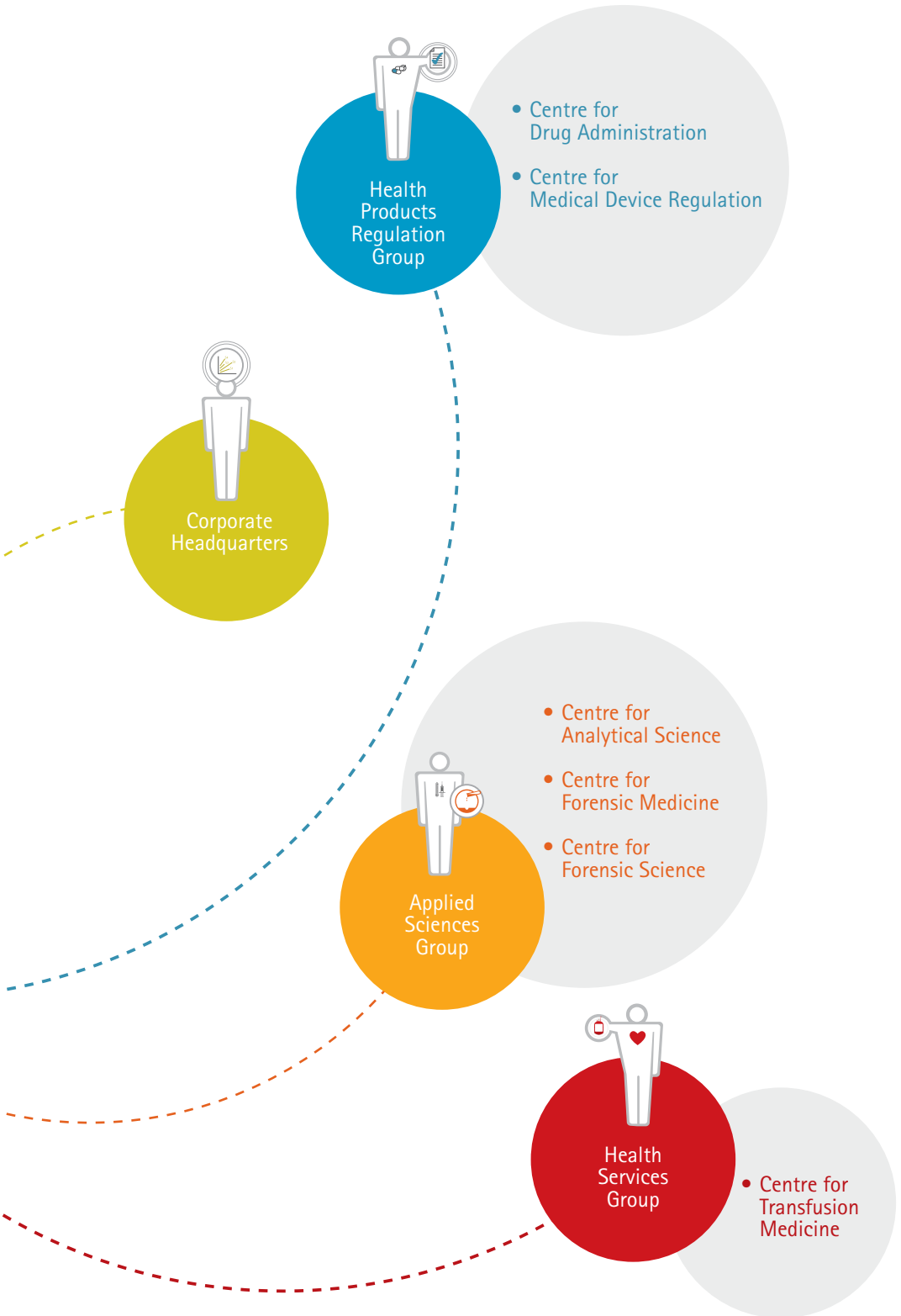
Dr Diana Teo
- Senior Director, Health Services Group
- Director, Centre for Transfusion Medicine

Professor Bosco Chen Bloodworth
- Director, Quality/Quality Service Manager
- Director, Centre for Analytical Science

Organisation chart

as at July 2008





With effect from 1 August 2008, the Centres will be removed and restructured as functional Divisions under three consolidated professional groups: Health Products Regulation, Blood Services and Applied Sciences. These three groups define HSA's key professional areas across which we will develop greater synergies moving forward.

Principal Officers

as at July 2008

CORPORATE HEADQUARTERS

CEO'S OFFICE
- OPERATIONS & STRATEGY
  Deputy Director
  Dr Lam Kian Ming

- PLANNING & DEVELOPMENT
  Deputy Director
  Ms Maureen Goh

- INTERNATIONAL COLLABORATION
  Senior Advisor
  Dr Christina Lim

QUALITY
Director
Professor Bosco Chen Bloodworth

LEGAL
Legal Counsel
Ho Meng Hee

CORPORATE COMMUNICATIONS
Deputy Director
Ms Jeannie Thng

CORPORATE SERVICES
Deputy Director
Chua Hong Tong

FINANCE
Deputy Director
Ms Grace Chan

HUMAN RESOURCE
Deputy Director
Mrs Sarojini Padmanathan

INFORMATION MANAGEMENT
Deputy Director
Chan Chin Wai

L to R:
• Chan Chin Wai • Ms Jeannie Thng • Ho Meng Hee • Chua Hong Tong
• Ms Grace Chan • Ms Maureen Goh • Dr Lam Kian Ming • Mrs Sarojini Padmanathan

HEALTH PRODUCTS REGULATION GROUP CDA | CMDR

Senior Director
Dr John Lim

Administrator
Dr Christina Lim

Strategic Planning Office
Deputy Director
Mdm Suwarin Chaturapit

Head, Policy & Planning
Ms Lee Hui Keng

Head, Legislative Policy
Kelvin Tan

Head, Regulatory Support Unit
Ho Yu Nam

CENTRE FOR DRUG ADMINISTRATION
Senior Deputy Director
Yee Shen Kuan

Product Evaluation & Registration Division
Head, Drug Registration
Dr Lu Set

Head, Drug Registration
Dr Thomas Soo

Head, Clinical Trials Branch
Foo Yang Tong

Head, Regulatory and Project Management
Tan Tek Seng

Compliance & Complementary Medicines Division
Complementary Medicines Branch
Deputy Director &
Head, Cosmetics Control Unit
Mrs Marie Tham

Head, Chinese Proprietary Medicines Unit
Ms Chu Swee Seng

Head, Health Supplements Unit
(vacant)

Compliance Branch
Head, Prosecution Unit
Kelvin Tan

Head, Investigation & Surveillance Unit
R. Sivalingam

Head, Tobacco Regulation Unit
(vacant)

L to R:
• Boon Meow Ho • Kelvin Tan • Ms Hui Foong Mei • Yee Shen Kuan
• Ms Chu Swee Seng • Foo Yang Tong

Manufacturing &
Quality Audit Division
Deputy Director &
Head, Good Manufacturing
Practice Unit
Sia Chong Hock

Head, Good Distribution Practice Unit
Ms Hui Foong Mei

Head, Certification Unit
Dr Lai Weng Fai

Head, International Operations Unit
Boon Meow Hoe

Pharmacovigilance, Communications
& Research Division
Deputy Director
Mdm Suwarin Chaturapit

Assistant Director
Head, Pharmacovigilance Unit &
Head, Information & Research Unit
Ms Chan Cheng Leng

CENTRE FOR MEDICAL DEVICE
REGULATION
Manager
Alfred Kwek

Manager
Seet Wing Gang

L to R:
• Alfred Kwek • Mdm Suwarin Chaturapit • Seet Wing Gang • Dr Thomas Soo
• Ms Lee Hui Keng • Ho Yu Nam • Ms Chan Cheng Leng
Absent:
• Dr Lai Weng Fai • Dr Lu Set • Sia Chong Hock • R. Sivalingam • Tan Tek Seng
• Mrs Marie Tham

HEALTH SERVICES GROUP CTM

Senior Director
Dr Diana Teo

CENTRE FOR TRANSFUSION MEDICINE

Director
Dr Diana Teo

Deputy Director, Clinical Service & Laboratories
Dr Mickey Koh

Deputy Director, Blood Resources
Dr Tan Hwee Huang

Scientific Head, Blood Processing, Testing & Inventory
Ms Sally Lam

Scientific Head, Hospital Services
Dr Marieta Chan

Head, Blood Programme Support
Ms Koh Geok Tin

Quality Manager
Ms J Thilakavathi

Head, Blood Collection
Ms Toh Ching Lian

Laboratory Manager, Blood Processing, Testing & Inventory
Ng Kok Quan

Laboratory Manager, Hospital Services
Ms Leou Kwee Kim

L to R:
• Ms Toh Ching Lian • Ms J Thilakavathi • Dr Marieta Chan • Ms Sally Lam
• Ms Leou Kwee Kim • Ng Kok Quan • Dr Mickey Koh • Ms Koh Geok Tin
• Dr Tan Hwee Huang

APPLIED SCIENCES GROUP
CAS | CFM | CFS

Senior Director
Dr Paul Chui

CENTRE FOR ANALYTICAL SCIENCE
Director
Professor Bosco Chen Bloodworth

Head, Planning, Research & Development Unit & Quality Manager
Ms Cheah Nuan Ping

Head, Quality and Infrastructure Support Unit & Deputy Quality Manager
Ng Soon

Food Division
Deputy Director & Head, Food Safety Laboratory
Ms Joanne Chan

Head, Water Laboratory
(vacant)

Pharmaceutical Division
Deputy Director & Head, Pharmaceutical Laboratory
Ms Low Min Yong

Head, Cosmetics Laboratory & Head, Cigarette Testing Laboratory
Ms Cheah Nuan Ping

CENTRE FOR FORENSIC MEDICINE
Director
Dr Paul Chui

Deputy Director & Head, Professional Standards
A/Prof Gilbert Lau

CENTRE FOR FORENSIC SCIENCE
Physical Evidence Division
Deputy Director & Head, Criminalistics Laboratory
Dr Michael Tay Ming Kiong

Head, DNA Profiling Laboratory & Head, DNA Database Laboratory
Mrs Tan Wai Fun

Drugs & Toxicology Division
Deputy Director
Dr Lee Tong Kooi

Head, Narcotics I Laboratory
Dr Angeline Yap

Head, Narcotics II Laboratory
Dr Lui Chi Pang

Head, Toxicology Laboratory
Dr Yao Yi Ju

L to R
Front:
• Dr Lee Tong Kooi • Dr Michael Tay
Centre:
• Ms Joanne Chan • Ms Low Min Yong
• Ms Cheah Nuan Ping
Back:
• Dr Lui Chi Pang • Ng Soon • Mrs Tan Wai Fun
• Dr Angeline Yap • Dr Yao Yi Ju
Absent:
• A/Prof Gilbert Lau

innovation

Strategy

We face an operating environment that is increasingly sophisticated and dynamic. A key success factor is to innovate - in defining new strategies and reinventing ourselves. Through continuous transformation, we will be better placed to forge synergies across our organisation to progress boldly forward.

We define strategic direction and provide corporate support for the Authority and its three professional groups to achieve our vision and mission through effective policies and guidelines, efficient processes and strategic co-ordination.

Setting The Pace

Four taskforces were set up and made good progress in the review and reformulation of our strategies in the following key areas:

HR Planning and Strategies Review

In our specialised scientific setup, encompassing regulatory, medical and forensic expertise, the issue of attracting and retaining talent is a key challenge.

During the year, we engaged a HR Consultant, the Hay Group, to conduct a review of our compensation and benefits structure and performance management system. The recommendation for an enhanced HR system that is more performance-based and takes account of the wider market environment is in the final stages of clearance and targeted for implementation from FY2008.

Related to this review, the Hay Group has helped to reconfigure the organisational structures across HSA to enhance greater synergies and collaboration across the professional groups, corporate headquarters and HSA as a whole. These are a necessary prelude to implementing the overall HR review because the revised schemes will be mapped on to the updated organisational structures, which will take effect in FY2008.

Pricing and Costing Review

In an increasingly competitive business environment, a major part of our strategic review focused on the pricing strategy and promotion of a more cost efficient and effective organisation.

The review provided market intelligence on the competitiveness of current charges, as well as benchmark prices imposed by reference agencies both locally and overseas. The detailed costing models for two groups – the Applied Sciences and Health Services Groups – were completed during the year.

Pro-Enterprise Review

The objective of the pro-enterprise efforts was to enhance the pro-enterprise approach and ethos in the organisation, with the main focus on the regulatory activities carried out by our Health Products Regulation Group. One key initiative was an increased level of regular dialogue sessions with industry, particularly with the senior management of companies, to establish and strengthen channels of communication and feedback.

Other initiatives included a Progressive Payment Scheme for certain categories of drug registration, improvements made to Pharmaceutical Regulatory Information System (prism@hsa), our e-submission system for pharmaceutical regulatory activities, and the establishment of the Application Feedback System, which allows applicants to give feedback any time during the drug registration process.

While the feedback from the industry on our initiatives thus far has been generally positive, there is still much more to be achieved on the pro-enterprise front. Key areas that we continue to work on are customer responsiveness, review of the drug registration processes, and review of the types of licences that exist currently.

Business Processes Review

The Applied Sciences Group (ASG) was the first Group within our organisation to embark on a major business process review. We engaged KPMG Advisory to conduct a process review which included analysing the current state of ASG's operations, redesigning some of our core business processes and recommending improvement opportunities with the objective of delivering more holistic and value-added solutions to our clients.

During the review, ASG's internal and external clients and staff were fully engaged to identify improvement opportunities. At the end of the six-month consultancy, an implementation roadmap covering short to long term improvement opportunities in four key areas - Organisation and Structure, Operations and Processes, IT Systems and Laboratory Layout and Customer Touch-points – was defined.

Scaling New Heights

We embrace the building blocks of the Singapore Quality Award as our organisational excellence framework. The three building blocks we are focusing on are:

- People Excellence
- Innovation Excellence
- Quality and Service Excellence

Our Organisational Excellence Framework reinforces our goals - achieving greater synergies across the Authority as a whole, strengthening people integration, building appropriate structures and systems, and building competencies and capabilities which enable us to thrive in an increasing complex business environment.

Over the years, we have been awarded many organisational accolades. Notably, these included reaccreditation in the AABB (formerly known as the American Association of Blood Banks) Accreditation in Transfusion Medicine by our Health Services Group, and the attainment of ISO 9001 Certification by the Tobacco Regulation Unit of our Health Products Regulation Group.

People Excellence

Developing HSA Values & Culture

Core values establish the foundation of an organisation's culture. The core values reflect the basic principles that guide our interactions with every stakeholder. They establish the boundaries of behaviour and underpin goal setting, management decisions, priorities and strategies we employ to fulfill our mission. They also underlie the way we work and conduct ourselves, and determine organisational norms.

In 2007, we reviewed and redefined a new set of values which aligns with the Ministry's shared values for the Healthcare family and its strategic goals and vision. The five new HSA core values are:

- Service to the Nation
- Passion for Excellence
- Develop Our Community
- Inspire Trust
- Live Innovation

To encourage staff to demonstrate these values in their daily work, each value was shared and reinforced consistently through internal communications channels like the CEO's messages to staff and at organisational-wide events. The new values were officially launched to staff in May 2008. To enable the values to be ingrained in the HSA culture, the desired behaviours are being incorporated into HSA's new performance management system, as part of the overall HR Review.

Building Our People

We firmly believe that we are powered by our people. Continuous learning and development and skill upgrading of our staff remain our priority. In addition to the formal training and sponsorship for overseas courses, staff have opportunities to upgrade their academic qualifications through the Staff Development Fund and the Professional Development Programme. During the year, 19 staff benefitted directly from these schemes.

HSA was awarded the Singapore H.E.A.L.T.H* Gold Award in 2007 in recognition of our Workplace Health Promotion programmes that encourage healthy and vibrant lifestyle among our staff. We remain committed to developing and promoting programmes that encourage health awareness and adaption of healthy lifestyle.

Our organisational transformation journey saw active staff participation in the Staff Suggestion Scheme, which received more than 220 suggestions and ideas on how to improve service and work efficiency.

**Helping Employees Achieve Life-Time Health*

Innovation Excellence

Living Innovation

Research is vital in our work. We need to innovate in order to meet the challenges of a rapidly changing regulatory, technological, scientific and business environment, while meeting increasing customer expectations and stringent quality requirements for health products, forensic and scientific services plus our transfusion services. 18 projects are underway to build our capabilities and capacities.

Harnessing Information Technology (IT), a centrally managed Knowledge Enterprise Network (KEN) is being employed to encourage greater knowledge sharing and collaboration among our various Groups.

Corporate Resources System (CREST), an IT management system which we had developed with four other public agencies, was implemented in February 2008. The system aims to further enhance the agencies' corporate efficiency such as in human resource management and finance management.

In the year, enhancements were completed for prism@hsa, our e-submission system for regulatory activities so as to meet the increasing volume of submissions and further enhance the user's accessibility. Our System for Transfusion Medicine Analysis and Management (STREAM) was also upgraded to improve work efficiency for our bloodbanking mission. Work is still in progress for the DonorCare@HSA microsite to further enrich users' experience.

As a recognition of good governance in IT, our Information Management Department was awarded the ISO 9001: 2000 Certificate. The Data Centre (now hosted at MediNet@GDC) also attained ISO 27001 Certification for Security Management and ISO 20000 Certification in Service Management in 2007. In addition, an annual IT Security Audit is conducted to ensure continual compliance.

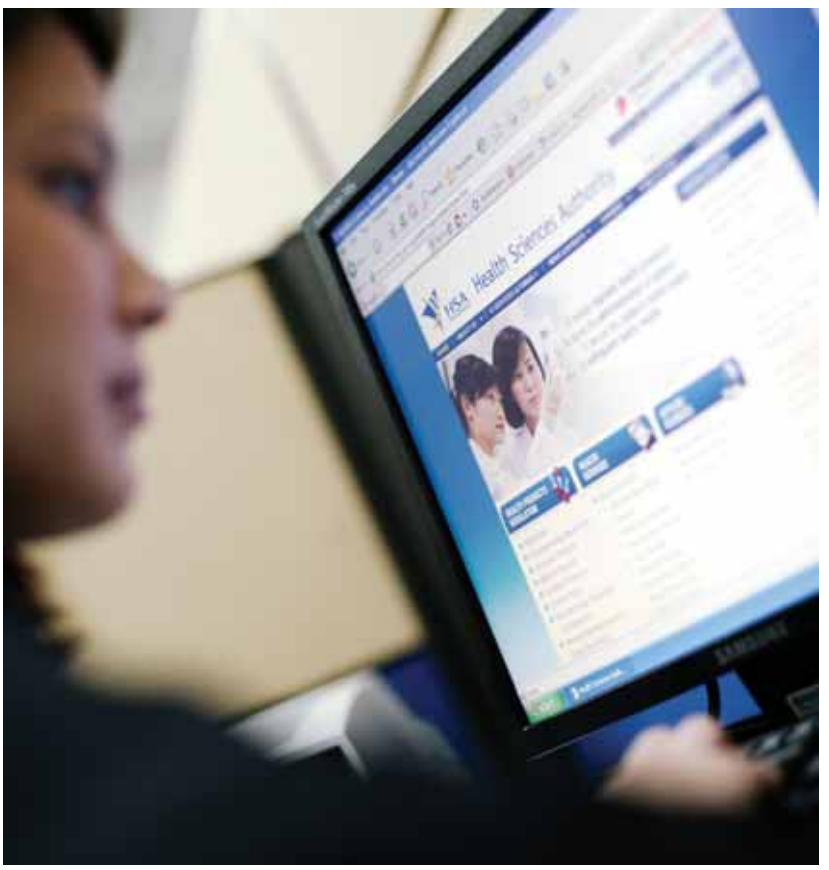
Quality and Service Excellence

Engaging the Public

We continue to actively inform and engage the public through many media activities, particularly in our risk communications through timely media releases and regular media briefings. We also keep up our efforts to help the public better understand our mission and our work through numerous themed-stories, features and profiles in both old and new media.

During the year, we conducted two major public consultations to seek all stakeholders' feedback on two regulatory policies. These led to the successful implementation of the Medical Device Regulation and ASEAN Cosmetic Directive.

To further extend our reach to the public, we stepped up our consumer education efforts, particularly in highlighting the danger of consuming illegal health products. Posters, which were widely distributed to target localities, consumer advisories and advertisements in the press and targeted publications were placed to spread and reinforce health messages to the targeted groups.



Going the Distance

Our desire to continually set higher standard saw the formation of the Quality Office (QO) during the year. The QO spearheads efforts to achieve total quality and service throughout the entire organisation. The implementation of the HSA E-Feedback Archive Recall (HEAR) in October 2007 has seen a much greater robustness in the management of public enquires and quicker response time.

Working with Singapore Customs, we rolled out the combined quarterly Minimum Service Standards and Mystery Customer Audit. This collaborative exercise has benchmarked our service standards with other public service bodies.

A Safety Committee was also set up to further enhance the safety standards and practices within the workplace and develop guidelines for staff. In August 2007, we were appointed as a working member of the National Workplace Safety and Health Council, and we have also been tasked with developing the guidelines for the Safety and Health of Healthcare Workers in Singapore.

Forging Ahead

We remain committed to continue to sharpen the synergies across all our professional groups and the corporate headquarters as we move forward together as an organisation. We recognise that many of our key tasks and targets as individual groups are inter-connected, and these all contribute towards the same core mission objectives. Our corporate strategies will continue to strengthen our understanding in health products regulation, bloodbanking services and the forensic and analytical sciences that can be integrated more cohesively into more joint programmes and interlinked initiatives.

Together, through streamlining our structures and systems, leveraging on IT with a defined four-year workplan, stronger public engagement and education through fresh outreach platforms, and deepening synergy into our work ethos and culture, we will work hard to augment our customer responsiveness, pro-enterprise orientation and standing as a trusted regulator and champion for public health and safety.

Corporate Governance Statement

The HSA Board and Senior Management Team are committed to maintain a high standard of corporate governance and advocate the recommendations set out by the Code of Corporate Governance. The Board believes that good governance is essential in enhancing corporate performance and accountability, ensuring transparency and protecting stakeholders' interests at all times. Our stakeholders include the Ministry of Health, Ministry of Finance, other government agencies, the healthcare industry, our clients, our suppliers and the public at large.

This statement outlines the main corporate governance practices of the organisation that are in place.

The Board

The Board comprises the Chairman and its members, who are appointed by the Minister for Health for a 3-year term. It meets every two months to set strategic directions and formulate policies, assuming the role of monitoring and reviewing of policies leading to HSA's improved management and performance.

Board Members' Remuneration

HSA follows the Government's Directorship and Consultancy Appointments Council (DCAC) guidelines in determining the remuneration of the Board Members.

Notice and Declaration of Directorships and Interest in Shares and Debentures

Board Members are required to declare their directorships in various organisations and their interests in shares and debentures in various corporations. Board Members deemed to be interested in any such transactions made during the meetings are reminded and required to declare their interest; they are to refrain from any deliberation made when such an interest has been declared.

Accountability and Audit

HSA's Senior Management Team is accountable to the Board. In return, the Board is accountable to the Minister for Health. To allow the Board to discharge their duties adequately, Senior Management and staff are required to provide periodic updates and answer any queries that the Board may have on the operations and planning of the organisation.

For accountability purposes, the Board has established the following sub-committees:

(a) The Audit Committee

This Committee assists the Board to review and assess the adequacy of internal accounting controls and financial reporting controls. It meets at least twice a year with the Management and auditors to determine the scope of the external and internal audit and to review the findings of its appointed auditors.

(i) Internal Audit

HSA has engaged MOH Internal Audit Team to provide the internal audit function on an annual basis.

(ii) External Audit

The external statutory audit of the FY2007 financial statements has been conducted by Ernst & Young.

(b) The Staff Establishment Committee

The Staff Establishment Committee assists the Board in reviewing the adequacy of staffing numbers and budgets to meet operational needs and of Human Resource Policies for compensation and benefits. It oversees some staff matters such as the appointment of senior management positions.

(c) The Finance Committee

This Committee assists the Board in ensuring that financial resources are managed and utilised prudently and in the most effective and efficient manner, contributing towards the organisation's overall mission.

Communication with Stakeholders

The Professional Centres conduct regular consultations with the industry and their clients, seeking to keep them informed of new directions and regulations, and to listen to their concerns. HSA publishes an annual report to meet statutory requirements and to provide information to our stakeholders.

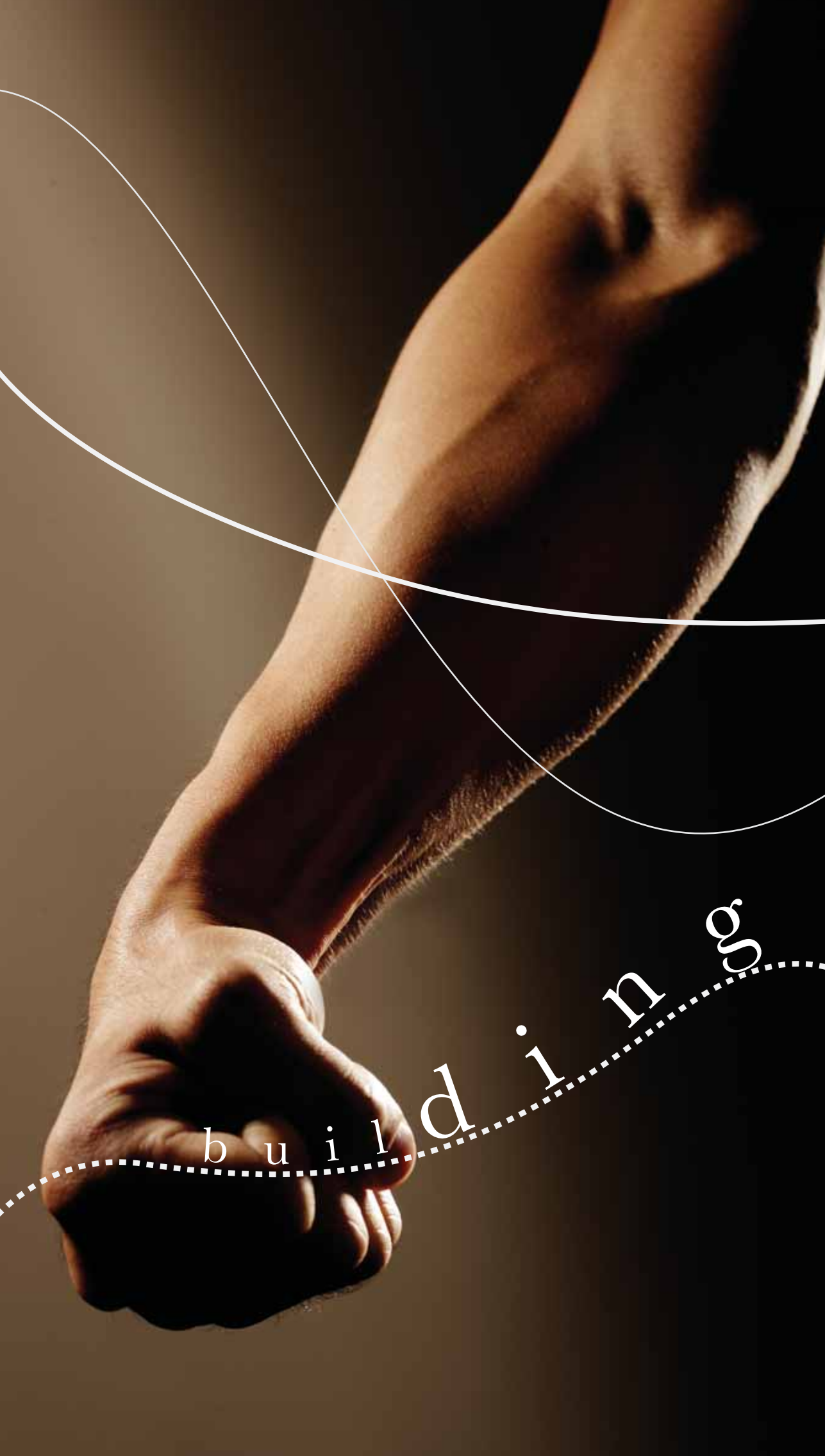
In addition, regular updates on matters of interest to our stakeholders are posted on our internet website. Our Quality Service Manager promptly handles all feedback and queries received from interested parties.

Code of Business Conduct

The Board, officers and employees are required to observe and maintain high standards of integrity, and are in compliance with the law and government regulations, and organisation policies.

Risk Management

The Management is continually reviewing and improving the business and operational activities to identify areas of significant business risks as well as appropriate measures to control and mitigate these risks. The Management also reviews all significant control policies and procedures and highlights all significant matters to the Board and the Audit Committee.


building

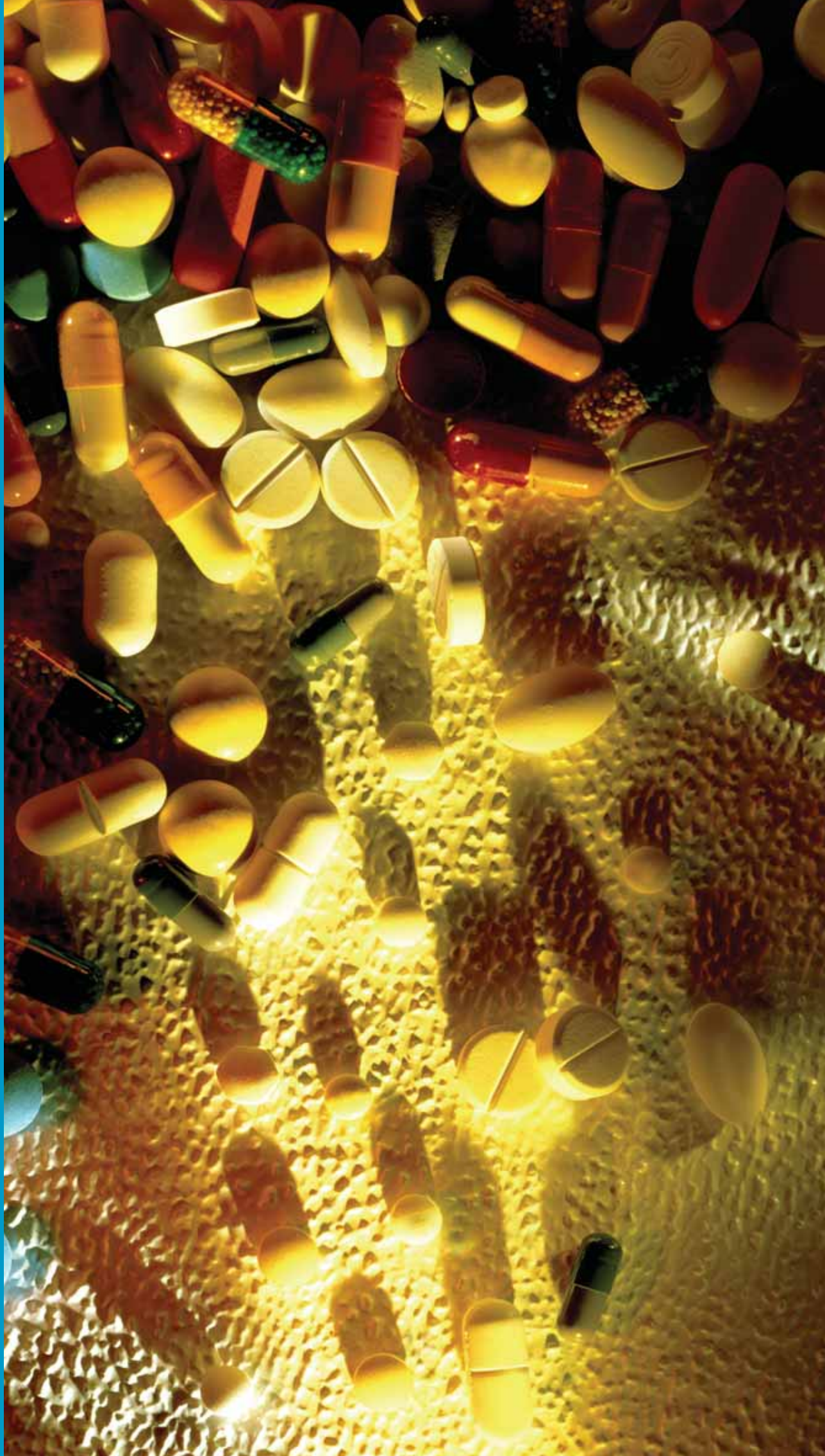
Strength

In an ever-evolving biomedical and life sciences landscape, the emergence of innovative and novel products is likely to continue at a rapid pace. Gearing up for these challenges, we continue to build our capabilities and capacity to strengthen our regulatory frameworks so as to safeguard and advance public health.

We ensure that drugs, innovative therapeutics, medical devices and health-related products are wisely regulated and meet appropriate safety, quality and efficacy standards.

Health Products Regulation Group

- Centre for Drug Administration
- Centre for Medical Device Regulation



Crack Down on

Power 1 Walnut and other Illegal Aphrodisiac Products

On 29 February 2008, HSA was first alerted to a case of a serious adverse event of hypoglycaemia (low blood sugar) suspected to be caused by a health product. The collaborative investigations carried out by our regulatory and laboratory teams enabled the quick detection and successful tracing of the case and subsequent ones to an illegal health product touted for sexual enhancement – *Power 1 Walnut.*

Leveraging on the synergistic blend of expertise across HSA, our analytical laboratory in the Applied Sciences Group was able to promptly detect the presence of an adulterant, glibenclamide, in the product. This potent anti-diabetic drug was the cause of serious symptoms of hypoglycaemia such as confusion, agitation, seizures and coma experienced by unsuspecting consumers.

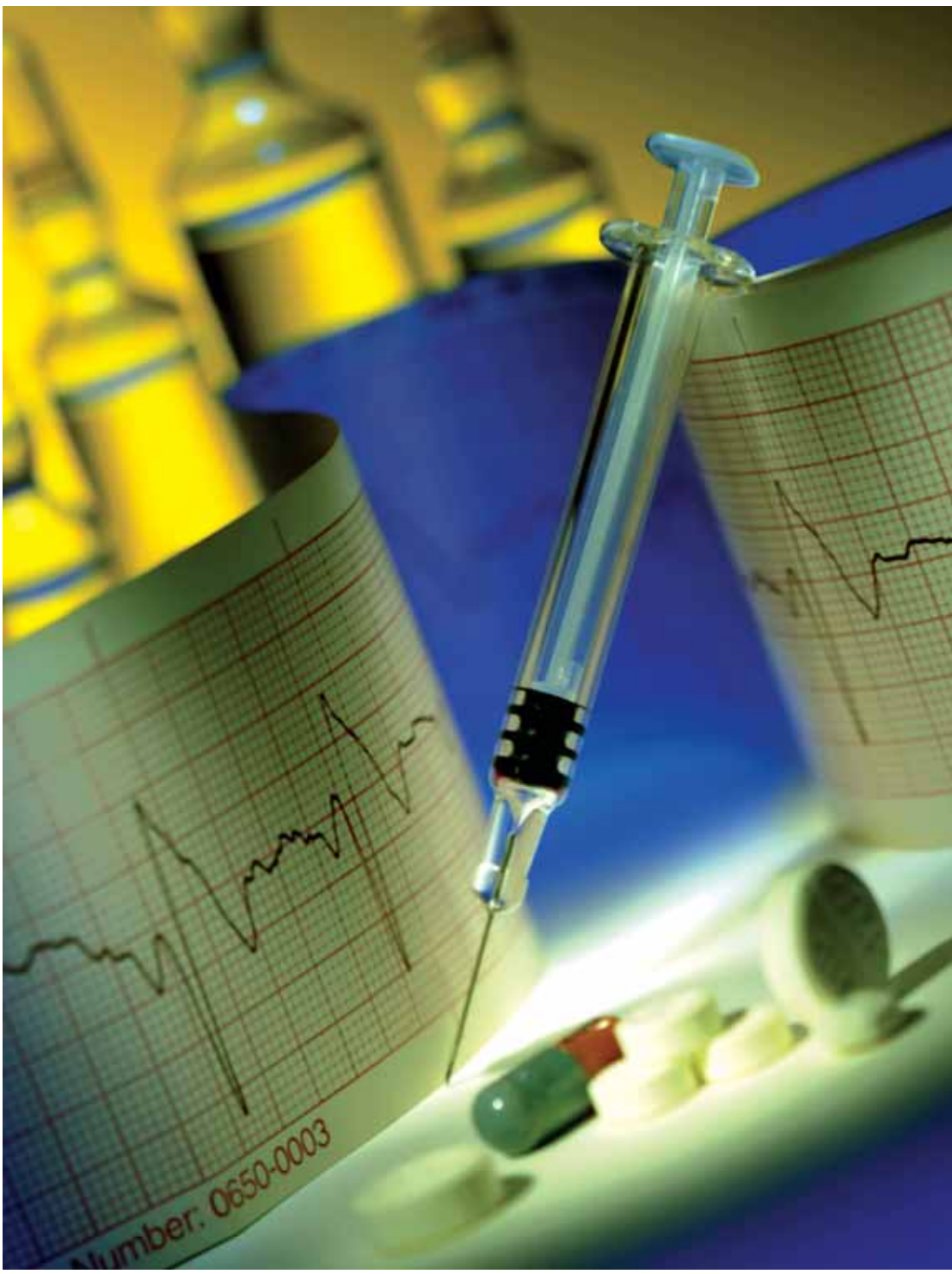
To warn the public against the adulterated product, a public advisory was promptly issued. Tapping on the strong and integrated network with local healthcare institutions, our Pharmacovigilance Unit was able to uncover more cases early from the signals picked up and reported by the hospitals. Through stepped-up enforcement efforts, including increased raids in high-risk areas like red-light districts, three other types of illegal aphrodisiac products were uncovered in the market - *Santi Bovine Penis Erecting Capsule* (三體牛鞭), *Zhong Hua Niu Bian* (中華牛鞭) *and counterfeit 'Cialis'.*

As at July 2008, 173 cases of adverse drug reactions related to the use of aphrodisiac products had been reported. Upon further investigation, 53 were found to be directly linked to the use of one of the above four adulterated products. For the remaining 120 cases, the symptoms of hypoglycaemia and the positive findings of glibenclamide or its metabolites in the patients' blood or urine strongly suggested that glibenclamide-adulterated products of some sort might also be involved.

A total of four persons related to these illegal activities have so far been successfully prosecuted in court with over 200,000 illegal aphrodisiac pills and tablets seized.

Due to the clandestine nature of such illegal operations that cannot be easily stamped out, we have taken a multi-pronged approach to minimise harm posed by these products. These include ongoing surveillance and enforcement activities to disrupt the illegal supplies of such products and increased public education to caution consumers about the danger of buying and using illegal products.

In recognition of our rapid action and swift intervention, 18 HSA officers received commendations from Mr Khaw Boon Wan, Minister for Health, at the Minister for Health Award Ceremony 2008 held on 8 April 2008.



181
New Drugs Registered

5,656
Medicinal Products Registered*

8,685
Chinese Proprietary Medicines Listed*

14,800
Cosmetic Products Notified under ASEAN Cosmetic Directive**

* as at 31 March 2008
** from January to March 2008

Stepping Up Public Protection

Medical Device Control (Phase I)

The regulation of medical devices came into effect under the Health Products Act (HPA) on 1 November 2007. The first phase of formal regulation increased the responsibility of manufacturers, importers and wholesalers for greater consumer protection. Key controls include the compulsory reporting of Field Safety Corrective Actions (FSCA) and adverse events, as well as the promotion and advertising of medical devices.

As at March 2008, we had been notified of 85 FSCA, including company initiated product recalls. We also received 23 reports of adverse events relating to medical devices in Singapore. Safety alerts and advisories were issued to healthcare professionals to notify them of quality, safety and performance issues relating to such medical devices.

ASEAN Cosmetic Directive

On 1 January 2008, cosmetic products were regulated under the HPA. The implementation of the ASEAN Cosmetic Directive was the result of a region-wide harmonisation programme to enhance public health and safety standards. To facilitate industry compliance with these requirements, a workshop on ASEAN Good Manufacturing Practices was organised in conjunction with the Cosmetic, Toiletry and Fragrance Association of Singapore in April 2007.

Regulatory Actions following Risk Assessments

Four products containing nimesulide were suspended from sales and subsequently withdrawn from the market following our assessment that the potential risk of liver toxicity outweighed the benefits. We also imposed additional licensing restrictions for aprotinin and tegasarod to minimise the risks.

Prohibition of Chinese Proprietary Medicines (CPM) in Liquid Formulations

As part of the ongoing review of safety standards of CPM sold in Singapore, oral liquid CPM without proof of product assurance in the form of a Free Sale Certificate (FSC) from the country of origin's regulator were prohibited from 1 January 2008. Traditional Chinese medicine practitioners were actively engaged to minimise disruption to their practice.

1,774
Medical Advertisement Permits Issued

3,862
Premises, Dealers and Importers & Exporters of Health Products Licensed/Certified#

462
Site Audits Conducted for Good Manufacturing & Good Distribution Practices

includes new, renewal and amendment applications

Managing Potential Risks

We received and reviewed more than 13,000 spontaneous suspected adverse drug reaction reports submitted through our Adverse Drug Reaction Monitoring Programme, which has been well integrated into the local healthcare setting. The close monitoring of local adverse reactions allows us to track and identify safety trends of products used in the local population. As part of the risk management of health products, we also contribute to international drug monitoring through close collaboration and information exchange with our overseas counterparts.

In our ongoing efforts to communicate emerging safety issues to healthcare professionals, three *Adverse Drug Reaction Bulletins* and seven *Dear Healthcare Professional Letters* were published in the year under review.

Combating Pharmaceutical Crime

Together with the US Food and Drug Administration and US-ASEAN Business Council, we jointly organised the 1st and 2nd seminars on anti-counterfeiting health products under the auspices of the Asia Pacific Economic Cooperation (APEC)-Life Sciences Innovation Forum (LSIF). The seminars raised awareness among APEC leaders on World Health Organisation (WHO)'s International Medicinal Products Anti-Counterfeiting Taskforce (IMPACT) initiatives to combat counterfeit health products within the APEC economies.

We also played active roles in the 2nd WHO IMPACT Global Forum, which was held in Singapore and organised by the WHO IMPACT Technology Workgroup. The meeting, attended by representatives of more than 130 nations, endorsed several documents proposed by the five working groups that advocated training of officers in regulatory and enforcement areas, assessment of national situations to identify weaknesses and needs, as well as assistance to member states to improve their capacity to combat counterfeiters.

We actively contributed to the first ASEAN-China Conference on combating counterfeit medical products and "Operation Storm", an INTERPOL-led project in collaboration with WHO involving seven ASEAN countries and China against the transnational trafficking of counterfeit medical products in the Greater Mekong Sub-Region. This was a unique opportunity for representatives from regulatory authorities, enforcement agencies and health professional associations to work towards the common goal of eradicating counterfeit health products. An important outcome of the conference was the agreement for all countries to establish a Single Point of Contact. Singapore was also accepted as a member of the Forensic Expert Group led by INTERPOL.

253
Clinical Trials Certificates Granted^

1,472,221
Total Tablets & Capsules Seized

^ from January to December 2007

Forging Regulatory Ties Beyond

Memoranda of Understanding

In the year under review, we continued to strengthen our ties with overseas counterparts to enhance inter-agency regulatory efforts. Under our Memoranda of Understanding (MOU), we explored a work-sharing programme with Therapeutic Goods Administration (Australia) and Health Canada. The signing ceremony for a new MOU with Swiss Medic, the Swiss Agency for Therapeutic Products, was held on 12 May 2008. We continued engagement on drug and device regulatory issues with our other MOU partners, the US Food and Drug Administration and the Chinese State Food and Drug Administration.

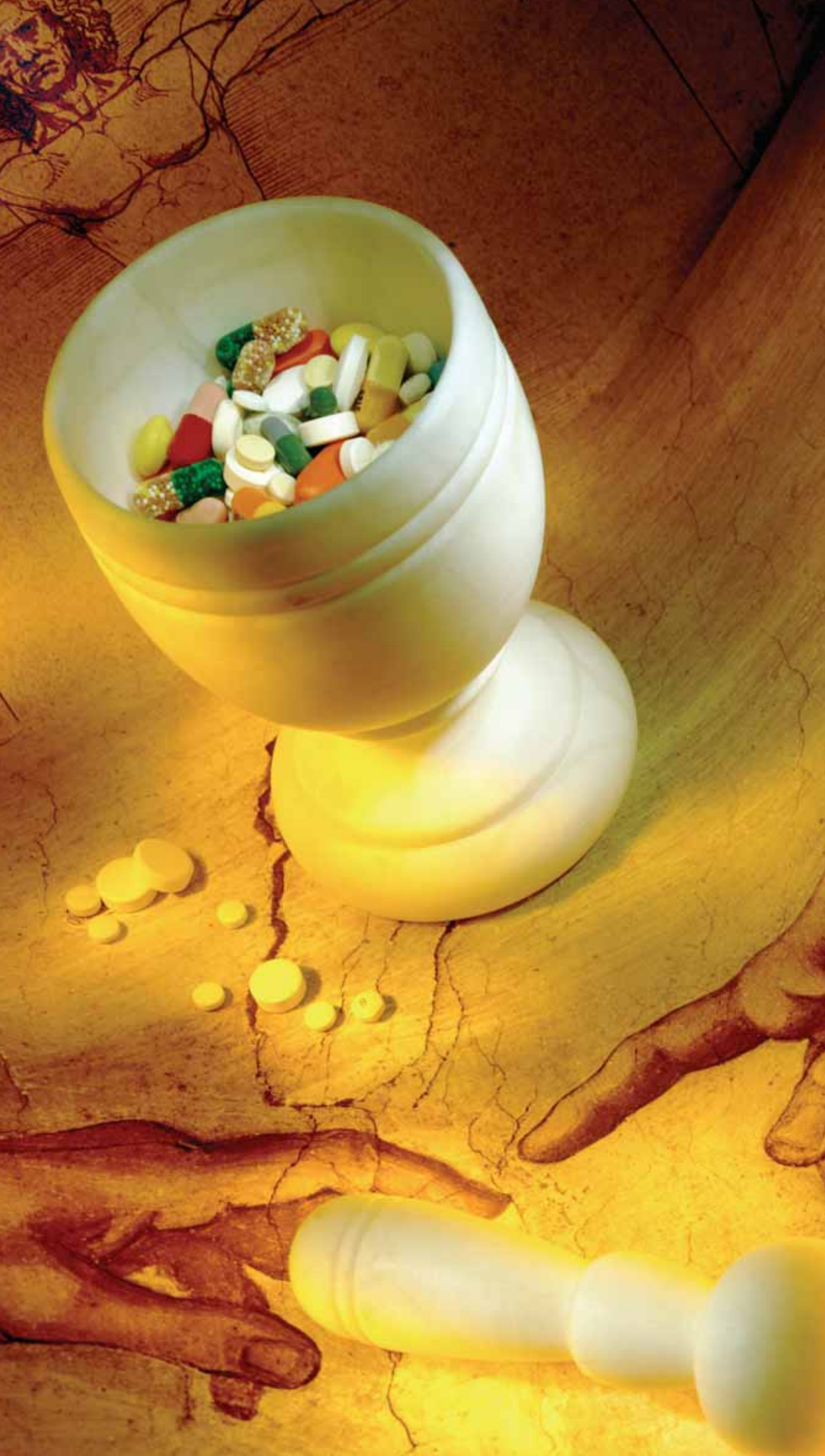
ASEAN Consultative Committee for Standards and Quality Product Working Groups

In support of the ASEAN vision to harmonise regulatory standards, we contributed through the following Product Working Groups (PWGs) established under the ASEAN Consultative Committee for Standards and Quality:

- Pharmaceutical PWG
- Traditional Medicines & Health Supplements PWG
- Medical Device PWG

13,475
Adverse Drug Reaction Reports Received

5,747
Tobacco Retail Outlets Licensed



The three PWGs continued to work towards harmonising regulatory requirements and Good Manufacturing Practice (GMP) standards with the aim of establishing a Mutual Recognition Arrangement for GMP Inspections of Medicinal Products. In addition, a post-marketing alert system has been established.

Participation in Pharmaceutical Inspection Convention/Cooperation Scheme (PIC/S) Activities and Joint GMP Audits

We hosted the PIC/S Seminar 2007. This was the first PIC/S event held in Asia and more than 130 participants from 45 countries participated. The seminar focused on the Inspection of Manufacturers of Solid Dosage Forms.

WHO implemented a pre-qualification programme to ensure that medicinal products purchased by WHO organisations meet appropriate standards of quality, safety and efficiency. During the year, we participated in the WHO Joint GMP audits in India and China. Our GMP auditors also carried out joint audit of manufacturing facilities in China with our Canadian counterpart.

Forging Ahead

With the pharmaceutical and biotechnological industries growing at such a rapid pace, we will continue to strengthen our regulatory frameworks and our capabilities and capacity to meet the challenges ahead.

Together with our parent Ministry of Health, we have established a working group to develop a regulatory framework for human cell and tissue therapies to facilitate timely access of these products while ensuring their safety, efficacy and quality. The working group has concluded its review and proposed a draft framework for further consultation with various stakeholders.

To better support Singapore's biomedical sciences development, we will also be embarking on research projects in collaboration with healthcare and research institutions.

Work on the regulation of health supplements is proceeding under a proposed consolidated Complementary Health Products regulatory framework currently under development.

In tandem with the globalisation of markets, we will continue to deepen our ties and develop new areas of collaboration with major overseas regulatory counterparts.

PRE-MARKET ACTIVITIES

Evaluation, Licensing & Certification

Drugs and Biologics	
New Product Licences Issued	**181**
• Chemicals	93
• Biologics	17
• Generics	71
Variations in Product Licences	**2,513**
• Chemicals	2,196
• Biologics	317
Registered Medicinal Products (as at 31 March 2008)	**5,656**
• Prescription-Only Medicines (69.3%)	3,921
• Pharmacy-Only Medicines (13.1%)	740
• General Sale List Medicines (17.6%)	995
Import of Medicinal Products for Re-Export	2,685
Import of Medicinal Products on Named-Patient Basis	4,316
Travellers' Medication Permits Issued*	372

** Permits issued to visitors bringing in personal medications containing a controlled substance*

Chinese Proprietary Medicines (CPM)	
CPM Listed (as at 31 March 2008)	**8,685**
Product Listing Applications Received	1,802
Applications Rejected	4
Licensed CPM Importers (as at 31 March 2008)	173
Licensed CPM Manufacturers (as at 31 March 2008)	23
Licensed CPM Re-Packers (as at 31 March 2008)	28
Licensed CPM Wholesalers (as at 31 March 2008)	261

Cosmetic Products	
Cosmetic Products Notified (January to March 2008)*	**14,800**
Total Cosmetic Products Licensed (as at December 2007)*	19,400
New Cosmetic Products Licensed (April to December 2007)*	5,760
New Cosmetic Importers Licensed (April to December 2007)*	69
Cosmetic Products Rejected	22
Letters of Free Sales for Export	98

** From January 2008, the notification system under the ASEAN Cosmetic Directive has replaced the former licensing framework*

Health Supplements	
Enquires on Classification, Import and Sales Requirements	4,728

Medical Advertisements	
Medical Advertisement Permits Issued	**1,774**
Western Medicines	35%
Chinese Proprietary Medicines	21%

Compliance with GMP and GDP – Premises, Dealers, Importers and Exporters	
Premises, Dealers, Importers & Exporters Licensed/Certified*	**3,862**
Manufacturers/Assemblers Licences Issued*	118
Wholesale Dealer's Licences Issued*	505
Import Licences Issued*	918
Export Licences Issued*	236
Pharmacy Certificates Issued*	355
Form A Poisons Licences Issued*	481
Form C Poisons Licences Issued*	755
Certificate of Pharmaceutical Products	310
Good Manufacturing Practice (GMP) Certificates Issued	34
Free Sale Certificates	69
Statement of Licensing Status Issued	12
GMP Clearance for Overseas Manufacturers	69

** Includes new, renewal and amendment applications*

Clinical Trials (January to December 2007)	
Clinical Trials Certificates* Granted:	**253**
• Phase I	47
• Phase II	46
• Phase III	135
• Phase IV	26
Clinical Trials Applications Approved	153
Clinical Trials by Therapeutic Areas:	
• Oncology	34%
• Clinical Pharmacology	18%
• Cardiology	11%
• Neurology	9%
• Gastroenterology/Hepatology	5%
• Urology	5%
• Infectious Disease	3%
• Immunology	3%
• Endocrinology	3%
• Others	9%
Initial Reports of Adverse Drug Reactions (ADR)	3,470
Follow-up Reports of ADR	4,321

** A Clinical Trial Certificate is issued for each participating site in a clinical trial*
NB: More than one suspected drug may be implicated in an ADR report

POST-MARKET ACTIVITIES

Investigation, Surveillance and Prosecution	
Total Tablets & Capsules Seized	**1,472,221**
Complaints Received	789
Prosecution Cases Completed	96
Offenders Sentenced to Imprisonment	27

ADR Monitoring	
ADR Reports Received (on All Health Products)	**13,475**
ADR Reports from Public Hospitals and Government Clinics	82.1%*
ADR Reports from Private Hospitals and Clinics	9.4%*
ADR Reports from Pharmaceutical Companies	8.4%*
ADR Reports Associated with Pharmaceutical Products	96.9%

** Based on 1,740 ADR reports analysed*

Top Ten Drugs Suspected of Serious ADRs		
	Active Ingredient	**No.**
1	Diclofenac	76
2	Naproxen	70
3	Cotrimoxazole & Metoclopramide	63 each
4	Hydrochlorothiazide	60
5	Atenolol	59
6	Simvastatin	48
7	Amoxicillin & Aspirin	41 each
8	Paracetamol & Co-amoxiclav	38 each
9	Mefenamic Acid	36
10	Docetaxel & Paclitaxel	34 each

Top Five System-Organ Classes Affected by ADRs		
	Active Ingredient	**No.**
1	Skin & Appendages	758 (25.0%)
2	Body as a Whole	544 (17.9%)
3	Respiratory System	303 (10.0%)
4	Nervous System	244 (8.0%)
5	Gastro-intestinal System	234 (7.7%)

Medical Devices	
Field Safety Corrective Actions (FSCA)*	75
Reported Adverse Events Relating to Medical Devices	25

** FSCA are actions taken by the medical device manufacturer to ensure public safety when using a medical device (e.g. product recalls)*

Tobacco Regulation	
Tobacco Retail Outlets Licensed (as at 31 March 2008)	**5,747**
Illegal Sale of Tobacco to under 18 Years Old	57
Youths Compounded	6,317
Youths Prosecuted in Court	327

upholding

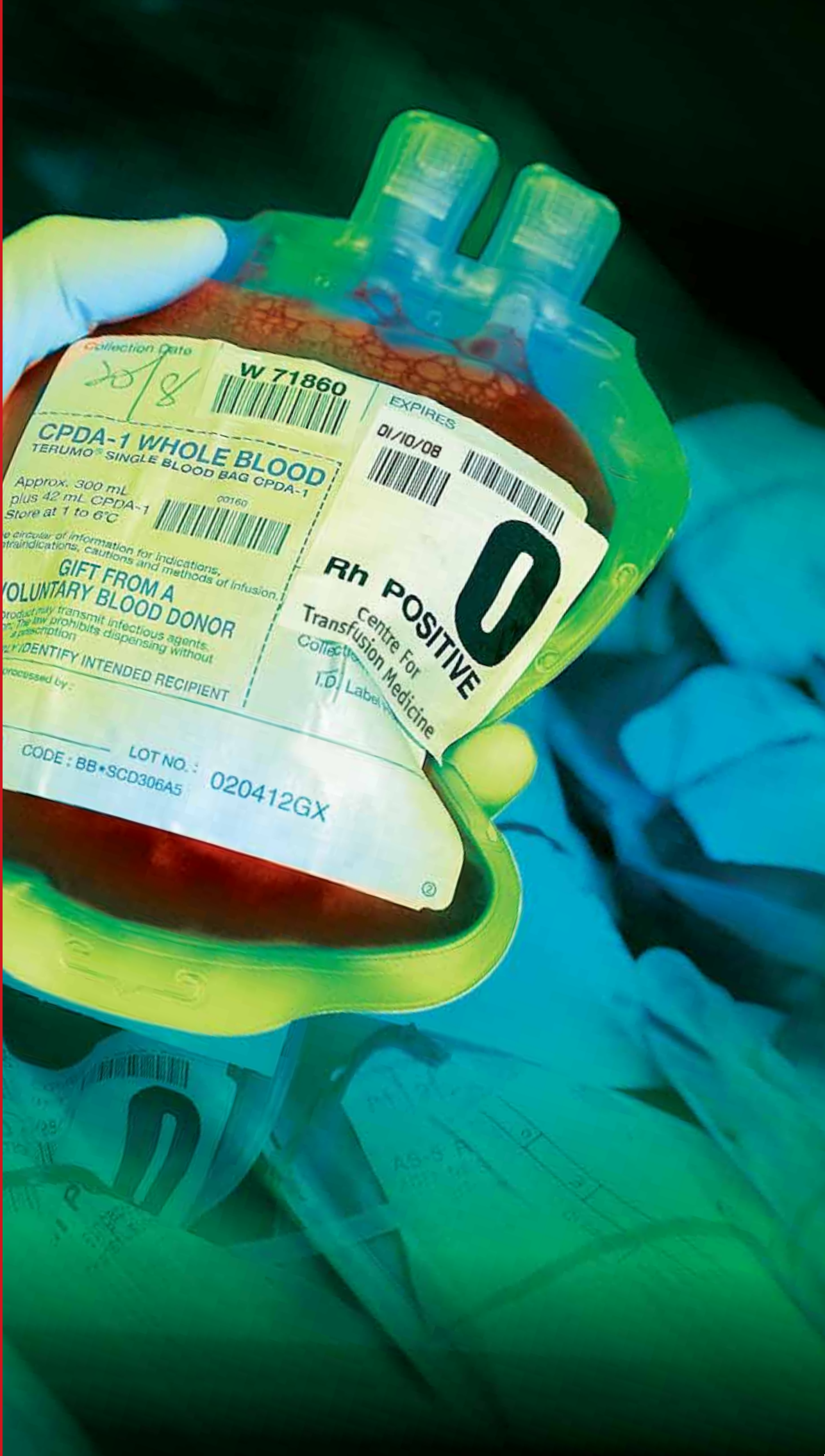
Standards

Emergence of imminent health threats and diseases increasingly threaten blood safety and its supply around the world. The viability of a national blood service lies in the strong commitment to uphold bloodbanking standards of quality to create a sustained supply of safe and adequate blood to serve the needs of the community.

We, as the national blood service, secure the nation's blood supply by ensuring a safe and adequate blood supply and providing specialist transfusion medicine services.

Health Services Group

• Centre for Transfusion Medicine


Collection Date
W 71860
EXPIRES
01/10/08
CPDA-1 WHOLE BLOOD
TERUMO® SINGLE BLOOD BAG CPDA-1
Approx. 300 mL
plus 42 mL CPDA-1
Store at 1 to 6°C
00160
GIFT FROM A
VOLUNTARY BLOOD DONOR
IDENTIFY INTENDED RECIPIENT
Rh POSITIVE
O
Centre For
Transfusion Medicine
CODE : BB•SCD306A5
LOT NO. : 020412GX

Another Notch Up in Quality Donor Care:

Surf Before and After Donation and More

At HSA, we recognise the time and effort taken by our blood donors in coming forward to give the gift of life. Great emphasis is placed on making blood donation a convenient, painless and enriching experience. In this way, we encourage our blood donors to continue donating blood regularly and to bring their friends along to donate blood as well.

We are committed to upholding high standards of quality in care for our donors. Blood donation and collection practices and processes are continually reviewed and updated to make sure that blood donor and patient safety is well protected. In July 2007, the haemoglobin criterion for female donors was revised as part of the measures taken to minimise the risk of iron deficiency in regular donors. Educational talks were conducted to share information on iron-rich diets with our donors and the public, and our post-donation refreshments now include food items rich in iron.

In June 2007, we introduced Wireless@sg, another value-adding service riding on technology, to enrich the total experience of donating blood at the Bloodbank@HSA. Blood donors can now surf for free and check their emails at the Bloodbank@HSA while waiting to donate blood, or when taking their snacks and resting after donating.

Enhanced Efficiency and Accuracy in Quality Bloodbanking:

Automated Pre-transfusion Testing

Patients requiring blood transfusion are subjected to pre-transfusion tests that include ABO and Rh blood grouping, atypical red cell antibody screening, and cross-matching. These tests are essential in ensuring that patients receive safe and compatible blood products for transfusion.

To equip our laboratories to manage increasing transfusion needs, automated systems were introduced to provide greater efficiency in utilisation of scarce resources. The new automated pre-transfusion testing system enables our Cross-Match Laboratory to process a larger number of samples with higher work efficiency and faster turnaround time without the need for additional manpower. The consistency of an automated system also ensures even greater reliability of results, and enables enhanced documentation of test results.

At the same time, automated blood processing systems were introduced into our Blood Component Processing Laboratories to supplement existing processes that separate whole blood donations into red cells, platelets and plasma. In addition to enabling greater efficiency in processes, this also provides improved consistency in quality of the blood products.

55,402
Blood Donors

87,490
Whole Blood Donations

Pursuing Excellence in Quality

The promotion of quality bloodbanking practices and the optimal usage of safe blood products are at the core of our mission. To this end, the Health Services Group (HSG) provides specialised services in transfusion medicine and science including immunohaematology and tissue typing. We also offer professional advice to local and regional clinicians.

The continued accreditation of HSG in March 2008 by the AABB (formerly known as the American Association of Blood Banks), the gold standard in bloodbanking, reaffirmed our strong commitment to professionalism and high quality bloodbanking. This accreditation further strengthened our reputation and standing within the international transfusion medicine and global scientific community.

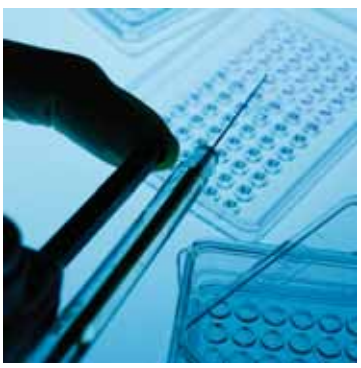
Our strategic partnership with the Singapore Red Cross (SRC) is in its seventh year. Managing the National Blood Donors Programme, SRC shares our agenda and champions voluntary and non-remunerated donations that are regarded as the safest form of donation.

Strengthening our Professional Networks

As a World Health Organisation (WHO) Collaborating Centre for Transfusion Medicine, we have an active role in improving standards of blood supply quality and safety in our region. We work closely with WHO and other international blood transfusion organisations to conduct research on upgrading bloodbank techniques and processes, promote quality standards and protocols in transfusion medicine, develop strategies to protect the blood supply against infectious agents, and provide clinical and technical advice for blood transfusion services particularly in relation to quality management and the supply of safe blood and blood products. We have worked with many national and international agencies in organising and conducting training programmes in bloodbanking and transfusion medicine. One such notable event was the 'Singapore-WHO Workshop on the Management of National Blood Programmes' for directors and managers of national blood programmes in the Western Pacific and South East Asian regions, organised in collaboration with the Ministry of Foreign Affairs and WHO.

229,849
Processed Blood Components

818,250
Laboratory Tests



As a founding member of the Asia-Pacific Blood Network, we enhanced our collaboration and links with other regional blood services. Our senior staff also participated in various Working Groups of the International Society of Blood Transfusion, in the areas of Haemovigilance, Blood Supply Management and Transfusion Transmitted Diseases. Through these platforms, we are able to participate actively in the development of international guidelines and standards in bloodbank and transfusion practices, and collaborate in international research projects on Hepatitis B. As a member of the WHO-convened Global Collaboration for Blood Safety, we are part of a network of internationally recognised organisations, agencies and experts concerned with the safety and availability of blood transfusion. Through active participation in these various networks, we are very much part of worldwide efforts to improve global blood safety and availability.

Locally, strong partnership with the public and private hospitals has played a critical role in blood management, especially during times of blood shortage and disease outbreak. The highly successful National Haemovigilance Programme is a reflection of the strong working relationships with our healthcare partners, which has resulted in quality improvement in transfusion safety.

Harnessing New Technologies

To improve the quality and efficiency of our service delivery, we strategically employ advanced technologies in bloodbanking science.

In the year under review, our Tissue Typing Laboratory introduced the Flow Cytometry Determination Test using Facs Calibur for Human Leukocyte Antibody screening and identification. Compared to the former serology technique (by complement dependent cytotoxicity), more reliable and accurate results are now obtained. These results are vital in organ and bone marrow transplantation cases.

A new technology in employing the Pathogen Inactivation Systems on blood products was evaluated. By studying the use of the Methylene Blue System for fresh frozen plasma and the Psoralen System for platelets, we will be able to determine the efficacy of these new techniques in further protecting the blood supply from threats posed by new or re-emerging pathogens.

Forging Ahead

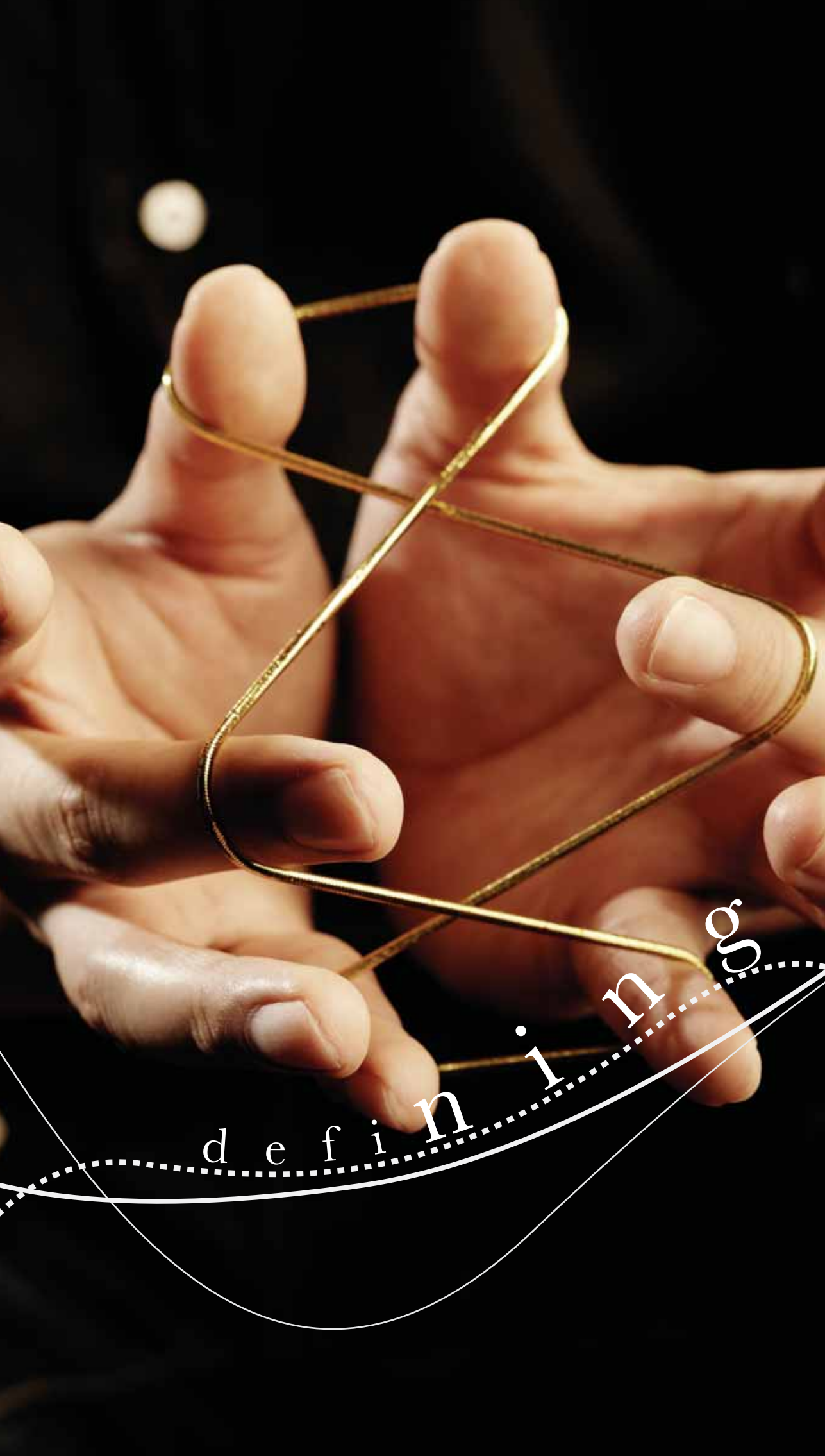
In the coming year, our efforts will be channelled towards blood conservation and red cell preservation as a way to effectively manage blood supply. As blood usage continues to increase, this is an area of priority. We will review and maximise the blood collected through the use of Autologous Blood Cell Salvage and other blood conservation procedures. We will also continue to encourage multi-disciplinary involvement of hospital transfusion committees, clinical staff and others involved in the blood supply chain to promote blood conservation and appropriate clinical use of blood and blood products.

We are actively involved in many forward-looking research projects. One key focus is ongoing research into immunotherapy and cellular therapy. This area of work has enhanced our current understanding of cellular mechanisms as a way to improve cancer immunotherapy and we will continue to build on this knowledge.

In recent years, we have seen an increasing high incidence of dengue fever in Singapore. In response, we are conducting prevalence studies of the virus in our blood donor pool to assess the threat to the blood supply. We are also one of the collaborating partners in a research project on identification of the hybrid Miltenberger red cell antigen gene within the Singapore donor population.

We set high standards to achieve a world-class donor care system. We will continue to exploit Information Technology to enhance our web portal for blood donors – Donorcare II. Donors can look forward to completing an online questionnaire when making their e-appointments. Together with a new fingerprint identification system, these enhanced features will help to reduce waiting time and further enhance each donor's overall donation experience.

Focus will also be placed on the standardisation of blood components so to reach a higher standard in bloodbanking efficiency and safety.


defining

Solutions

Forensic medical, forensic scientific and chemical analytical expertise is essential for the administration of justice and implementation of public health and safety programmes for the protection of the citizenry. From crime scenes to court rooms and in product regulation, new techniques, services and solutions are needed to deal with growing challenges in a globalised world.

We represent the national forensic medical and scientific, and analytical laboratory expertise that supports regulatory and other compliance agencies in the administration of justice and the safeguarding of public health.

Applied Sciences Group

- Centre for Analytical Science
- Centre for Forensic Medicine
- Centre for Forensic Science

Customised Recovery Kits
for Crime Scenes

The screening and recovery of trace evidence from crime scenes, individuals and objects are critical in serving the administration of justice.

To provide optimal solutions to our clients, we have successfully developed customised recovery kits, designed for sampling unknown liquids, ignitable liquid residues, gunshot residues and explosive residues on bodies and other surfaces, and a blood screening kit for screening of blood at crime scenes.

The kits have been designed to be fully self-contained, with all the necessary sampling tools, packaging materials and supplies for easy collection and screening of evidence from an individual or a crime scene. The various components of the recovery and test kits are subjected to a slew of stringent quality checks to ensure the absence of contaminants and interference before being individually serialised and sealed to maintain integrity.

Law enforcement agencies have benefitted from these new products, with the Singapore Police Force procuring two different types of explosive kits in March 2008.

Precise and Rapid Results
in Detecting PCBs in Food

Polychlorinated Biphenyls (PCBs) is a class of toxic contaminants in food. The conventional analytical methods used to detect its presence in food are often laborious and resource-intensive.

As part of our ongoing efforts to innovate and create value for our clients, a new analytical technique known as Pressurised Liquid Extraction (PLE) has been successfully developed and applied to replace the conventional and manual extraction methods.

The adoption of PLE has produced better quality and more precise results. This latest automation has provided for simultaneous, rapid and online extraction of PCBs in food, thereby resulting in faster test turnaround time and reduction of cost. As this new technique requires significantly less solvents and chemical reagents, it has proven to be a 'greener' alternative for the environment.

To date, food regulatory agencies including the Food Control Division of the Agri-Food and Veterinary Authority, and food companies have benefitted from this new technique.

One-Stop Radioactivity Screening Service

for Food Products

In line with our commitment to providing high quality and value-adding scientific service to our clients, we developed a one-stop reliable radioactivity screening service for all food products in Singapore.

Applying the unique blend of expertise in radiation and food sciences, a gamma ray spectroscopic method has been successfully developed to screen radioactivity in food products. This new method employs a sodium iodide scintillation detector for the quantification of radioactive isotopes, Cs-134/137.

The one-stop quality service for radioactivity and chemical testing has enhanced customer experience and provided a faster turnaround time. Customers are also guaranteed test integrity as our Food Safety Laboratory is Singapore's only laboratory accredited by Singapore Accreditation Council-Singapore Laboratory Accreditation Scheme (SAC-SINGLAS) to endorse the reliability of radioactivity screening of food products.

Food regulatory agencies, including the Food Control Division of the Agri-Food and Veterinary Authority, and local and foreign companies requiring radioactivity screening for the application of export certificates have benefitted from this new service.

50,304
Analytical Tests for Laboratory Samples

10,352
Analytical Cases

3,919
Coroner's Cases

2,051
Coroner's Autopsies

The year under review focused primarily on consolidating existing infrastructure in preparation for expansion of capability and capacity into the intermediate and longer-term future.

Delivering Better Value

The specialised forensic and laboratory services provided by the Applied Sciences Group (ASG) reach out to a spectrum of public and private sector clients. These further impact a larger group of other secondary stakeholders who are directly affected by the results of our testing, examination and analytic services. In continuing to excel and meet clients' expectations, our key foundation is our scientific integrity, reliability and accuracy. The outcome of our work is not a mere test report or an analytical result - it is our professional expertise delivered with timeliness, accuracy and relevance.

We embarked on a group-wide major strategic review and transformation process to strengthen professional capability and operational efficiency. We also pursued greater innovation, research and development, as well as building of new capabilities. A major business process review was initiated in FY2007 to identify areas for further improvement across and within the Group. This ongoing exercise is aimed at transforming processes and business models into a more responsive and more integrated value delivery system. We continue to aim at providing holistic solutions, and not merely test results, to clients. The completion of the initial phase provides us with an implementation roadmap for the years to come.

Resource allocation was rationalised and manpower structure was also reviewed across the Group. An outsourcing exercise was carried out to pare non-critical and non-core activities. Greater emphasis was placed on professional training and talent development to enhance the level of scientific specialisation required. Investment was also made to actively step up the renewal of capital scientific infrastructure.

15	38,563	64,161
Non-Coronial Autopsies	Forensic Cases	Forensic Exhibits

Forging Ahead

Efforts to extract further efficiency, productivity and timeliness will continue to be pursued. The value propositions to our clients will be reviewed to sharpen the focus of our work. More will be invested in developing and managing talent, as well as equipping new capabilities and building additional capacity. Opportunities for synergy within the Group and the wider HSA-body will be further explored.

Concurrently, strategies to build capabilities in business development and strengthen client engagement are being put into place. Accreditation and benchmarking remain as the key stepping stones in the quest to advance from good to great. This will enable us to serve a larger community of potential users who will then facilitate raising the level of expertise in these specialised fields. Attention is also being paid to building long-term financial sustainability of our scientific capabilities going forward.

International visitors

Date	Visits By:
16 April 2007	Mr M T Rajah, Trade Commissioner, High Commission of Malaysia
17 April 2007	Professor Thomas Kuehler, Director of Operations, Medical Product Agency, Sweden
29 May 2007	Dr Mahesh Mohatta, Managing Director, Prathama Blood Centre, India
31 May 2007	BG Hassan Al-Obaidly, Director, Criminal Laboratory Department, Qatar Ministry of the Interior
4 - 8 June 2007	Dr Marina Miralia & Dr Carlo Brera, Istituto Superiore di Sanità, Rome, Italy
7 June 2007	Dr Manisha Shrivastava, Head of Department of Transfusion Medicine, Bhopal Memorial Hospital & Research Centre, India
11 June 2007	Dr Anne Fletcher, Non-Executive Director, Australian Red Cross Blood Service
13 June 2007	4-member delegation from Vietnam Ministry of Health led by Dr Le Be Son, Deputy Chief and Chief of Health Division, International Cooperation, Vietnam
21 June 2007	Dr Martin Seoane, Drugs Evaluation Coordinator, National Administration of Food, Drugs and Medical Technology, Ministry of Public Health, Argentina
22 June 2007	5-member delegation from Vietnam Ministry of Health led by Dr Tran Duc Long, Deputy Director, Department of Health Legislation, Vietnam
28 - 29 June 2007	Dr Michael Coble, Head, Research, Armed Forces DNA Identification Laboratory, DNA Profiling Laboratory, USA
6 July 2007	Dr David Graham, National Manager, Therapeutic Goods Administration, Australia
8 – 21 July 2007	Dr Nwe Nwe Oo, Assistant Medical Officer & Daw Thida, Medical Technologist, Ministry of Health, Myanmar
12 July 2007	19-member delegation from the Indonesia Red Cross
27 July 2007	3-member delegation from Health Canada led by Dr Michael Smith, Director, Bureau of Strategic Partnership and International Cooperation, Natural Health Product Directorate

Date	Visits By:
29 July - 20 October 2007	10-member delegation from Vietnam Regional Blood Transfusion Centres
2 – 3 August 2007	Mr Anthony Chan, Chief Pharmacist & Mr Mak Yuk-lun, Pharmacist, Hong Kong Department of Health, China
3 August 2007	14-member delegation from Royal Malaysian Police led by Dato' Abdul Malek, Head Forensic
10 – 14 September 2007	Dr Uwe Unkelbach, Head of the Section Batch Release of Blood Products, Paul-Ehrlich-Institute, Germany
11 September 2007	Mr Alan Matthews, Business Director and Ms Jill Wickham, A-V Head, Forensic Science Service, United Kingdom
13 September 2007	Dr David Lepay, Senior Advisor for Clinical Science, Science/Health Coordination and International Programs, Office of the Commissioner, Food and Drug Administration, USA
17 - 18 September 2007	3-member delegation from Health Canada led by Ms Meena Ballantyne, Acting Assistant Deputy Minister, Health Products and Food Branch
24 September - 3 October 2007	Professor Jack Crane, State Pathologist for Northern Ireland, Professor of Forensic Medicine at the Queen's University of Belfast and Honorary Consultant in Pathology to the Northern Ireland Health and Social Services Boards
September 2007	Dr So Hun Young, Principal Research Scientist, Food and Environmental Metrology Group, Division of Metrology for Quality Life, Korea Research Institute of Standards and Science
1 – 3 October 2007	5-member delegation from Food and Drug Administration, Thailand led by Mr Pansak Pramokchan, Head Pharmacist
5 October 2007	8-member delegation from Vietnam Ministry of Health, Institute of Drug Quality Control, led by Mr Nguyen Ba Ty, Head, Personnel Department
8 October 2007	His Excellency Jorge Leon, Ambassador, Cuba
15 October 2007	Dr Murray M Lumpkin, Deputy Commissioner, International and Special Programs, Food and Drug Administration, USA
22 October 2007	Dr Larry Kessler, Chair, Global Harmonisation Task Force and Director, Office of Science and Engineering Laboratories, Centre for Devices and Radiological Health, Food and Drug Administration, USA

Date	Visits By:
22 – 26 October 2007	Dr Peter Ganz, Director for Biologics Evaluation, Biologics and Genetic Therapies Directorate, Health Products and Food Branch, Health Canada
14 November 2007	Dr Bruce Budowle, Senior Scientist, Federal Bureau of Investigation, USA
17 - 18 November 2007	20-member delegation from Vietnam Regional Blood Transfusion Centres and hospitals led by Mr Bach Quoc Khanh, Deputy Director, National Institute of Haematology and Blood Transfusion, Hanoi, Vietnam
26 November 2007	Dr Mimi Kaplan & Dr Rami Kariv, Institute for Standardisation and Control of Pharmaceuticals, Ministry of Health, Israel
28 November 2007	4-member delegation from Royal Brunei Police Force led by SAC Peng Eng Lee, Director, Criminal Investigation Department
7 December 2007	Ms Gemma Vestal, Legal Scientist, WHO Tobacco Free Initiative
13 December 2007	Dr Uetrecht, Canada Research Chair, Adverse Drug Reactions and Professor of Pharmacy, Medicine & Pharmacology, Sunnybrook Health Science Centre, University of Toronto, Canada
19 December 2007	Professor Philip Marriott, Professor of Separate Science, School of Applied Sciences, RMIT University, Melbourne, Australia
20 February 2008	Ms Kim Seeling, Senior Compliance Office, Health Canada
27 February 2008	• Dr Deok Ja Oh, Director, Blood Transfusion Research Institute, Korean Red Cross • Dr Young-Joo Cha, Professor, Chung-Ang University College of Medicine, Department of Laboratory Medicine, Korea
4 - 5 March 2008	3-member delegation from Royal Brunei Police Force led by DSP Kevin Chiuh
10 March 2008	Mr Thomas Lönngren, Executive Director, European Medicines Evaluation Agency
25 March 2008	Mr Salmon Habib, Trustee of Husanni Blood Bank, Pakistan

Research

papers and projects

Health Products

TITLE OF RESEARCH PAPER	AUTHOR(S)	PROFESSIONAL PUBLICATION
Clinical Trials and Serious Adverse Event Reporting in Singapore	Dorothy Toh, Foo Yang Tong & Dr Christina Lim	The Regulatory Affairs Journal – Pharma, September 2007, 18(9):611-615

Transfusion Medicine

TITLE OF RESEARCH PRESENTATION	AUTHOR(S)	PROFESSIONAL EVENT
Study on Demographic Characteristics of Blood Donors who were Deferred for Low Haemoglobin	Debbie Joan Pennefather & Poo Lay Hoon	XVII ISBT Regional Congress, Madrid, Spain, 23 – 27 June 2007
Comparison Study of Haematocrit of Deglycerolised Red Blood Cells Using Haemonetics ACP 215 and M1 15	Siti Salbiah & Sharon Melinda	3rd National Transfusion Medicine Conference, Kuala Lumpur, Malaysia, 23 – 28 August 2007
A Study of HLA Class I Antigen and Class II Allele Frequencies in Singapore Chinese and Malay Renal Patients	Dr Marieta Chan & Joan Tang Ei Mei	American Society for Histocompatibility and Immunogenetics (ASHI), 8 – 12 October 2007
Routine Bacterial Detection in Whole Blood and Apheresis Platelets – The Singapore Experience	Dr Marieta Chan & Joan Tang Ei Mei	2007 American Association of Blood Banks (AABB) Annual Meeting, Anaheim, USA, 20 – 23 October 2007
Feasibility Study on the Implementation of Routine Bacterial Detection in Apheresis and Whole Blood Derived Platelets	Dr Marieta Chan & Joan Tang Ei Mei	2007 American Association of Blood Banks (AABB) Annual Meeting, Anaheim, USA, 20 – 23 October 2007
Parallel Study on the Detection of Syphilis Infection by ELISA and TPHA Tests in Blood Donors	Sally Lam	2007 American Association of Blood Banks (AABB) Annual Meeting, Anaheim, USA, 20 – 23 October 2007
Efficacy of INTERCEPT Treatment for the Inactivation of Dengue Virus in Single-Donor Platelet Concentrate	Sally Lam	2007 American Association of Blood Banks (AABB) Annual Meeting, Anaheim, USA, 20 – 23 October 2007

Transfusion Medicine

TITLE OF RESEARCH PRESENTATION	AUTHOR(S)	PROFESSIONAL EVENT
Singapore Donor Haemovigilance Programme	Dr Ramir M Alcantara	2007 American Association of Blood Banks (AABB) Annual Meeting, Anaheim, USA, 20 – 23 October 2007
Is Raising the Minimum Haemoglobin Requirements the Solution to Improving the Iron Status of Donors?	Dr Jharna N Shah	XVIIIth Regional Congress of ISBT Asia, Hanoi, Vietnam, 9 – 13 November 2007
Effect of Changes in Donor Selection Criteria on Blood Collection in Singapore	Dr Jason Chay	XVIIIth Regional Congress of ISBT Asia, Hanoi, Vietnam, 9 – 13 November 2007
Implementation of ISBT 128 at Centre for Transfusion Medicine, Singapore	Ng Kok Quan	XVIIIth Regional Congress of ISBT Asia, Hanoi, Vietnam, 9 – 13 November 2007
Study on Citrate Effects in Plateletpheresis Donors	Ko Yi Ru	XVIIIth Regional Congress of ISBT Asia, Hanoi, Vietnam, 9 – 13 November 2007

TITLE OF RESEARCH PROJECT	PRINCIPAL INVESTIGATOR(S)
Pathogen Inactivation of Dengue Virus in Platelets Using INTERCEPT System	Sally Lam, Dr Mickey Koh & Dr Diana Teo
Routine Detection of Hepatitis B Vaccine Escape Mutant in Donor Population	Dr Diana Teo, Sally Lam & Dr Lawrence Kiong
Screening for High Risk and HLA Alloimmunised Donors as a Strategy to reduce TRALI	Dr Ramir M Alcantara & Dr Tan Hwee Huang
Prevalence of Dengue Virus in Singapore Blood Donors	Sally Lam & Dr Diana Teo
Prevalence of HLA Antibodies in Blood Donors	Dr Marieta Chan, Phang Chew Yen, Lai May Ling, Joan Tang Ei Mei & Dr Diana Teo
Molecular Analysis of Miltenberger in Singapore Donor Population	Dr Marieta Chan, Michael Ng Weng Yik & Leou Kwee Kim
Cell Therapy Research Projects	Dr Mickey Koh, Dr Garnet Suck, Dr Marieta Chan, Madelaine Niam & Lim Tsyr Jong

Transfusion Medicine

TITLE OF RESEARCH PROJECT	PRINCIPAL INVESTIGATOR(S)
Lymphocyte Subset in Singapore Population	Dr Mickey Koh, Dr Marieta Chan, Dr Diana Teo, Ng Kok Quan & Debbie Joan Pennefather
Novel Methods of Red Cell Preservation	Dr Mickey Koh & Sally Lam
Genotyping of Rhesus Blood Group in Singapore Donor Population	Dr Marieta Chan, Michael Ng Weng Yik, Kang Kok Sheng, Leou Kwee Kim & Dr Diana Teo

Forensic Medicine

TITLE OF RESEARCH PAPER	AUTHOR(S)	PROFESSIONAL PUBLICATION
Out-Of-Hospital Cardiac Arrests Occurring in Primary Health Care Facilities in Singapore	Ong ME, Yan X, A/Prof Gilbert Lau, Tan EH, Panchalingham A, Leong BS, Et Al	Resuscitation, 2007, 74:38-43
A Brief History of Pathology & the Chapter of Pathologists	Dr Cuthbert Teo Eng Swee	Annuals Of The Academy Of Medicine, Singapore 2007, 36(7):566-72

TITLE OF RESEARCH PRESENTATION	AUTHOR(S)	PROFESSIONAL EVENT
Teaching Of Toxicology in the Undergraduate Medical Curriculum - A 3-Nation Perspective	Dr George Paul	TOXOCON-4, Annual Conference Of Indian Society Of Toxicologists, Kochi, India, 6 January 2008

TITLE OF RESEARCH PROJECT	PRINCIPAL INVESTIGATOR(S)
Study Of Sudden Cardiac Deaths	Dr Cuthbert Teo Eng Swee & Dr Teo Wee Siong, National Heart Centre

Forensic Science

TITLE OF RESEARCH PRESENTATION	AUTHOR(S)	PROFESSIONAL EVENT
Raman Microscopy of Low Explosives and their Combustion Products	Lim Chin Chin, Chia Poh Ling, Su Wanjing & Dr Michael Tay Ming Kiong	9th International Symposium for Analysis and Detection of Explosives, Paris, France, 2 - 6 July 2007
IEDs Made from Common Chemicals – The Singapore Experience	Lim Chin Chin, Chia Poh Ling, Su Wanjing & Dr Michael Tay Ming Kiong	9th International Symposium for Analysis and Detection of Explosives, Paris, France, 2 - 6 July 2007
Traffic Accident Reconstruction	Dr Michael Tay Ming Kiong	CID Forensic Conference 2007 "New Frontier of Victim Identification and Traffic Forensics", Singapore, 27 November 2007
Comparison of Commercial Blood Test Kits for Use in Crime Scenes	Lee Lin Kiak, Lee Kit Ying, Vicky Chow Yuen San, Dr Christopher Syn Kiu-Choong, Lim Chin Chin, Tan-Siew Wai Fun & Dr Michael Tay Ming Kiong	60th Annual Meeting of the American Academy of Forensic Sciences (AAFS), Washington DC, USA, 18 - 23 February 2008
Applying Science to Detect Counterfeit Drugs	Lim Chin Chin, Low Min Yong & Ruth Lee	Planning Meeting 2008 for Operation Storm, Thailand, 11 - 13 March 2008

TITLE OF RESEARCH PROJECT	PRINCIPAL INVESTIGATOR(S)
Validation of the Bluestar Hexagon OBTI Immunochromatographic Technique for the Forensic Identification of Human Blood	Vicky Chow Yuen San, Lee Lin Kiak, Lee Kit Ying, Dr Christopher Syn Kiu-Choong, Lim Chin Chin, Tan-Siew Wai Fun & Dr Michael Tay Ming Kiong
Development of Recovery and Screening Kits for Collection and Screening of Evidence from a Suspect or Scene	Vicky Chow Yuen San, Chia Poh Ling, Lim Chin Chin & Dr Michael Tay Ming Kiong

Forensic Science

TITLE OF RESEARCH PROJECT	PRINCIPAL INVESTIGATOR(S)
Development of a SNP Detection Method in Forensic DNA Typing	Wong Hang Yee, Simon Lim & Tan-Siew Wai Fun
Rapid DNA Extraction for Forensic Casework	Dr Christopher Syn Kiu-Choong, June Tang, Goh Sze Kae, Eng Wan Ying & Tan-Siew Wai Fun
Validation of ABI AmpF/STR MiniFiler in Forensic DNA Casework	Dr Christopher Syn Kiu-Choong, June Tang, Wee Cheng Hiong, Tan Koon Puay & Tan-Siew Wai Fun
Evaluation of Fast PCR System for Forensic Human Identification	Dr Christopher Syn Kiu-Choong, June Tang & Tan-Siew Wai Fun
Development and Validation of Reduced PCR Reagents Volume for PCR Amplification	Simon Lim, Grace Law, Joyce Low, Lim Xinli & Tan-Siew Wai Fun
Enhanced DNA Typing Kit for Degraded Samples (TEC)	Simon Lim & Tan-Siew Wai Fun
Validation of ABI Y-Filer Stutters for Crime Samples	June Tang, Dr Christopher Syn Kiu-Choong, Tan Koon Puay, Chin Sock Teng & Tan-Siew Wai Fun
Enhanced Extraction Strategies from Bone and Muscle Samples	June Tang, Dr Christopher Syn Kiu-Choong, Tai Hua Eng, Chin Sock Teng & Tan-Siew Wai Fun
Development of Drug Screening Using Time-Of-Flight LC/MS	Dr Lui Chi Pang, Dr Yao Yi Ju, Leong Hsiao Tung, Moy Hooi Yan, Koh Tian Hwee & Koh Saw Leng
Development of an Automated System for the Processing of Urine Specimens	Kuan Soo Yan, Dr Lui Chi Pang, Fathiyah B Abdul Latiff & Faridah Salleh
Impurity Profiling of Ketamine Abused in Singapore	Dr Angeline Yap Tiong Whei, Wendy Lim Jong Lee, Tan Ying Ying, Wong Yen Ling, Dr Lee Tong Kooi & A/Prof Tan Choon Hong

Forensic Science

TITLE OF RESEARCH PROJECT	PRINCIPAL INVESTIGATOR(S)
Application for Comprehensive Two Dimensional Gas Chromatography (GC x GC) in the Analysis of Complex Illicit Drugs	Dr Song Shin Miin, Mangudi, Dr Angeline Yap, Merula, Tiong Whei, Dr Lee Tong Kooi & Prof Philip Marriott

Analytical Science

TITLE OF RESEARCH PAPER	AUTHOR(S)	PROFESSIONAL PUBLICATION
Isolation and Identification of Thiohomosildenafil and Thiosildenafil in Health Supplements	Zou Peng, Hou Peiling, Sharon Oh Sze Yin, Chong Yi Mei, Prof Bosco Chen Bloodworth, Low Min Yong & Koh Hwee Ling	Journal of Pharmaceutical and Biomedical Analysis, 47:279-284, 2008
Identification of Benzamidenafil, a New Class of Phosphodiesterase-5 Inhibitor, as an Adulterant in a Dietary Supplement	Zou Peng, Hou Peiling, Sharon Oh Sze Yin, Ge Xiaowei, Prof Bosco Chen Bloodworth, Low Min Yong & Koh Hwee Ling	Journal of Pharmaceutical and Biomedical Analysis, 47:255-259, 2008
Detection of Dehydroepiandrosterone and Androsterone in a Traditional Chinese Herbal Product	Zou Peng, Chen Ping, Sharon Oh Sze Yin, Kiang Kin Har & Low Min Yong	Food Additives and Contaminants, 1-8, 2007
Liquid Chromatography Ion-Trap Time-Of-Flight Mass Spectrometric Study on the Fragmentation of an Acetildenafil Analogue	Zou Peng, Sharon Oh Sze Yin, Low Min Yong & Koh Hwee Ling	European Journal Of Mass Spectrometry, 13:233, 2007

TITLE OF RESEACH PRESENTATION	AUTHOR(S)	PROFESSIONAL EVENT
Migration of Toxic Contaminants from Canned Lacquers	Debbie Sun Cuilian	10th ASEAN Food Conference, Malaysia, 21 - 23 August 2007
Trace Determination of N-Nitrosamines in Beverages and Non-Fatty Food Using GC Tandem MS	Wendy Lee	13th Nordic Mass Spectrometry Conference, Savonlinna, Finland, 28 - 31 August 2007

Analytical Science

TITLE OF RESEACH PRESENTATION	AUTHOR(S)	PROFESSIONAL EVENT
Migration of Fungicides from Wooden Chopsticks Using Liquid Chromatography with Tandem Mass Spectrometry Detection Method	Angela Li	121st AOAC Annual Meeting & Exposition, Anaheim, California, USA, 16 - 20 September 2007
Quality Assurance Programme Based on ISO/IEC 17025 in Food and Drug Analysis - The Singapore Perspective	Joanne Chan Sheot Harn	2007 International Symposium on Quality Assurance in Food & Drug Analysis, Busan, South Korea, 24 October 2007
A Simultaneous Method for the Determination of Bisphenol A, Bisphenol F, Bisphenol A Diglycidyl Ether, and Bisphenol F Diglycidyl Ether and their Derivatives in Canned Foods by ESI-LC-MS/MS	Debbie Sun Cuilian	Singapore International Chemistry Conference 5, Singapore, 19 December 2007

TITLE OF RESEARCH PROJECT	PRINCIPAL INVESTIGATOR(S)
Survey of Slimming and Sexual Enhancement Products Available from Internet Purchase	Jessie Teo
Survey on Adulterants in Health Supplement Products	Yap Wee Kim & Lim Sin Yen
Migration of Photoinitators in UV-Inks from Food Packaging Materials into Food Using UPLC	Debbie Sun Cuilian, Yap Wee Kim, Yuen Kim Loong & Lim Ze Wei
Development of a Method for the Analysis of Polychlorinated Biphenyls in Food	Debbie Sun Cuilian, Wendy Lee, Lee Lin Min, Lim Thye Hin & Yuen Kim Loong
Development of Microcystins LR & RR in Spirulina	Li Fang Yan, Ang Lay Kheng & Yap Wee Kim
Heavy Metals in Lipsticks Available in Singapore. A Study Using ICPMS with the Aid of Acid Digestion.	Cheah Nuan Ping & Heeiah Gek Keow
Determination of Nitropropanol and Nitropropanoic Acid in Sugarcane Juices	Debbie Sun Cuilian, Joanne Chan Sheot Harn & Yap Wee Kim
Profiling of Contaminants in Collocalia Bird's Nest	Joanne Chan Sheot Harn, Lim Thye Hin, Yap Wee Kim, Tan-Chew Kim Kee & Lee Lin Min

Health Sciences Authority

Annual Financial Statements
Financial year ended 31 March 2008

Statement by the Health Sciences Authority	94
Independent auditors' report	95
Balance sheet	97
Income and expenditure statement	98
Statement of changes in equity	99
Cash flow statement	100
Notes to the financial statements	102

Health Sciences Authority

Statement by the Health Sciences Authority

In our opinion, the accompanying financial statements of the Health Sciences Authority (the Authority) as set out on pages 97 to 127 are drawn up so as to give a true and fair view of the state of affairs of the Authority as at 31 March 2008 and of the results, changes in equity and cash flows of the Authority for the financial year then ended.

On Behalf of the Authority

Professor Edison Liu
Chairman

Dr John Lim
Chief Executive Officer

Singapore
26 June 2008

Health Sciences Authority

Statement by the Health Sciences Authority

Independent Auditors' Report
To Health Sciences Authority

We have audited the accompanying financial statements of Health Sciences Authority (the "Authority") set out on pages 97 to 127, which comprise the balance sheet of the Authority as at 31 March 2008, the income and expenditure statement, the statement of changes in equity and cash flow statement of the Authority for the year then ended, and a summary of significant accounting policies and other explanatory notes.

Management's responsibility for the financial statements

The Authority's management are responsible for the preparation and fair presentation of these financial statements in accordance with the Health Sciences Authority Act (Cap. 122C, 2002 Revised Edition) (the "Act") and Statutory Board Financial Reporting Standards ("SB-FRS"). This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

Auditors' responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with the Singapore Standards on Auditing. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Health Sciences Authority

Statement by the Health Sciences Authority

Independent Auditors' Report
To Health Sciences Authority

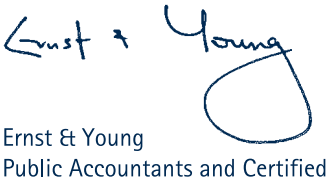
Opinion

In our opinion,

(i) the financial statements of the Authority are properly drawn up in accordance with the provisions of the Act and Statutory Board Financial Reporting Standards (SB-FRS) so as to give a true and fair view of the state of affairs of the Authority as at 31 March 2008 and the results, changes in equity and cash flows of the Authority for the year ended on that date; and

(ii) proper accounting and other records have been kept, including records of all assets of the Authority whether purchased, donated or otherwise.

During the course of our audit, nothing came to our notice that caused us to believe that the receipt, expenditure and investments of monies and the acquisition and disposal of assets by the Authority during the year have not been in accordance with the provisions of the Act.



Ernst & Young
Public Accountants and Certified Public Accountants

Singapore
26 June 2008

Health Sciences Authority

Balance Sheet as at 31 March 2008

	Note	2007/2008 $	2006/2007 $
Equity			
Capital account	3	58,663,419	54,268,001
Accumulated surplus		4,443,371	1,848,927
Total equity		63,106,790	56,116,928
Represented by:			
Non-current assets			
Property, plant and equipment	4	89,817,272	90,122,739
Intangibles	5	10,901,676	11,960,395
Current assets			
Cash and bank balances	6	26,887,099	25,939,882
Trade receivables	7	9,726,343	11,891,961
Grants receivables	8	1,307,590	592,176
Other receivables	9	66,928	67,968
Prepayments		527,924	989,612
Inventories	10	2,337,376	1,785,394
		40,853,260	41,266,993
Current liabilities			
Trade payables	11	(7,757,409)	(8,916,477)
Other payables and accruals	12	(10,163,998)	(7,915,708)
Licence fees collected in advance		(2,752,095)	(3,943,482)
Finance lease payable	13	(52,500)	(52,500)
Provision for pension benefits	14	(1,348,620)	(313,717)
Long-term loans	15	(2,512,690)	(2,512,690)
Advance from Ministry of Health	16	(2,250,000)	-
Grants received in advance:			
Government	17	(999,797)	(4,495,817)
Non-government	18	(180,102)	(254,895)
Deferred capital grants and donations	19	(5,043,131)	(7,009,413)
Contribution to consolidated fund payable		(287,011)	-
		(33,347,353)	(35,414,699)
Net current assets		7,505,907	5,852,294
Less: Non-current liabilities			
Deferred capital grants and donations	19	(15,192,903)	(19,222,025)
Licence fee collected in advance		(26,717)	(208,064)
Finance lease payable	13	(39,375)	(91,875)
Provision for pension benefits	14	(4,596,380)	(4,521,157)
Long-term loans	15	(25,262,690)	(27,775,379)
		(45,118,065)	(51,818,500)
Net assets		63,106,790	56,116,928

The accompanying accounting policies and explanatory notes form an integral part of the financial statements.

Health Sciences Authority

Income and Expenditure Statement for the financial year ended 31 March 2008

	Note	2007/2008 $	2006/2007 $
Income			
Laboratory analysis fees		22,315,752	21,608,234
Blood processing fees		20,779,436	19,130,730
Patient laboratory testing fees		2,265,667	1,847,548
Forensic investigation fees		8,622,248	7,354,449
Licensing fees		7,403,399	7,377,623
Professional service fees		362,719	1,093,648
Other income	20	1,469,863	1,648,596
		63,219,084	60,060,828
Expenditure			
Staff costs	21	46,400,729	40,935,000
Staff welfare and development		2,542,027	2,220,744
Supplies and services		19,750,291	16,454,761
Rental of premises and equipment		2,407,961	2,425,875
Blood donor expenses		4,046,290	3,436,338
Repairs and maintenance		9,156,182	6,233,006
Depreciation of property, plant and equipment	4	6,050,434	6,079,647
Amortisation of intangible	5	5,029,777	4,356,824
Professional services		4,563,313	3,101,413
Utilities		1,497,646	1,196,097
Transport, postages and communications		1,570,529	1,233,290
Publicity and public relations		154,794	178,557
Finance costs	22	1,126,329	1,214,068
Other operating expenses	23	2,459,028	1,957,027
		106,755,330	91,022,647
Deficit before grants		(43,536,246)	(30,961,819)
Grants			
Government grants	17	38,884,930	27,682,539
Non-government grants	18	472,275	177,090
Deferred capital grants amortised	19	7,060,496	6,765,079
		46,417,701	34,624,708
Surplus before statutory contribution to consolidated fund		2,881,455	3,662,889
Statutory contribution to consolidated fund	24	287,011	-
Surplus for the year		2,594,444	3,662,889

The accompanying accounting policies and explanatory notes form an integral part of the financial statements.

Health Sciences Authority

Statement of Changes in Equity for the financial year ended 31 March 2008

	Note	Capital account $	Accumulated surplus/ (deficit) $	Total $
Balance as at 31 March 2006		51,115,079	(1,813,962)	49,301,117
Issue of shares to Minister for Finance	3	3,152,922	-	3,152,922
Surplus for the year		-	3,662,889	3,662,889
Balance as at 31 March 2007		54,268,001	1,848,927	56,116,928
Issue of shares to Minister for Finance	3	4,395,418	-	4,395,418
Surplus for the year		-	2,594,444	2,594,444
Balance as at 31 March 2008		58,663,419	4,443,371	63,106,790

The accompanying accounting policies and explanatory notes form an integral part of the financial statements.

Health Sciences Authority

Cash Flow Statement for the year ended 31 March 2008

	Note	2007/2008 $	2006/2007 $
Cash flows from operating activities:			
Deficit before grants		(43,536,246)	(30,961,819)
Adjustments for:			
Depreciation of property, plant and equipment	4	6,050,434	6,079,647
Amortisation of intangibles	5	5,029,777	4,356,824
Interest income	20	(412,063)	(625,865)
Interest expense	22	1,126,329	1,214,068
Loss on disposal of property, plant and equipment	23	229,001	24,657
Loss on disposal of intangibles	23	131,339	178
Allowance for doubtful trade receivables	23	1,838	10,381
Write-off of inventories	23	44,006	9,862
Deficit before working capital changes		(31,335,585)	(19,892,067)
Operating cash flows before working capital changes:			
Decrease/(increase) in trade receivables		2,163,780	(4,593,832)
Decrease in other receivables		1,040	2,105,961
Decrease/(increase) in prepayments		461,688	(460,863)
Increase in inventories		(595,988)	(170,654)
(Decrease)/increase in trade payables		(1,159,068)	5,413,123
Increase/(decrease) in other payables and accruals		2,248,290	(813,850)
Increase/(decrease) in provision for pension benefits		1,110,126	(189,558)
(Decrease)/increase in licence fee received in advance		(1,372,734)	440,819
Net cash used in operating activities		(28,478,451)	(18,160,921)
Cash flows from investing activities:			
Proceeds from disposal of property, plant and equipment		232,430	2,092
Purchase of property, plant and equipment		(6,206,398)	(4,375,332)
Purchase of intangible		(4,102,397)	(3,043,600)
Interest received		412,063	625,865
Net cash used in investing activities		(9,664,302)	(6,790,975)

Health Sciences Authority

Cash Flow Statement for the year ended 31 March 2008

	Note	2007/2008 $	2006/2007 $
Cash flows from financing activities:			
Proceeds from issue of shares to Minister for Finance	3	4,395,418	3,152,922
Repayment of interest-bearing loan		(2,512,689)	(2,512,690)
Interest paid		(1,126,329)	(1,214,068)
Finance lease repayment		(52,500)	(52,500)
Advance from Ministry of Health	16	2,250,000	-
Government grants received	17	36,005,316	25,451,176
Non-government grants and donations received	18	130,754	505,267
Donated asset	19	-	245,243
Net cash from financing activities		39,089,970	25,575,350
Net increase in cash and cash equivalents		947,217	623,454
Cash and cash equivalents at beginning of the year		25,939,882	25,316,428
Cash and cash equivalents at end of the year		26,887,099	25,939,882

The accompanying accounting policies and explanatory notes form an integral part of the financial statements.

Health Sciences Authority

Notes to the Financial Statements – 31 March 2008

1. General

The Health Sciences Authority (the "Authority") is a statutory board established in the Republic of Singapore under the Health Sciences Authority Act 2001 on 1 April 2001 under the purview of the Ministry of Health ("MOH"). As a statutory board, the Authority is subject to the directions of MOH and is required to follow policies and instructions issued from time to time by its supervising ministry and other government ministries and departments such as the Ministry of Finance ("MOF").

The address and principal place of business of the Authority is 11 Outram Road, Singapore 169078. The principal activities of the Authority are:

(a) to regulate the import, manufacture, sale, disposal, transport, storage, possession and use of cosmetics, medicines, medical devices and other health-related products and tobacco products;

(b) to conduct technological assessments of medicines, cosmetics, medical devices and other health-related products for the purpose of determining their efficacy, safety and suitability for consumption and use in Singapore and to advise the Government thereon;

(c) to collect and co-ordinate the collection of blood from donors and to test, process and distribute such blood and the related products for the purpose of building and maintaining a safe and adequate national blood supply;

(d) to provide professional, investigative and analytical services in health sciences to the Government and to any other person or body (whether in Singapore or elsewhere);

(e) to conduct or engage any other person to conduct research in health sciences, and generally to promote the development of health sciences; and

(f) to act internationally as the national authority or representative of Singapore in respect of matters related to health sciences.

With effect from 1 July 2007, the Centre for Radiation Protection under the Authority whose principal activities is to regulate the safe use of ionising and non-ionising radiation of irradiating apparatus and radioactive materials was transferred to the National Environment Agency. This is pursuant to the Radiation Protection Act 2007 passed by Parliament on 21 May 2007 and assented to by the President on 1 June 2007. Accordingly the Authority no longer performs the activities of regulating the safe use of ionising and non-ionising radiation of irradiating apparatus and radioactive materials.

Apart from the above, there have been no significant changes in the nature of these activities during the financial year.

2. Significant accounting policies

2.1 Basis of preparation

The financial statements of the Authority for the financial year ended 31 March 2008, have been drawn up in accordance with the provisions of the Health Sciences Authority Act (the "Act") (Chapter 122C, 2002 Revised Edition) and the Statutory Board Financial Reporting Standards ("SB-FRS").

The financial statements have been prepared on a historical cost basis except as disclosed in the accounting policies below.

The financial statements are presented in Singapore Dollars (SGD or $).

The financial statements of the Authority were prepared in accordance with the Singapore Financial Reporting Standards in the previous year. The adoption of SB-FRS for the financial year ended 31 March 2008 did not result in substantial changes to the Authority's accounting policies and did not have any significant impact on the Authority except for SB-FRS 24 – Related Party Transactions, which allows the Authority not to disclose transactions and balances with other state-controlled entities. The Authority has decided not to make such disclosures.

2.2 SB-FRS and INT SB-FRS not yet effective

The Authority has not applied the following SB-FRS and INT SB-FRS that have been issued but not yet effective:

No.		Title	Effective date (annual periods beginning on or after)
SB-FRS 1	:	Amendment to FRS 1 (revised), Presentation of Financial Statements (Revised Presentation)	1 January 2009
SB-FRS 108	:	Operating Segments	1 January 2009
INT SB-FRS 112	:	Service Concession Arrangements	1 January 2008
INT SB-FRS 113	:	Customer Loyalty Programmes	1 July 2008
INT SB-FRS 114	:	The limit on a defined benefit asset minimum funding requirement and their interaction.	1 January 2008

The Authority expects that the adoption of the above pronouncements will not have a significant impact on the financial statements in the period of initial application.

2. Significant accounting policies (cont'd)

2.3 Significant accounting estimates and judgements

Estimates, assumptions concerning the future and judgements are made in the preparation of the financial statements. They affect the application of the Authority's accounting policies, reported amounts of assets, liabilities, income and expenses, and disclosures made. They are assessed on an on-going basis and are based on experience and relevant factors, including expectations of future events that are believed to be reasonable under the circumstances.

(a) **Key sources of estimation uncertainty**

The key assumptions concerning the future and other key sources of estimation uncertainty at the balance sheet date, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below.

Property, plant and equipment and intangibles

The cost of property, plant and equipment and intangibles for the operations of the Authority is depreciated and amortised on a straight-line basis over the useful lives. Management estimates the useful lives of these property, plant and equipment and intangibles to be within 3 to 60 years and within 3 to 5 years respectively. These are common life expectancies applied to these property, plant and equipment and intangibles. The carrying amount of the Authority's property, plant and equipment and intangibles at 31 March 2008 was $89,817,272 (2006: $90,122,739) and $10,901,676 (2006: $11,960,395) respectively. Changes in the expected level of usage and technological developments could impact the economic useful lives and the residual values of these assets, therefore future depreciation and amortisation charges could be revised.

Provision for pension benefits

The cost of defined benefit pension plans is determined using actuarial valuation. The actuarial valuation involved making assumptions about discount rates, future salary increases and mortality rates. Due to the long term nature of these plans, such estimates are subject to significant uncertainty. The net provision for pension benefits as at 31 March 2008 was $5,945,000 (2006: $4,834,875). Further details are given in Note 2.16b.

(b) **Critical judgements made in applying accounting policies**

The judgement made by management in the process of applying the Authority's accounting policies that have the most significant effect on the amounts recognised in the financial statements is discussed below.

Impairment of financial assets

The Authority follows the guidance of SB-FRS 39 on determining when a financial asset is impaired. This determination requires significant judgement. The Authority evaluates, among other factors, the duration and extent to which the fair value of a financial asset is less than its cost; and the financial health of and near-term business outlook for the financial asset, including factors such as industry performance, changes in technology and operational and financing cash flow.

2. Significant accounting policies (cont'd)

2.4 Functional and foreign currency

Foreign currency transactions

Transactions in foreign currencies are measured in SGD, the functional currency of the Authority and are recorded on initial recognition in SGD at exchange rates approximating those ruling at the transaction dates. Monetary assets and liabilities denominated in foreign currencies are translated at the closing rate of exchange ruling at the balance sheet date. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates as at the dates of the initial transactions.

Exchange differences arising on the settlement of monetary items or on translating monetary items at the balance sheet date are recognised in the income and expenditure statement.

2.5 Property, plant and equipment

All items of property, plant and equipment are initially recorded at cost. Subsequent to recognition, property, plant and equipment are stated at cost less accumulated depreciation and accumulated impairment loss.

The initial cost of fixed assets comprises its purchase price, including import duties and non-refundable purchase taxes and any directly attributable costs of bringing the asset to its working condition and location for its intended use. Expenditure incurred after the fixed assets have been put into operation, such as repairs and maintenance, is normally charged to the income and expenditure statement in the period in which the costs are incurred. In situations where it can be clearly demonstrated that the expenditure has resulted in an increase in the future economic benefits expected to be obtained from the use of an item of fixed assets beyond its originally assessed standard of performance, the expenditure is capitalised as an additional cost of fixed asset.

In general, plant and equipment costing less than $2,000 each, are charged to the income and expenditure statement in the year of purchase.

Depreciation of an asset begins when it is available for use and is computed on a straight-line basis over the estimated useful life of the assets as follows:

Leasehold land and building	–	60 years (based on lease period)
Building improvements	–	20 years (based on useful life of asset)
Computer hardware	–	3 to 5 years
Motor vehicles	–	10 years
Scientific and medical equipment	–	5 years
Other equipment, furniture and fittings	–	5 to 10 years

Assets classified as work-in-progress included in plant and equipment are not depreciated as these assets are not available for use.

The carrying values of property, plant and equipment are reviewed for impairment when events or changes in circumstances indicate that the carrying value may not be recoverable.

The residual value, useful life and depreciation method are reviewed at each financial year-end to ensure that the amount, method and period of depreciation are consistent with previous estimates and the expected pattern of consumption of the future economic benefits embodied in the items of property, plant and equipment.

2. Significant accounting policies (cont'd)

2.5 Property, plant and equipment (cont'd)

An item of property, plant and equipment is derecognised upon disposal or when no future economic benefits are expected from its use or disposal. Any gain or loss arising on derecognition of the asset is included in the income and expenditure statement in the year the asset is derecognised.

Fully depreciated assets still in use are retained in the financial statements.

2.6 Intangibles

Intangible assets acquired, which comprise of computer software development costs, are measured on initial recognition at cost. Following initial recognition, intangible assets are carried at cost less any accumulated amortisation and any accumulated impairment losses.

Amortisation of intangibles is calculated on the straight-line method to write-off the costs over their estimated useful lives of 3 to 5 years. The amortisation expense on intangible assets is recognised in the income and expenditure statement through the 'amortisation of intangible assets' line item.

The carrying value of intangibles is reviewed for impairment when events or changes in circumstances indicate that the carrying value may not be recoverable.

2.7 Impairment of non-financial assets

The Authority assesses at each reporting date whether there is an indication that an asset may be impaired. If any such indication exists, or when annual impairment testing for an asset is required, the Authority makes an estimate of the asset's recoverable amount.

An asset's recoverable amount is the higher of an asset's or cash-generating unit's fair value less costs to sell and its value in use and is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. Where the carrying amount of an asset exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. Impairment losses of continuing operations are recognised in the income and expenditure statement as 'other operating expenses'.

An assessment is made at each reporting date as to whether there is any indication that previously recognised impairment losses recognised for an asset may no longer exist or may have decreased. If such indication exists, the recoverable amount is estimated. A previously recognised impairment loss is reversed only if there has been a change in the estimates used to determine the asset's recoverable amount since the last impairment loss was recognised. If that is the case, the carrying amount of the asset is increased to its recoverable amount. That increased amount cannot exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognised for the asset in prior years. Reversal of an impairment loss is recognised in the income and expenditure statement.

2. Significant accounting policies (cont'd)

2.8 Financial assets

Financial assets are recognised on the balance sheet when, and only when, the Authority becomes a party to the contractual provisions of the financial instrument.

Non-derivative financial assets with fixed or determinable payments that are not quoted in an active market are classified as loans and receivables. Such assets are initially recognised at fair value, plus directly attributable transaction costs and subsequently carried at amortised cost using the effective interest method. Gains and losses are recognised in the income and expenditure statement when the loans and receivables are derecognised or impaired, as well as through the amortisation process.

The Authority classifies the following financial assets as loans and receivables:

- Cash and short term deposits
- Trade, grants and other receivables.

2.9 Cash and cash equivalents

Cash and cash equivalents comprise cash on hand and deposits held with banks, that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value.

Cash and short term deposits carried in the balance sheet are classified and accounted for as loans and receivables under SB-FRS 39. The accounting policy is stated in Note 2.8.

2.10 Trade and other receivables

Trade and other receivables, including amounts due from related parties, are classified and accounted for as loans and receivables under SB-FRS 39. The accounting policy for this category of financial assets is stated in Note 2.8.

An allowance is made for uncollectible amounts when there is an objective evidence that the Authority will not be able to collect the debt. Bad debts are written off when identified. Further details on the accounting policy for impairment of financial assets are stated in Note 2.12 below.

2.11 Inventories

Inventories are stated at the lower of cost (first-in first-out method) and net realisable value. Cost includes all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition.

2. Significant accounting policies (cont'd)

2.12 Impairment of financial assets

The Authority assesses at each balance sheet date whether there is any objective evidence that a financial asset or a group of financial assets is impaired.

Assets carried at amortised cost

If there is objective evidence that an impairment loss on financial assets carried at amortised cost has been incurred, the amount of the loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows discounted at the financial asset's original effective interest rate (i.e. the effective interest rate computed at initial recognition). The carrying amount of the asset is reduced through the use of an allowance account. The amount of the loss is recognised in the income and expenditure statement.

When the asset becomes uncollectible, the carrying amount of impaired financial assets is reduced directly or if an amount was charged to the allowance account, the amounts charged to the allowance account are written off against the carrying value of the financial asset.

To determine whether there is objective evidence that an impairment loss on financial assets has been incurred, the Authority considers factors such as the probability of insolvency or significant financial difficulties of the debtor and default or significant delay in payments.

If, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognised, the previously recognised impairment loss is reversed. Any subsequent reversal of an impairment loss is recognised in the income and expenditure statement, to the extent that the carrying value of the asset does not exceed its amortised cost at the reversal date.

2.13 Derecognition of financial assets

A financial asset is derecognised where the contractual rights to receive cash flows from the asset have expired.

On derecognition of a financial asset, the difference between the carrying amount and the sum of the consideration received is recognised in the income and expenditure statement.

2.14 Financial liabilities

Financial liabilities include trade payables, other payables and accruals, which are normally settled on 30 day terms, and loans payable and advance from Ministry of Health. Financial liabilities are recognised on the balance sheet when, and only when, the Authority becomes a party to the contractual provisions of the financial instrument. Financial liabilities are initially recognised at fair value of consideration received less directly attributable transaction costs and subsequently measured at amortised cost using the effective interest method.

Gains and losses are recognised in the income and expenditure statement when the liabilities are derecognised as well as through the amortisation process. The liabilities are derecognised when the obligation under the liability is discharged or cancelled or expired.

2. Significant accounting policies (cont'd)

2.15 Provisions

Provisions are recognised when the Authority has a present obligation (legal or constructive) where, as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation.

Provisions are reviewed at each balance sheet date and adjusted to reflect the current best estimate. If it is no longer probable that an outflow of resources embodying benefits will be required to settle the obligation, the provision is reversed. If the effect of the time value of money is material, provisions are discounted using a current pre-tax rate that reflects, where appropriate, the risks specific to the liability. When discounting is used, the increase in the provision due to the passage of time is recognised as a finance cost.

2.16 Employee benefits

(a) Defined contribution plans

The Authority makes contributions to the Central Provident Fund scheme in Singapore, a defined contribution pension scheme. These contributions are recognised as an expense in the period in which the related service is performed.

(b) Defined benefit pension plan

The Authority operates unfunded defined benefit schemes for certain employees under the provisions of the Pension Act (Chapter 225).

Following the Civil Service Pension Fund's (CSPF) decision to decentralise the management of the Government Pension Fund, the Authority assumed the responsibility of managing the pension entitlements of certain officers from 1 April 2001. These officers are those who did not opt for the CPF scheme launched in 1955 and continued to be entitled to pension benefits under the CSPF scheme.

Upon retirement, the pension entitlements of these officers will be met by both CSPF and the Authority in proportion to their length of service before and after the establishment of the Authority on 1 April 2001. Accordingly, pension payable to pensionable officers prior to 1 April 2001 are excluded in arriving at the Authority's pension liabilities.

Retirement benefits for these employees are assessed using the projected unit credit actuarial valuation method. The cost of providing for retirement benefits is charged to the income and expenditure statement so as to spread the regular cost over the service lives of employees in accordance with the actuarial valuation carried out during the year. The provision for retirement benefit is measured as the present value of the estimated future cash outflows by reference to the interest rates of Singapore Government Bond, which have terms to maturity approximating the terms of the related liability. Actuarial gains and losses are recognised in the year these gains and losses arise. Such benefits are unfunded. The expenses relating to pension are included as part of staff costs.

(c) Employee leave entitlement

Employee entitlements to annual leave are recognised when they accrue to employees. A provision is made for the estimated liability for annual leave and long-service leave as a result of services rendered by employees up to the balance sheet date.

2. Significant accounting policies (cont'd)

2.17 Borrowing costs

Borrowing costs are generally expensed as incurred. Borrowing costs are capitalised if they are directly attributable to the acquisition, construction or production of a qualifying asset. Capitalisation of borrowing costs commences when the activities to prepare the asset for its intended use or sale are in progress and the expenditures and borrowing costs are being incurred. Borrowing costs are capitalised until the assets are ready for their intended use.

2.18 Leases

(a) As lessee

Finance leases, which transfer to the Authority substantially all the risks and rewards incidental to ownership of the leased item, are capitalised at the inception of the lease at the fair value of the leased asset or, if lower, at the present value of the minimum lease payments. Any initial direct costs are also added to the amount capitalised. Lease payments are apportioned between the finance charges and reduction of the lease liability so as to achieve a constant rate of interest on the remaining balance of the liability. Finance charges are charged to the income and expenditure statement.

Capitalised leased assets are depreciated over the shorter of the estimated useful life of the asset and the lease term, if there is no reasonable certainty that the Authority will obtain ownership by the end of the lease term.

Operating lease payments are recognised as an expense in the income and expenditure statement on a straight-line basis over the lease term. The aggregate benefit of incentives provided by the lessor is recognised as a reduction of rental expense over the lease term on a straight-line basis.

(b) As lessor

Leases where the Authority retains substantially all the risks and rewards of ownership of the asset are classified as operating leases. Initial direct costs incurred in negotiating an operating lease are added to the carrying amount of the leased asset and recognised over the lease term on the same bases as rental income. The accounting policy for rental income is set out in Note 2.19(f).

2. Significant accounting policies (cont'd)

2.19 Income recognition

Revenue is recognised to the extent that it is probable that the economic benefits will flow to the Authority and the revenue can be reliably measured. The following criteria must also be met before revenue is recognised:

(a) Income from the rendering of services that are of a short duration, such as laboratory analysis fees, patient laboratory testing fees, forensic investigating fees and professional services fees are recognised when the services are completed.

(b) Income from blood processing fees are recognised when the processed blood products are used by the hospitals.

(c) Licence fees income are recognised on an accrual basis over the licence period.

(d) Fines and forfeitures are recognised on an accrual basis.

(e) Interest income is accrued on a time proportionate basis, by reference to principal outstanding and at the interest rates applicable, on an effective yield basis.

(f) Rental income is accounted for on a straight-line basis over the lease terms. The aggregate costs of incentives provided to lessees are recognised as a reduction of rental income over the lease term on a straight-line basis.

2.20 Statutory contribution to consolidated fund

In lieu of income tax, the Authority is required to make contribution to the Consolidated Fund based on the net surplus of the Authority (before donations) for the financial year adjusted for any accumulated deficits carried forward from the years that the Authority was under the contribution framework. The contribution rate used to compute the amount is pegged to the prevailing corporate tax rate that have been enacted or substantively enacted by the balance sheet date.

2.21 Sales tax

Revenues, expenses and assets are recognised net of the amount of sales tax except:

- Where the sales tax incurred on a purchase of assets or services is not recoverable from the taxation authority, in which case the sales tax is recognised as part of the cost of acquisition of the asset or as part of the expense item as applicable; and

- Receivables and payables that are stated with the amount of sales tax included.

The net amount of sales tax recoverable from, or payable to, the taxation authority is included as part of receivables or payables in the balance sheet.

2. Significant accounting policies (cont'd)

2.22 Grants

Government grants receivable are recognised at their fair value where there is reasonable assurance that the grant will be received and all attaching conditions will be complied with.

Government grants to meet the current year's operating expenses are recognised as income in the financial year in which the operating expenses are incurred.

Government grants and contributions from other organisations utilised for the purchase/construction of depreciable assets are taken to the deferred capital grants account.

Deferred capital grants are recognised in the income and expenditure statement over the period necessary to match the depreciation of the assets purchased with the related grants. Upon disposal of property, plant and equipment, the balance of the related deferred capital grants is recognised in the income and expenditure statement to match the net book value of the assets written-off.

2.23 Capital

Proceeds from issuance of shares are recognised as capital in equity.

2.24 Contingencies

A contingent liability or asset is a possible obligation or asset that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of uncertain future event(s) not wholly within the control of the Authority.

Contingent liabilities and assets are not recognised on the balance sheet of the Authority.

3. Capital account

	Number of shares			
	2007/2008	2006/2007	2007/2008 $	2006/2007 $
Issued and paid up:				
At 1 April	54,268,001	51,115,079	54,268,001	51,115,079
Issued during the year	4,395,418	3,152,922	4,395,418	3,152,922
At 31 March	58,663,419	54,268,001	58,663,419	54,268,001

The capital account consists of shares issued to the Minister for Finance as part of the debt-equity financing framework under Finance Circular Minute No. M8/2007.

The leasehold land and building and other operating assets were transferred at net book value to the Authority when it was formed. The values of these assets were settled by interest-bearing loans and the remaining by way of equity injection from the Minister for Finance.

4. Property, plant and equipment

	Leasehold land and building $	Building improvements $	Computers $	Motor vehicles $	Scientific and medical equipment $	Other equipment, furniture and fittings $	Work-in progress $	Total $
Cost:								
At 1 April 2007	67,211,028	11,957,815	2,442,546	116,106	22,894,119	10,154,840	208,989	114,985,443
Additions	-	-	31,122	50,581	4,223,464	244,313	1,656,918	6,206,398
Disposals	-	-	(107,351)	-	(1,805,016)	(99,741)	-	(2,012,108)
Transfer from work-in-progress	-	-	213,914	-	202,202	1,024,542	(1,440,658)	-
At 31 March 2008	67,211,028	11,957,815	2,580,231	166,687	25,514,769	11,323,954	425,249	119,179,733
Accumulated depreciation:								
At 1 April 2007	2,333,716	1,816,431	2,196,366	92,339	15,062,752	3,361,100	-	24,862,704
Depreciation for the year	1,120,184	597,844	164,294	6,911	3,080,929	1,080,272	-	6,050,434
Disposals	-	-	(103,077)	-	(1,362,653)	(84,947)	-	(1,550,677)
At 31 March 2008	3,453,900	2,414,275	2,257,583	99,250	16,781,028	4,356,425	-	29,362,461
Carrying amount:								
At 31 March 2008	63,757,128	9,543,540	322,648	67,437	8,733,741	6,967,529	425,249	89,817,272
At 1 April 2007	64,877,312	10,141,384	246,180	23,767	7,831,367	6,793,740	208,989	90,122,739

The carrying amount of scientific and medical equipment held under finance leases as at 31 March 2008 was $112,000 (2007: $154,000).

4. Property, plant and equipments (cont'd)

	Leasehold land and building	Building improvements	Computers	Motor vehicles	Scientific and medical equipment	Other equipment, furniture and fittings	Work-in progress	Total
	$	$	$	$	$	$	$	$
Cost:								
At 1 April 2006	68,138,028	11,561,551	2,820,130	116,106	21,684,787	7,643,093	489,641	112,453,336
Additions	-	-	132,693	-	1,836,585	185,317	2,220,737	4,375,332
Disposals	-	-	(510,277)	-	(1,257,958)	(74,990)	-	(1,843,225)
Transfer from work-in-progress	-	658,940	-	-	630,705	1,211,744	(2,501,389)	-
Reclassification	(927,000)	(262,676)	-	-	-	1,189,676	-	-
At 31 March 2007	67,211,028	11,957,815	2,442,546	116,106	22,894,119	10,154,840	208,989	114,985,443
Accumulated depreciation:								
At 1 April 2006	1,267,403	1,247,250	2,485,820	86,270	13,273,848	2,238,942	-	20,599,533
Depreciation for the year	1,083,050	592,165	220,823	6,069	3,040,927	1,136,613	-	6,079,647
Disposals	-	-	(510,277)	-	(1,252,023)	(54,176)	-	(1,816,476)
Reclassification	(16,737)	(22,984)	-	-	-	39,721	-	-
At 31 March 2007	2,333,716	1,816,431	2,196,366	92,339	15,062,752	3,361,100	-	24,862,704
Carrying amount:								
At 31 March 2007	64,877,312	10,141,384	246,180	23,767	7,831,367	6,793,740	208,989	90,122,739
At 1 April 2006	66,870,625	10,314,301	334,310	29,836	8,410,939	5,404,151	489,641	91,853,803

Health Sciences Authority

Notes to the Financial Statements – 31 March 2008

5. Intangibles

	Computer software $	Work-in progress $	Total $
Cost:			
At 1 April 2006	20,471,178	2,295,161	22,766,339
Additions	124,476	2,919,124	3,043,600
Disposals	(118,867)	-	(118,867)
Transfer from work-in-progress	4,396,320	(4,396,320)	-
At 1 April 2007	24,873,107	817,965	25,691,072
Additions	398,486	3,703,911	4,102,397
Disposals	(403,627)	-	(403,627)
Transfer from work-in-progress	1,831,659	(1,831,659)	-
At 31 March 2008	26,699,625	2,690,217	29,389,842
Accumulated amortisation:			
At 1 April 2006	9,492,542	-	9,492,542
Amortisation for the year	4,356,824	-	4,356,824
Disposals	(118,689)	-	(118,689)
At 1 April 2007	13,730,677	-	13,730,677
Amortisation for the year	5,029,777	-	5,029,777
Disposals	(272,288)	-	(272,288)
At 31 March 2008	18,488,166	-	18,488,166
Carrying amount:			
At 31 March 2008	8,211,459	2,690,217	10,901,676
At 1 April 2007	11,142,430	817,965	11,960,395

6. Cash and cash equivalents

For the purpose of the cash flow statement, cash and cash equivalents comprise the following as at 31 March:

	2007/2008 $	2006/2007 $
Cash at banks and in hand	4,778,924	20,503,924
Fixed deposits (unsecured)	22,108,175	5,435,958
	26,887,099	25,939,882

Cash at banks earns interest at floating rates based on daily bank deposit rates of 0.10% (2006/2007: 0.19%). Fixed deposits are made for varying periods of between one day and three months depending on the immediate cash requirements of the Authority, and earn interests at the respective short-term deposit rates ranging from 1.10% to 2.74% per annum (2006/2007: 2.66% to 3.50%) per annum.

7. Trade receivables

	2007/2008 $	2006/2007 $
Trade receivables	9,738,562	11,902,342
Allowance for doubtful receivables	(12,219)	(10,381)
	9,726,343	11,891,961

Trade receivables

Trade receivables are non-interest bearing and are generally on 14 to 30 days' terms. They are recognised at their original invoice amounts which represent their fair values on initial recognition.

Allowance for doubtful receivables

For the year ended 31 March 2008, an impairment loss of $1,838 (2006/2007: $10,381) was recognised in the income and expenditure statement subsequent to a debt recovery assessment performed on trade receivables.

8. Grants receivables

	2007/2008 $	2006/2007 $
Grants receivable - Government (Note 17)	1,028,182	592,176
Grants receivable - Non-government (Note 18)	279,408	-
	1,307,590	592,176

9. Other receivables

	2007/2008 $	2006/2007 $
Other receivables	41,698	40,020
Advances to staff	25,230	27,948
	66,928	67,968

Advances to staff are festive advances which are interest-free and unsecured. The amounts are repayable over 2 months via deductions from the staff salaries.

10. Inventories

	2007/2008 $	2006/2007 $
Gases, laboratory and medical supplies, at lower of cost and net realisable value	2,337,376	1,785,394

During the financial year, the Authority wrote-down $44,006 (2006/2007: $9,862) of inventories which are recognised as expense in the income and expenditure statement.

11. Trade payables

Trade payables are non-interest bearing and are normally settled on 30-day terms.

12. Other payables and accruals

	2007/2008 $	2006/2007 $
Advances from customers	28,705	66,465
Accrued employees' benefits	5,215,581	4,586,305
GST payable	21,002	418,112
Refundable security deposits	23,375	68,258
Accrued operating expenses	4,875,335	2,776,568
	10,163,998	7,915,708

13. Finance lease payable

The Authority has finance lease for a science and medical equipment, which expires in 23 December 2009. There are no restrictions placed upon the Authority by entering into these leases. The average discount rate implicit in the leases is 6.52% (2006/2007: 6.52%) per annum.

Future minimum lease payments under finance leases together with the present value of the net minimum lease payments are as follows:

	Minimum lease payments 2007/2008 $	Present value of payments 2007/2008 $	Minimum lease payments 2006/2007 $	Present value of payments 2006/2007 $
Not later than one year	59,790	52,500	59,790	52,500
Later than one year but not later than five years	44,843	39,375	104,633	91,875
Total minimum lease payments	104,633	91,875	164,423	144,375
Less: Amounts representing finance charges	(12,758)	-	(20,048)	-
Present value of minimum lease payments	91,875	91,875	144,375	144,375

14. Provision for pension benefits

The Authority operates an unfunded defined retirement benefit plan for certain employees under the provisions of the Pension Act (Chapter 225). Benefits are payable based on the last drawn salaries of the respective employees and the employees' cumulative service period served with the Authority at the time of retirement.

Movement in the liability recognised in the balance sheet

	2007/2008 $	2006/2007 $
Balance at the beginning of financial year	4,834,875	5,024,432
Expense for the year (Note 21)	1,634,031	1,296,450
Retirement benefits paid	(523,906)	(1,486,007)
Balance at the end of financial year	5,945,000	4,834,875
Represented by:		
- Current	1,348,620	313,717
- Non-current	4,596,380	4,521,157
	5,945,000	4,834,874

The amounts recognised in the income and expenditure statement are as follows:

Current service cost	688,000	952,253
Interest cost	151,000	103,463
Additional provision for the year	-	240,734
Actuarial losses for the year	795,031	-
Total expenses included in staff costs (Note 21)	1,634,031	1,296,450

The principal assumptions used in determining the Authority's pension obligations are as follows:

(a) All pensioners under the pension scheme will retire at the exact age of 62 and opt for fully commuted gratuity on retirement.

(b) The discount rate of the pension fund is 3.0% (2006:/2007: 3.0%) per annum.

(c) The expected rate of salary increases is at 3.0% per annum (2006/2007: average rate of 2.4% per annum depending on the pensionable officer's position and rank).

(d) In the prior year, a provision of $240,734 was made for 3 eligible officers who exercised the option to return to the pension scheme as offered by the government.

Pension payable to pensionable officers prior to the establishment of the Authority on 1 April 2001 will be borne by Ministry of Health and is excluded from the amount stated above.

15. Long-term loans

	Interest rate (p.a.)	Maturity	2007/2008 $	2006/2007 $
Loans from Ministry of Finance				
– 15 years	3.86%	2020	24,570,000	25,480,000
– 5 years	3.46%	2010	3,205,380	4,808,069
			27,775,380	30,288,069

Represented by amounts payable as follows:

	2007/2008 $	2006/2007 $
Current	2,512,690	2,512,690
Non-current	25,262,690	27,775,379
Total	27,775,380	30,288,069

On 23 March 2005, the Ministry of Finance granted the Authority a loan facility of $27,300,000 for 15 years to finance the purchase of land and building and a loan facility of $8,013,449 for 5 years to finance the purchase of operating assets that were transferred from Ministry of Health as at 31 March 2005.

These loans are unsecured and repayable in equal instalments from the date of the first drawdown of the loan on 31 March 2005 over the loan period.

The interest rates per annum were fixed at the commencement of the loan, at a premium of 0.9% and 0.5% to finance the purchase of land and building and to finance the purchase of operating assets respectively, determined by the Ministry of Finance above the Daily Average 10-year Singapore Government Securities Yield.

16. Advance from Ministry of Health

During the year, the Ministry of Health granted the Authority an advance of $2,250,000 for the payment of the Authority's return on equity to the Ministry of Finance. This advance is interest free and unsecured.

17. Grants receivable/(received in advance) – Government

	2007/2008 $	2006/2007 $
Balance at the beginning of financial year	3,903,641	8,430,914
Receipts during the year	36,005,316	25,451,176
Amount transferred to deferred capital grants and donations (Note 19)	(1,052,412)	(2,295,910)
Amount transferred to income and expenditure statement	(38,884,930)	(27,682,539)
Balance at the end of financial year	(28,385)	3,903,641
Comprise of:		
Grants receivable (Note 8)	1,028,182	592,176
Grants received in advance	(999,797)	(4,495,817)

Grants are received mainly from Ministry of Health and under other Ministry of Finance specific programmes. These grants are for the development and purchase of depreciable assets for the Authority.

Grants transferred to deferred capital grants and donations comprise primarily of amounts incurred for purchase of depreciable assets and assets under construction-in-progress.

18. Grants receivable/(received in advance) – Non-government

	2007/2008 $	2006/2007 $
Balance at the beginning of financial year	254,895	(34,509)
Receipts during the year	130,754	505,267
Amount transferred to deferred capital grants and donations (Note 19)	(12,680)	(38,773)
Amount transferred to income and expenditure statement	(472,275)	(177,090)
Balance at the end of financial year	(99,306)	254,895
Comprise of:		
Grants receivable (Note 8)	279,408	-
Grants received in advance	(180,102)	(254,895)

Grants are received mainly from other agencies to finance specific programmes of the Authority.

19. Deferred capital grants and donations

	2007/2008 $	2006/2007 $
Balance at the beginning of financial year	26,231,438	30,416,591
Amount transferred from grants received in advance		
- Government (Note 17)	1,052,412	2,295,910
- Non-government (Note 18)	12,680	38,773
Donation received during the year	-	245,243
	27,296,530	32,996,517
Less:		
Amount transferred to income and expenditure statement to match depreciation and amortisation of related assets and intangibles	(7,060,496)	(6,765,079)
Balance at the end of financial year	20,236,034	26,231,438
Current liability	5,043,131	7,009,413
Non-current liability	15,192,903	19,222,025
	20,236,034	26,231,438

Deferred capital grants and donations are government grants and donations from third parties received for the purchase or the construction of depreciable assets and it represents an obligation on the part of the Authority to use and maintain the fixed assets over the rest of the useful lives. These grants and donations will be amortised to the income and expenditure statement over the useful lives of the related assets.

20. Other income

	2007/2008 $	2006/2007 $
Rental income	215,181	4,200
Interest income	412,063	625,865
Fines and forfeitures	333,372	351,002
Foreign currency exchange loss, net	(10,683)	(25,722)
Sponsorship income	-	314,865
Others	519,930	378,386
	1,469,863	1,648,596

Sponsorship income was received mainly for the Blood Bank 60th Anniversary.

21. Staff costs

	2007/2008 $	2006/2007 $
Employee benefits expense (including key management personnel):		
Defined pension benefit plan (Note 14)	1,634,031	1,296,450
Salaries, allowances and bonuses	40,652,564	36,246,402
Defined contribution plans	4,037,187	3,315,680
Other employee benefits	76,947	76,468
	46,400,729	40,935,000

Compensation of key management personnel

Defined pension benefit plan	193,098	131,436
Salaries, bonuses and allowances	1,766,981	2,027,230
Defined contribution plans	48,615	51,540
Short-term employee benefits	2,175	7,809
Total compensation paid to key management personnel	2,010,869	2,218,015

Key management refers to employees designated as Directors and above who have the authority and responsibility for planning, directing and controlling the activities of the Authority.

22. Finance costs

	2007/2008 $	2006/2007 $
Interest expense on long-term loans	1,119,039	1,206,778
Finance charges payable under finance leases	7,290	7,290
	1,126,329	1,214,068

23. Other operating expenses

The following items have been included in arriving at other operating expenses:

	2007/2008 $	2006/2007 $
Board members' allowance	63,125	60,000
Write-off of inventories	44,006	9,862
Loss on disposal of property, plant and equipment	229,001	24,657
Allowance for doubtful receivables	1,838	10,381
Loss on disposal of intangibles	131,339	178

24. Statutory contribution to consolidated fund

In lieu of income tax, the Authority is required to make a contribution to the Consolidated Fund in accordance with the Statutory Corporations (Contributions to Consolidated Fund) Act (Chapter 319A) and in accordance with the Finance Circular Minute No M5/2005.

The annual contribution to consolidated fund is made based on the prevailing statutory contribution rate of 18% for the year of assessment 2008 (2006/2007: 20%).

Reconciliation between contribution to consolidated fund and accounting surplus for the year

A reconciliation between contribution to consolidated fund and the product of accounting surplus before contribution to consolidated fund multiplied by the applicable contribution rate for the years ended 31 March 2008 and 2007 is as follows:

	2007/2008 $	2006/2007 $
Surplus before contribution to consolidated fund	2,881,455	3,662,889
Contribution at rates applicable to the surplus of 18% (2006/2007: 20%)	518,662	732,578
Adjustments for:		
Benefits from previously unrecognised accounting deficit brought forward and excess contributions	(231,651)	(732,578)
Contribution to consolidated fund recognised in the income and expenditure statement	287,011	-

25. Commitments and contingencies

(a) **Capital commitments**

Capital expenditure contracted for as at balance sheet date but not recognised in the financial statements is as follows:

	2007/2008 $	2006/2007 $
Estimated amounts approved and contracted for in respect of future capital expenditure but not provided for	3,548,292	4,610,497

25. Commitments and contingencies (cont'd)

(b) Operating lease commitments – as lessee

The Authority has entered into operating leases for rental of premises and equipment. These leases have an average life of between 1 and 6 years. There are no restrictions placed upon the Authority by entering into these leases. Operating lease payments recognised in the income and expenditure statement during the year amounted to $2,407,961 (2006/2007: $2,425,875).

Future minimum lease payments payable under these operating leases as at 31 March are as follows:

	2007/2008 $	2006/2007 $
Not later than one year	2,135,255	2,026,345
Later than one year but not later than five years	1,936,766	3,150,867
	4,072,021	5,177,212

(c) Operating lease commitments – as lessor

The Authority has entered into operating leases on its property. These non-cancellable leases have remaining lease term of 1 year.

Future minimum rentals receivable under non-cancellable operating leases at 31 March are as follows:

Not later than one year	72,984	3,000

26. Financial risk management objectives and policies

The Authority's principal financial instruments comprise of cash, short term deposits and long term loans. The main purpose of these financial instruments is to finance the Authority's operations. The Authority has various other financial assets and liabilities such as trade receivables and trade payables, which arise directly from its operations. The Authority does not hold or issue derivative financial instruments for trading purposes.

The main risks arising from the Authority's financial instruments are interest rate risk, foreign currency risk, credit risk and liquidity risk. The Authority reviews and agrees policies for managing each of these risks and they are summarised below.

(a) Interest rate risk

The Authority's exposure to changes in interest rates relates primarily to the Authority's interest-bearing loans and fixed deposits. Funding requirements are regularly reviewed so that cash in excess of short term operating requirements are placed in fixed deposits to maximise returns. Information on interest rates exposure is disclosed in Notes 6 and 15.

26. Financial risk management objectives and policies (cont'd)

(b) Foreign currency risk

The Authority does not have any material foreign exchange risk as its operations are substantially transacted in, Singapore dollars.

(c) Credit risk

The Authority's credit risk is primarily attributable to its cash and cash equivalents, trade receivables and other receivables. The Authority places its cash and cash equivalents with credit-worthy financial institutions. The credit risk with respect to receivables is low as the Authority deals with credit-worthy organisations such as government bodies and hospitals. In addition, receivable balances are monitored on an ongoing basis with the result that the Authority's exposure to bad debts is not significant.

The Authority has no significant concentration of credit risk. Trade receivables are spread over a large base of organisations.

The maximum credit risk that the Authority is exposed to is represented by carrying amounts of its financial assets as stated in the balance sheet.

(d) Liquidity risk

The Authority funds its operations through a mix of internally-generated funds, government and non-government grants. The Authority regularly reviews its liquidity reserves, comprising cash flows from its operations and government grants, to ensure sufficient liquidity is maintained at all times. The Authority relies on the Government to fund a significant part of its operations. The framework for funding of the Authority's operations is reviewed with the Ministry of Health on a regular basis. For funding of capital projects under the debt-equity financing framework, the Authority has established an adequate amount of committed credit facilities to meet future funding needs. Under Finance Circular Minute No M8/2007, the Ministry of Finance undertakes to act as the lender of last resort to the Authority for its funding requirements.

26. Financial instruments

Fair values

The fair value of a financial instrument is the amount at which the instrument could be exchanged or settled between knowledgeable and willing parties in an arm's length transaction, other than in a forced or liquidation sale.

Financial instruments whose carrying amount approximates fair value

Management has determined that the carrying amounts of cash and short term deposits, current trade and other receivables, current trade and other payables and accruals, based on their notional amounts, reasonably approximate their fair values because these are mostly short term in nature or are repriced frequently.

Fair values

The finance lease payable and loans payable to Ministry of Finance ("MOF") are carried at amortised cost in the balance sheet. Their fair values are disclosed in the following table:

	Carrying amount		Fair value	
	2007/2008	2006/2007	2007/2008	2006/2007
	$	$	$	$
Finance lease payable	91,875	144,375	99,609	151,955
Loan payable to MOF	27,775,380	30,288,069	27,947,867	29,807,460

The fair value of the loan payable to Ministry of Finance is estimated using the discounted cash flow analysis based on prime rate of borrowings in the market.

27. Authorisation of financial statements

The financial statements of the Authority for the year ended 31 March 2008 were authorised for issue by the members of its Board on 26 June 2008.

HSA Annual Report 2007/08 Editorial Team

Advisors: Dr John Lim & Dr Lam Kian Ming

Managing Editor: Jeannie Thng

Editor: Anita Sim
Assistant Editor: Vivien Tan

Members:
Alison Au
Belinda Chiam
Joyce Nang
Rajeswary S P
Dr Kyi Kyi San
Florence Teo
Mark Wong
Alwin Woo
David Woo
Yap Tien Siang

© Copyright E05-08/R00 HSA Aug 08

a purple©ircle design

This page is left blank intentionally

Health Sciences Authority
11 Outram Road Singapore 169078
Tel: 1800 213 0800
Fax: 6213 0839

www.hsa.gov.sg
hsa_info@hsa.gov.sg