

ANNUAL REPORT 2004

Clinical Trials Centre
Faculty of Medicine
The University of Hong Kong



quality+ assurance

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+hics

heal+hcare

scientific exper+ise



Clinical Trials Centre

Faculty of Medicine
The University of Hong Kong

Clinical Trials Centre (CTC) is a leading academic research organization established under the Faculty of Medicine of The University of Hong Kong (HKU), dedicated to offering one-stop solutions in support of clinical research. We are committed to enhancing healthcare by promoting the quality and efficiency of clinical research through ethical consideration, scientific expertise, quality assurance and education. Our main activities include research consultation, project management, regulatory affairs, budget and contract administration, site management, data management, medical statistics, central laboratory, research pharmacy and education.

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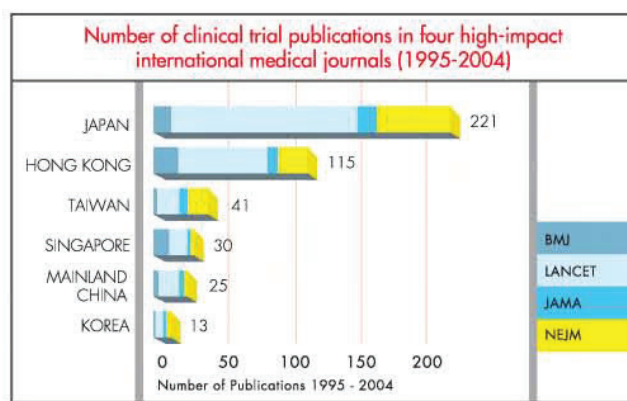
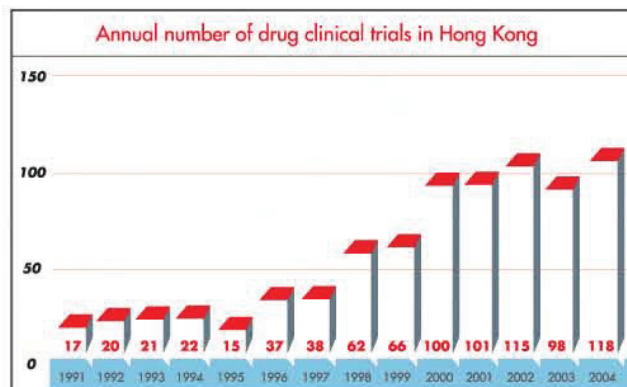
FOREWORD

Globalization of clinical research

Good clinical practices have been implemented in established regions - such as North America, Europe and Japan - since the early 1980s. Introduction of the ICH GCP guidelines in 1996, however, triggered globalization of clinical research, revolutionizing the entire drug development process.

Hong Kong is a winner in this global revolution. Since 1996, there has been a striking increase in the number of drug clinical trials - from around 20 per year before 1996 to 118 in 2004. The increase in clinical research resulted in clinical trials extending beyond the two academic medical faculties to non-academic hospitals and clinics. Among the 175 study sites for 115 drug trials initiated in Hong Kong in 2002, 75 (43%) were non-academic sites.

There are many reasons behind Hong Kong's success as one of the most popular places for conducting global clinical trials in Asia - including its strategic location, state-of-the-art infrastructure, high quality healthcare, transparent legal system, simple regulatory requirements and dense population. Key opinion leaders and internationally recognized clinical investigators are also considered a major attraction. Between 1995 and 2004, Hong Kong clinical investigators published a total of 116 full papers in four major high-impact international medical journals including BMJ, Lancet, JAMA and NEJM - ranking No. 2 in Asia after Japan. On a per capita basis, Hong Kong - with a population of 6.9 million - in fact tops the list (16 papers/million).



International recognition

Hong Kong's accelerating involvement in global clinical trials has attracted the attention of major drug regulatory agencies in various countries. Since the first U.S. FDA inspection in Asia in 1997, the agency has completed nine investigative site inspections in five Asian cities - five of which were in Hong Kong. Satisfactory results from all five, as well as other regulatory inspections and sponsor audits, all underlined the internationally-recognized quality of research in Hong Kong.

Industry players of various backgrounds and objectives have become increasingly enthusiastic about collaborative opportunities in Hong Kong. Among hundreds who paid visits to CTC, there were professional life sciences investors looking for investment opportunities in drug discoveries, and mainland China healthcare companies seeking clinical development advice.

Performance and Potential

In pace with the globalization process and responding to the changing needs of trial sponsors and investigators in the new era, CTC accelerated its expansion plan in 2004 - extending the scope of activities, geographic coverage and the size of the team. We officially launched ClinCluster - Hong Kong's new multicentre clinical study site management platform. To prepare for our future activities in mainland China, we entered into collaboration with the First Affiliated Hospital of Sun Yat-sen University in Guangzhou, China in the areas of central laboratory services and clinical research in general. We have also joined forces with reputable researchers and medical institutions in the U.S., mainland China and Hong Kong to establish a China Spinal Cord Injury Network for developing promising therapies for spinal cord-injured patients through international-standard clinical trials in China. We are proud that CTC has evolved into a leading academic research organization in the region.

Hong Kong is meanwhile emerging as an important hub for global drug discovery and development. As a leading organization at the forefront of the research wave, CTC will continue to play a significant role in the challenging future.

" We are proud that CTC has evolved into a leading academic research organization in the region. "

Johan Karlberg BSc (Stat & Edu), MD, PhD (Anat & Cell Bio)

Director & Professor





Year of breakthrough

Breakthroughs are not accidents but the result of continuous effort. Thanks to the effectiveness, creativity and enthusiasm of our team, 2004 was an encouraging breakthrough year for CTC.

Since the second quarter, setting up multicentre clinical trials in Hong Kong is far simpler and efficient due to the launch of ClinCluster - the unique Hong Kong network for clinical trials. At the same time, Alab - our central laboratory services platform - started serving sponsors in their multicentre clinical trials. Formation of a strategic alliance with the First Affiliated Hospital of Sun Yat-sen University in Guangzhou further extended our central laboratory network, offering a smart solution for analysis of specimens collected for global clinical trials conducted in mainland China. We anticipate these developments will bring about marked changes in the way multicentre clinical trials are planned for and managed in Hong Kong, China and the Asian region.

Capitalizing on these new initiatives as well as CTC's other cutting edges, the number of newly contracted industry-sponsored clinical studies increased for the fifth straight year to 53, representing a 23% jump above 2003. Revenue from industry-sponsored clinical studies and related services also reached a record high of HK\$13 million - an impressive 25% growth over the preceding year.

Where there is a will, there is a way. 2004 was a good year for CTC, and our journey continues. After all, breakthroughs do not happen by accident.

Henry Yau BSc (Biochem), MBA (Finance)
Assistant Director & Business Development Manager

A new horizon in the conduct of multicentre trials in Hong Kong

In Spring 2004, ClinCluster - the unique Hong Kong clinical study sites network - was born.

ClinCluster is one of the largest site management organizations, embracing a network of hospitals/clinics and a population of 6.8 million. It offers expertise in all therapeutic areas and provides easy access to a large number of trial subjects, from patients with acute or chronic diseases to healthy volunteers. The high quality data and strict ICH GCP compliance by clinical investigators and ethics committees in the network have been confirmed by several satisfactory inspections by major regulatory agencies including the U.S. Food and Drug Administration.

ClinCluster offers trial sponsors a one-stop platform for feasibility assessments, ethics committee applications, budget calculation, contract management, and payment administration. The "standard-budget, standard-contract" concept and availability of master clinical trial contracts with major trial sponsors greatly simplify administration for multicentre studies, allowing trial sponsors and clinical investigators to focus on their core research. By the end of the year, eight phase II and III clinical studies were confirmed in 12 hospitals/clinics, and the list keeps growing.

In ClinCluster, everyone is a winner!

Henry Li BPharm, MSc, MRPharmS
Clinical Research Manager

ORGANIZATION STRUCTURE

Faculty of Medicine The University of Hong Kong

Board of Directors

Chairman

Professor Karen Lam
Chief, Division of Endocrinology
Department of Medicine
The University of Hong Kong



Dr. Bernard Cheung
Associate Professor
Department of Medicine
The University of Hong Kong



Dr. Robert Collins
Chief of Service
Department of Pathology
and Clinical Biochemistry
Queen Mary Hospital



Dr. Lawrence Lai
Hospital Chief Executive
Queen Mary Hospital



Professor Johan Karlberg
Director
Clinical Trials Centre
The University of Hong Kong



Professor CL Lai
Chief, Division of Gastroenterology
and Hepatology
Department of Medicine
The University of Hong Kong



Professor CS Lau
Co-chief, Division of Rheumatology
Department of Medicine
The University of Hong Kong



Professor Ricky Man
Head
Department of Pharmacology
The University of Hong Kong



Dr. Ronnie Poon
Assistant Dean (Research)
Faculty of Medicine
The University of Hong Kong



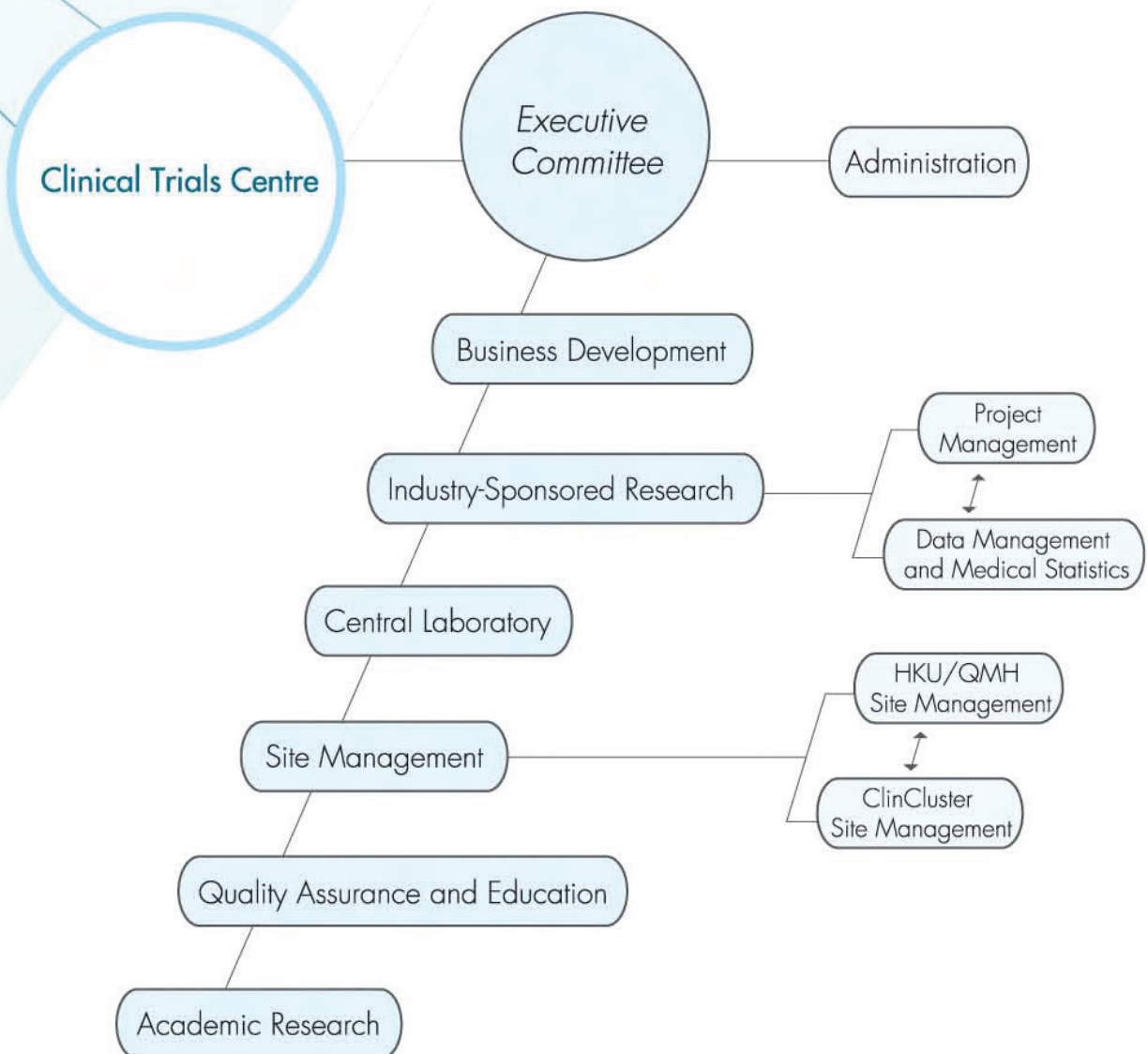
Professor Y Tong
Director
School of Chinese Medicine
The University of Hong Kong



Secretary

Henry Yau
Assistant Director
& Business Development Manager
Clinical Trials Centre
The University of Hong Kong





CTC's TEAM

STAFF

<p>Executive Committee Johan Karlberg BSc, MD, PhD Henry Yau BSc, MBA</p>	<p>Director & Professor Assistant Director & Business Development Manager</p>
<p>Administration Josephine Yuen Man-wai Cheng Mabel Cheng</p>	<p>Secretary to Director Clerical Assistant Caretaker</p>
<p>Business Development Henry Yau BSc, MBA Gretel Yiu BBA Janet Ho BBA</p>	<p>Assistant Director & Business Development Manager Assistant Business Development Manager Executive Officer</p>
<p>Industry-Sponsored Research Project Management Selene Tam BHSc, MMedSc, PhD, RN Janice Hon BSc Dora Lau BSc</p> <p>Data Management and Medical Statistics Anita Wong BSc MA, MBus Jeremy Li BSc, MMedSc</p>	<p>Project Manager Clinical Research Associate Clinical Research Associate Medical Statistician Clinical Data Manager</p>
<p>Central Laboratory Stella Wong BSc, MMath, RegMLT</p>	<p>Clinical Laboratory Services Manager</p>
<p>Site Management HKU/QMH Site Management Yolanda Yan BScN, MMedSc, RN Freddie Chiu BSc, MPhil Dilys Cheung BSc</p> <p>ClinCluster Site Management Henry Li BPharm, MSc, MRPharmS</p>	<p>Site Manager Assistant Site Manager Clinical Research Associate Clinical Research Manager</p>
<p>Quality Assurance and Education James Thorburn BSc, PGCert. MRes</p>	<p>GCP-QA Manager</p>
<p>Academic Research Johan Karlberg BSc, MD, PhD Child Growth Research Chi-wai Kwan BSc, PhD William Wong BSc, MPhil Spinal Cord Injury Network John Chen MD, MSc Benny Fung BA, MPhil Ada Wong BSSc</p>	<p>Director & Professor Senior Medical Statistician Systems Analyst Clinical Development Manager System Developer Executive Assistant</p>



HONORARY STAFF

Honorary Professor / Clinical Professor

Wing-hong Seto
MBBS, MRCP, MRCPPath, FHKAM (Pathology)

Honorary Professor

Sidney Tam
MBBS, MRCP, FACB, FRCPA, FHKCP, FHKCPath, FHKAM (Medicine), FHKAM (Pathology)

Honorary Clinical Professor

Honorary Associate Professor / Associate Clinical Professor

William Chui
BPharm, MSc, Member of RPSGB

Honorary Associate Professor

Robert Collins
MBBS, FRCPA, FHKAM (Pathology), FHKCPath, FIAC

Honorary Clinical Associate Professor

Siu-ping Hui
MBBS, FRCS (Ophth), FRCOphth, FCS, FRCS (Ophth), FHKAM (Ophth), FCOphth

Honorary Clinical Associate Professor

Alvin Kwok
MBBS, FCOphth, FHKCS, FRCS, FHKAM (Ophth)

Honorary Clinical Associate Professor

Edmond Ma
MBBS, MRCP, MRCPPath, FRCPA, FHKCPath, MHKCP, FHKAM (Pathology)

Honorary Clinical Associate Professor

Paul Yip
BSc (Hons), PhD, DCS

Honorary Associate Professor

Honorary Assistant Professor / Assistant Clinical Professor

Wing-sun Chow
MBBS, MRCP, FHKCP, FHKAM (Medicine)

Honorary Clinical Assistant Professor

Gillis Heller
BA, JD

Honorary Assistant Professor

Tak-chuen Ko
MBBS, FHKAM (Ophth), FCOphth, FRSC

Honorary Clinical Assistant Professor

Thomas Leung
MBBS, MD

Honorary Clinical Assistant Professor

Honorary Research Associate

Yin-bun Cheung
BSSc, Grad Dip Stat, MSc, PhD, FRSS

Honorary Research Associate

Headcount summary of CTC's team

Team	Headcount
Board of Directors	11
Staff	23
Honorary Staff	13
Clinical Investigators	> 100
Laboratory Professionals	> 250

ACHIEVEMENTS

Industry-sponsored clinical studies contracted in 2004

Therapeutic Area	Disease Area	Study Phase *	Principal Investigator	Department	Study Site #
Anaesthesiology	Postoperative Nausea and Vomiting	II	Dr. YF Chow Dr. Michael Irwin	Anaesthesia Anaesthesiology	QEH GMH
Anaesthesiology	Postoperative Nausea and Vomiting	II	Dr. KM Chow Dr. KM Chow Dr. Michael Irwin Dr. TW Lee	Obstetrics & Gynaecology Obstetrics & Gynaecology Anaesthesiology Anaesthesia & Intensive Care	CMC PMH GMH TMH
Cardiology	Arrhythmia	0	Dr. HF Tse	Medicine	GMH
Cardiology	Arrhythmia	0	Dr. HF Tse	Medicine	GMH
Cardiology	Atrial Fibrillation	III	Dr. HW Chan	Medicine	GMH
Cardiology	Heart Failure	III	Dr. HF Tse	Medicine	GMH
Cardiology	Heart Failure	0	Dr. Kathy LF Lee	Medicine	GMH
Cardiology	Heart Failure	0	Dr. HF Tse	Medicine	GMH
Cardiology	Hypertension and Dyslipidemia	III	Dr. Daniel WS Chu Dr. HF Tse	Family Medicine Medicine	SYC / TYH GMH / TWH
Cardiology	Ischemia	0	Dr. HF Tse	Medicine	GMH
Dematology	Dermatitis	III	Dr. Henry Chan	Medicine	GMH
Endocrinology	Diabetes Mellitus	III	Professor Karen SL Lam	Medicine	GMH
Endocrinology	Diabetes Mellitus	III	Professor Karen SL Lam	Medicine	GMH
Endocrinology	Diabetes Mellitus	III	Professor Karen SL Lam	Medicine	GMH
Endocrinology	Osteoporosis	III	Professor Annie WC Kung	Medicine	GMH
Endocrinology	Osteoporosis	III	Professor Annie WC Kung	Medicine	GMH
GI & Hepatology	Cirrhosis	II	Dr. George KK Lau	Medicine	GMH
GI & Hepatology	Constipation	III	Dr. Wayne Hu	Medicine	GMH
GI & Hepatology	Crohn's Disease	III	Dr. Benjamin CY Wong	Medicine	GMH
GI & Hepatology	Crohn's Disease	III	Dr. Benjamin CY Wong	Medicine	GMH
GI & Hepatology	Crohn's Disease	III	Dr. Benjamin CY Wong	Medicine	GMH
GI & Hepatology	Hepatitis B	II	Professor CL Lai	Medicine	GMH
GI & Hepatology	Hepatitis B	III	Professor CL Lai	Medicine	GMH
GI & Hepatology	Hepatitis B	III	Professor CL Lai	Medicine	GMH
GI & Hepatology	Hepatitis B	0	Professor CL Lai	Medicine	GMH
Haematology	Thrombocytopenia	II	Professor Raymond HS Liang	Medicine	GMH
Immunology & Allergy	Corticosteroid-induced Osteoporosis	III	Professor CS Lau	Medicine	GMH
Infectious Disease	Bacteremia	II	Dr. Herman SY Liu	Medicine	PYH

Infectious Disease	Respiratory Syncytial Virus Infection	II	Dr. Daniel WS Chu	Family Medicine	SYC / VPC
Infectious Disease	Respiratory Syncytial Virus Infection	O	Dr. Daniel WS Chu	Family Medicine	SYC
Infectious Disease	Rotavirus Infection	III	Professor YL Lau	Paediatrics	PMH / PYH / QMH / TMH
Infectious Disease	Sepsis	II	Dr. Sathasivam Anandaciva Dr. WL Law	Anaesthesia & Intensive Care Surgery	TMH QMH
Nephrology	Renal Failure	II	Professor KN Lai	Medicine	QMH
Nephrology	Syndrome of Inappropriate Antidiuretic Hormone Secretion	III	Professor KN Lai	Medicine	QMH
Oncology	Breast Cancer	II	Dr. Louis WC Chow	Surgery	QMH / TWH
Oncology	Breast Cancer	II	Dr. Louis WC Chow	Surgery	QMH / TWH
Oncology	Breast Cancer	III	Dr. Louis WC Chow	Surgery	QMH / TWH
Oncology	Breast Cancer	III	Dr. Louis WC Chow	Surgery	QMH / TWH
Oncology	Colon Cancer	III	Dr. Raymond TT Chan	Clinical Oncology	QMH
Oncology	Colon Cancer	III	Dr. Philip KW Kwong	Clinical Oncology	QMH
Oncology	Gastric Cancer	II	Dr. KM Chu	Surgery	QMH
Oncology	Liver Cancer	II	Professor Jonathan ST Sham	Clinical Oncology	QMH
Oncology	Lung Cancer	II	Dr. James Ho	Medicine	QMH
Oncology	Lung Cancer	II	Dr. Kenneth WT Tsang	Medicine	QMH
Oncology	Lung Cancer	III	Dr. Daniel TT Chua	Clinical Oncology	QMH
Oncology	Prostate Cancer	II	Dr. PC Tam	Surgery	QMH
Orthopaedics & Traumatology	Low Back Pain	IV	Dr. Kenneth MC Cheung	Orthopaedics & Traumatology	QMH
Paediatrics	Influenza	III	Dr. KF Huen Dr. YW Hui Professor YL Lau Dr. Daniel KK Ng Dr. LY So	Paediatrics Paediatrics Paediatrics Paediatrics Paediatrics	TKH PMH QMH KWH PYH
Paediatrics	Respiratory Syncytial Virus Infection	III	Professor YL Lau	Paediatrics	QMH
Psychiatry	Schizophrenia	III	Dr. KF Chung	Psychiatry	QMH
Psychiatry	Schizophrenia	III	Professor SW Tang	Psychiatry	QMH
Psychiatry	Schizophrenia	III	Professor SW Tang	Psychiatry	QMH
Psychiatry	Schizophrenia	O	Dr. Eric YH Chen	Psychiatry	QMH

* Study Phase	O:	Others, including medical device, observational, epidemiology and compassionate studies			
# Study Site	CMC:	Caritas Medical Centre	SYC:	Sai Ying Pun Jockey Club General Outpatient Clinic	
	KWH:	Kwong Wah Hospital	TKH:	Tseung Kwan O Hospital	
	PMH:	Princess of Margaret Hospital	TMH:	Tuen Mun Hospital	
	PYH:	Pamela Youde Nethersole Eastern Hospital	TWH:	Tung Wah Hospital	
	QEH:	Queen Elizabeth Hospital	TYH:	Tsan Yuk Hospital	
	QMH:	Queen Mary Hospital	VPC:	Violet Peel Health Centre	

ACHIEVEMENTS

Industry Collaboration

Committed collaboration

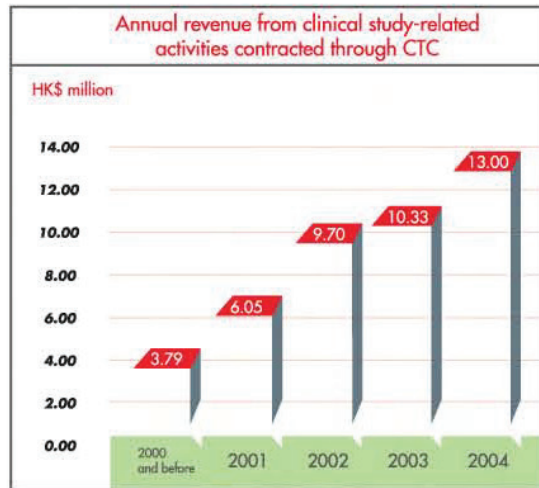
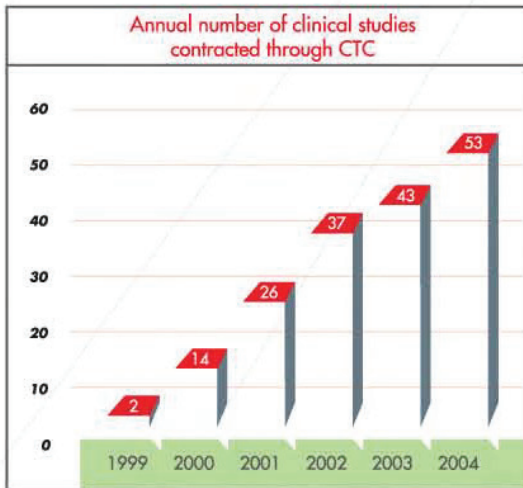
As an academic research organization dedicated to enhancing clinical research in the region, CTC has continued to strengthen its industry-academic collaboration platform in clinical research. Since establishment in 1998, CTC has strived to build long-term collaboration with trial sponsors worldwide through development of master study site agreements. In 2004, CTC initiated collaboration with another six trial sponsors, increasing the number of master study site agreements to 43. Availability of master study site agreements streamlines the contract negotiation and study preparation process, which helps encourage continuing clinical research activity in Hong Kong by trial sponsors.

Trial sponsors with a master study site agreement developed through CTC

Abbott Laboratories	Merck Sharp & Dohme
Achillion Pharmaceuticals	Merck KGaA
Advanced Herbal Therapeutics	Novartis
Arrow Therapeutics	Novo Nordisk
AstraZeneca	OSI Pharmaceuticals
Aventis Pharma	Organon
BCIRG	Pfizer
Biomeasure	Pi Medical
Biocompatibles	Roche
Boston Scientific	Sanofi-Synthelabo
Bristol-Myers Squibb	Schering-Plough
Celltech	Serono
CK Life Sciences	Servier
Eli Lilly	St. Jude Medical
Everpride Biopharmaceutical	Theravance
GlaxoSmithKline	Triangle Pharmaceuticals
Idenix Pharmaceuticals	Tularik
Johnson & Johnson	Vigconic
Kowa	Wyeth Pharmaceuticals
LG Life Sciences	Xanthus Life Sciences
Lundbeck	Zila
Medtronic	

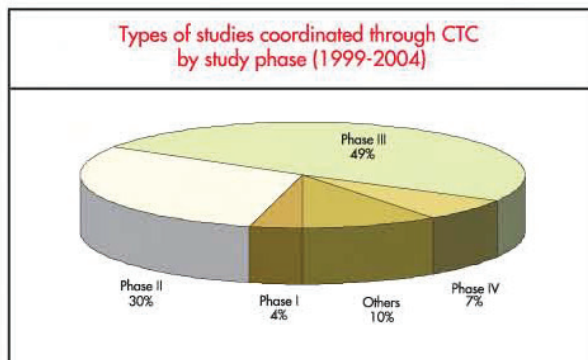
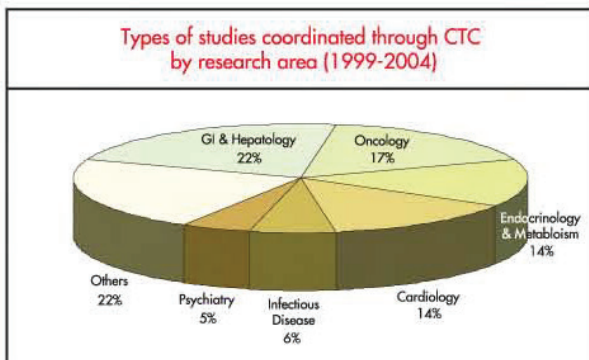
Uninterrupted growth

2004 was a "year of harvest" for CTC. Despite the impact of SARS in 2003, CTC shifted into high gear again. The number of newly contracted industry-sponsored clinical studies increased by 23% over the preceding year to 53 - equivalent to averaging one new study per week. Revenue from industry-sponsored clinical studies and related services increased sharply to HK\$13 million, a 25% jump over 2003. The cumulative contract value since CTC's establishment in 1999 passed HK\$100 million. Among the 175 studies contracted in the last six years, 90 were closed and the others are in active progress.



Diversity in research types

Gastroenterology and Hepatology remained the most active research areas, accounting for 22% of all industry-sponsored clinical studies coordinated through CTC. Other active research areas include Oncology, Cardiology, Endocrinology and Metabolism, Infectious Disease and Psychiatry. Phase II and III studies together represented 79% of all studies in terms of study phase.



ACHIEVEMENTS

Strategic Clinical Development

Product development planning

Development of new healthcare products such as drugs, biologics and medical devices is a highly complicated and lengthy process requiring large inputs of scientific expertise, human resources and financial investment. Smart formulation and implementation of product development strategies are critical success factors of every healthcare company.

During 2004, CTC strengthened its partnership relationship with startup healthcare companies through early participation in their strategic product development planning process. In the booming pharmaceutical, biotechnology and Chinese medicine industry in the region, CTC will play a more active role in strategic product development.



A model for modern Chinese medicine development

Modernization of Chinese medicine has attracted growing public attention worldwide in recent years. Since 2000, CTC has been providing consultation in clinical development of Chinese medicine products to companies in Hong Kong and mainland China, including Vigconic (International) Limited.

Vigconic, a subsidiary of a Hong Kong listed company, is a research-based Chinese medicine company focusing on development

of Chinese medicine products in the areas of liver diseases therapy, immunomodulation, and alleviation of cancer-related and aging-related conditions. Since 2003, CTC has been assisting Vigconic in strategic planning for clinical development of its products. In early 2004, Vigconic initiated a phase I/II clinical trial of Vigchemo, a product for alleviating chemotherapy-related adverse effects in cancer patients. Another clinical trial of Vitalliver, a product for liver diseases therapy, began towards the end of the year.

In 2005, CTC will help initiate a multicentre clinical trial of ViNeuro against Parkinson's disease, as well as a large scale phase II efficacy study of Vigchemo.

The committed research collaboration between Vigconic and CTC demonstrated the efficiency and effectiveness of strategic industry-academic collaboration, which is anticipated to become a model for modern Chinese medicine research and development.



Participation of CTC in Vigconic's development pipeline

Product	Indication	Status of Development
Vigchemo	Alleviation of chemotherapy-related adverse effects	Pilot phase I/II clinical trial successfully completed. Large scale phase II efficacy clinical trial will start in 2005.
Vitalliver	Treatment of Cirrhosis	Large scale phase II clinical trial ongoing.
ViNeuro	Treatment of Parkinson's disease	Large scale multicentre phase II clinical trial will start in 2005.

Tailored solutions

Management of clinical studies requires multiple expertise and skills, and harmonization of them. Success of every clinical study relies on effective project management - from scientific conceptualization to project planning and management.

During the year, CTC expanded its project management team substantially, providing tailored solutions to meet the specific needs of trial sponsors in the rapidly changing clinical research environment in the region. CTC's project management team will continue to support trial sponsors' research activities, turning their seeds into flowers.

The clinical study project management process



Speedy startup of clinical trial

Clinical trials account for more than half of the time required to bring a new drug from the laboratory to the market. Quick startup of clinical trials helps shorten the clinical development period - and speed up the availability of new medications to the public.

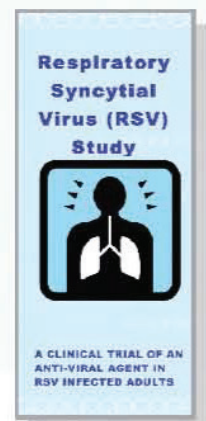
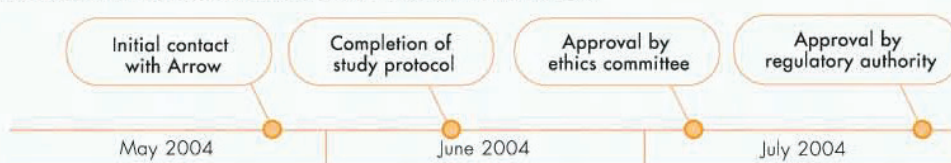
In mid-2004, CTC facilitated speedy startup of a phase II clinical trial of a respiratory syncytial virus (RSV) infection treatment, a novel drug developed by Arrow Therapeutics Limited. To catch the epidemic season of RSV

in Hong Kong, CTC formed a special project team of clinical investigators, virologists, clinical pharmacologists, research pharmacists, project managers, regulatory affairs professionals, data managers, medical statisticians, laboratory professionals and financial professionals. With this joint effort, CTC successfully helped Arrow develop a study protocol, secure necessary ethics committee and regulatory approvals, and prepare the clinical trial for initiation within an extremely short period of eight weeks.

Before commencement of the clinical trial, a RSV epidemiology study was conducted, during which a modified PCR-based RSV diagnostic test was developed.

Arrow Therapeutics Limited is a UK-based pharmaceutical company dedicated to novel anti-infective drug discovery and development. Its research pipeline contains a range of anti-virals and anti-bacterials.

Speedy startup of Arrow's phase II clinical trial of a RSV infection treatment in 2004



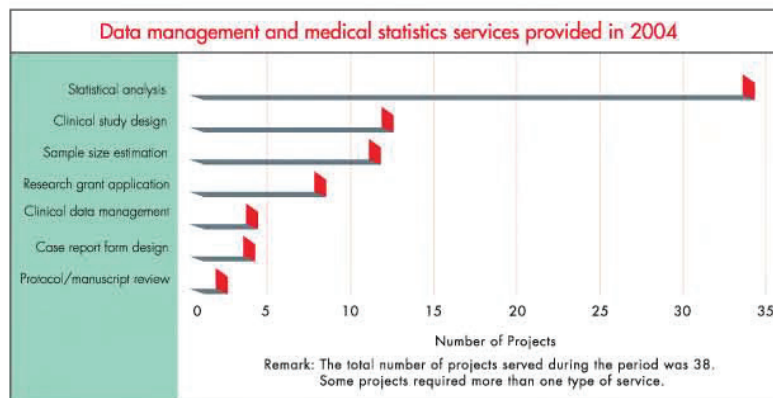
ACHIEVEMENTS

Data Management and Medical Statistics

Strategic approach

Clinical data are the most valuable asset on which the success of every research-based healthcare company is based. CTC sees data management and medical statistics as a strategic element with a decisive influence on product development strategies, and believes integration with other strategic functions can create considerable advantages that drive success in a shorter time and lower cost.

In 2004, CTC implemented tighter integration of its data management and medical statistics team with its project management team. CTC's medical statisticians and data managers, with the support of project managers and other professionals, provided strategic data management and medical statistics services - from protocol development to statistical analysis and reporting - for 38 academic and sponsored clinical studies in various therapeutic areas and phases. Specific services provided included clinical study design, sample size estimation, protocol/manuscript review, case report form design, clinical data management, statistical analysis and research grant application.



Critical data review and analysis

The healthcare industry in China has been growing rapidly in recent years. Research-based China healthcare companies are investing more and more resources into research and development, in anticipation of appealing to the international market.

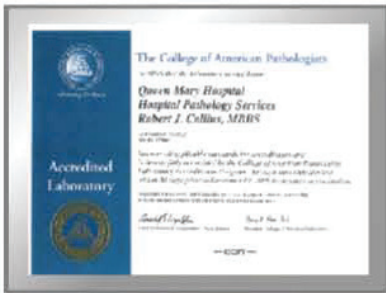
During 2004, CTC was approached by a healthcare company founded in mainland China to assist in clinical development of a Chinese medicinal viral infection treatment. In line with its product development strategy, the company invited CTC to perform critical review and analysis of the product's clinical trial data

that were collected from study sites in mainland China. It is anticipated the analysis results will form the basis for further clinical development, with the ultimate objective of securing international acceptance of the product, and benefiting overseas as well as local patients.





Accreditation by the College of American Pathologists



From Asia and beyond Asia

After years of preparation and development, Alab, CTC's central laboratory service platform, came into operation in the second quarter of 2004. Situated in the prime Asian logistical hub, Alab is the ideal choice for supporting regional clinical studies in Asia. Together with the central laboratory network of CentralLabS Clinical Research, CTC's global central laboratory partner, CTC is capable of providing global central laboratory services to trial sponsors worldwide.

A step forward into the mainland

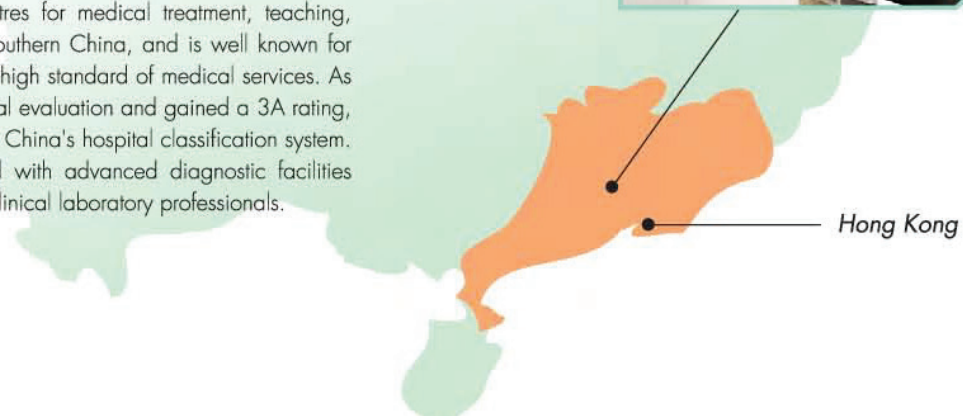
In November 2004, CTC formed a strategic alliance in clinical trial central laboratory business with the First Affiliated Hospital of Sun Yat-sen University in Guangzhou, China. The alliance extended CTC's central laboratory capability into mainland China, adding an important competitive advantage to the existing global central laboratory network developed jointly by CTC and CentralLabS. The strategic move offers smart central laboratory solutions on the mainland, an initiative long awaited by trial sponsors.

The First Affiliated Hospital is the largest general hospital among the eight affiliated hospitals of Sun Yat-sen University. The hospital ranks among the most important centres for medical treatment, teaching, research and rehabilitation in southern China, and is well known for its sophisticated techniques and high standard of medical services. As early as 1993, it passed national evaluation and gained a 3A rating, the highest level under mainland China's hospital classification system. Its core laboratory is equipped with advanced diagnostic facilities and staffed by highly qualified clinical laboratory professionals.

The Core Laboratory of the First Affiliated Hospital of Sun Yat-sen University, Guangzhou



China



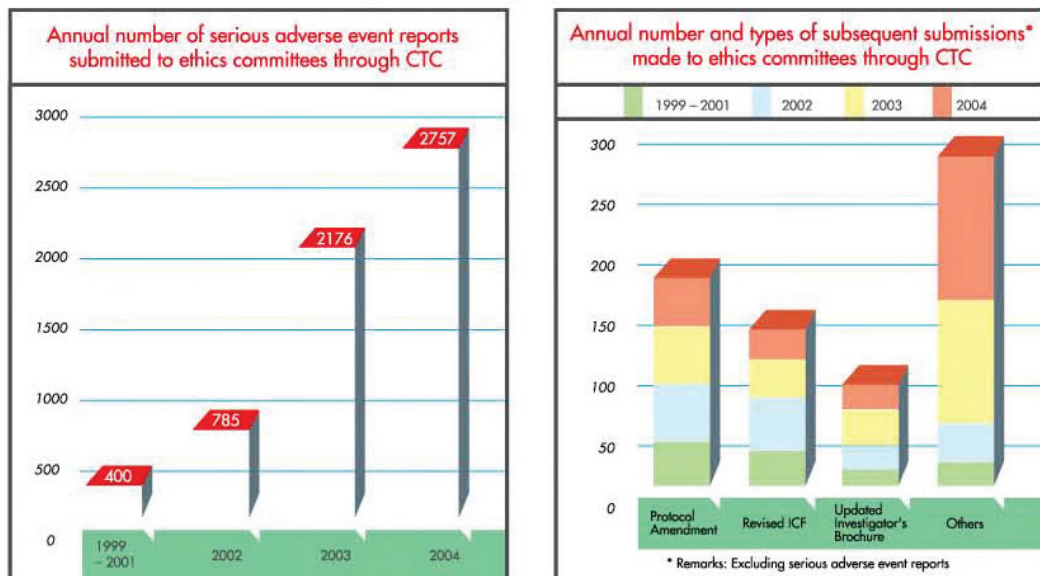
Hong Kong

ACHIEVEMENTS

Site Management

Ethical review

Ethics is a core of clinical research. In line with the upsurge in clinical research activities, a substantial increase in the number of submissions to ethics committees was seen in 2004. During the year, 56 initial applications and 243 subsequent submissions, as well as 2,757 serious adverse event reports, were made to ethics committees. As the centre responsible for overseeing the level of protection of human subjects in clinical studies at HKU, CTC conducted the first internal audit of the affiliated ethics committee.



Regulatory inspection

Following inspections in 1998 and 2002, HKU was inspected in December 2004 for the third time by the U.S. Food and Drug Administration for its participation in a global clinical trial of an investigational new drug. The satisfactory results of such inspections not only demonstrated HKU's outstanding clinical research capabilities and quality, but also its increasingly important contribution to multinational clinical research.

Investigator-initiated studies

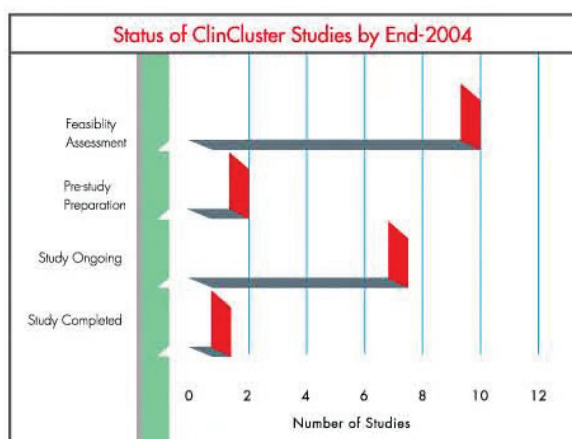
With the implementation of the European Union Directive on Clinical Research on May 1, 2004, there is a call for regulation of investigator-initiated studies at the same standard as industry-sponsored studies worldwide. At the request of clinical investigators, CTC has started offering ethics submission and regulatory affairs supports for investigator-initiated studies at HKU since December 2004. Such new support is not only welcomed by clinical investigators but also expected to help raise the quality of academic research at HKU.



ClinCluster

In the second quarter of the year, the first and the only Hong Kong clinical study sites network - ClinCluster - was formed.

ClinCluster is a unique platform integrating the medical and scientific expertise, research facilities and patient populations of medical institutions in the network. Through ClinCluster, trial sponsors can easily initiate multicentre clinical studies in Hong Kong and take advantage of ClinCluster's novel concepts - free feasibility assessment, standardized budget and contract, and continuous study site support. By the end of 2004, 14 trial sponsors experienced the benefits of ClinCluster services, with eight studies successfully initiated in 12 hospitals/clinics. It is anticipated that ClinCluster will unleash Hong Kong's clinical research potential, making it one of the world's most admired clinical research hubs.



ClinCluster website at www.clincluster.com



Clinical studies coordinated through ClinCluster in 2004

Therapeutic Area	Disease Area	Study Phase *	Study Site #
Anaesthesiology	Postoperative Nausea and Vomiting	II	QEH / QMH
Anaesthesiology	Postoperative Nausea and Vomiting	II	CMC / PMH / QMH / TMH
Cardiology	Hypertension and Dyslipidemia	III	QMH / SYC / TWH / TYH
Infectious Disease	Bacteremia	II	PYH
Infectious Disease	Respiratory Syncytial Virus Infection	II	SYC / VPC
Infectious Disease	Respiratory Syncytial Virus Infection	O	SYC
Infectious Disease	Sepsis	II	QMH / TMH
Paediatrics	Influenza	III	KWH / PMH / PYH / QMH / TKH

* Study Phase	O:	Others, including medical device, observational, epidemiology and compassionate studies		
# Study Site	CMC:	Caritas Medical Centre	SYC:	Sai Ying Pun Jockey Club General Outpatient Clinic
	KWH:	Kwong Wah Hospital	TKH:	Tseung Kwan O Hospital
	PMH:	Princess of Margaret Hospital	TMH:	Tuen Mun Hospital
	PYH:	Pamela Youde Nethersole Eastern Hospital	TWH:	Tung Wah Hospital
	QEH:	Queen Elizabeth Hospital	TYH:	Tsan Yuk Hospital
	QMH:	Queen Mary Hospital	VPC:	Violet Peel Health Centre

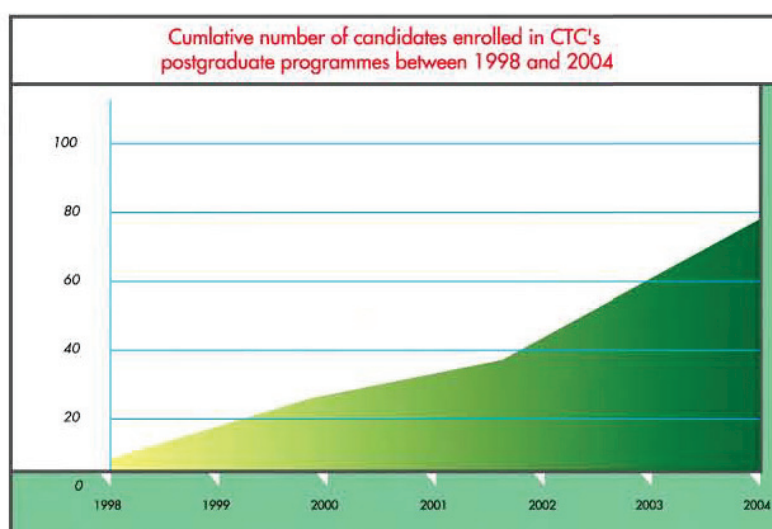
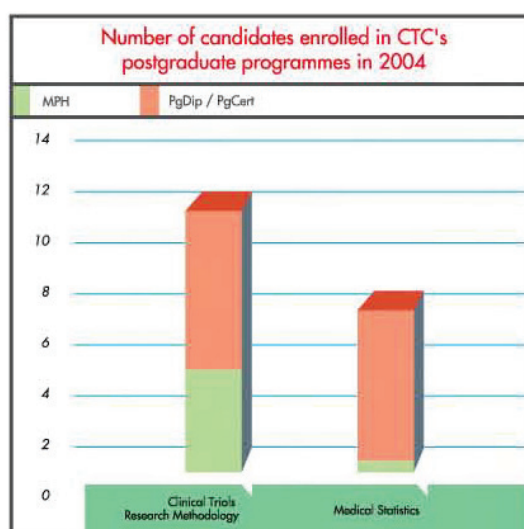
ACHIEVEMENTS

Education

Postgraduate programmes

CTC's postgraduate programmes continued enjoying great popularity in 2004. In addition to Postgraduate Diploma and Postgraduate Certificate programmes in Clinical Trials Research Methodology and in Medical Statistics, a Master of Public Health programme (MPH) - replacing the previous Master of Medical Sciences programme - was launched in collaboration with Department of Community Medicine of HKU.

During the year, 20 candidates were admitted to CTC's postgraduate programmes. Since 1998, 77 candidates have enrolled and 43 have already graduated. With increasing clinical research activities in the region, it is confidently expected the programmes will continue to attract research professionals and students interested in contemporary clinical research.



Symposium on clinical trial central laboratory services

CTC, together with its central laboratory partner CentralabS Clinical Research, organized a "Symposium on Clinical Trial Central Laboratory Services" on March 27, 2004. The symposium provided expert opinion on issues relating to clinical trial central laboratory services, international clinical laboratory accreditation and clinical specimen transportation logistics - plus a special lecture on SARS virus characteristics and vaccine development. Over 100 participants from academic institutions, hospitals and the pharmaceutical industry attended the event.

Selected clinical trial-related presentations and courses conducted by CTC staff members in 2004

- Karlberg J.P.E., The Asian Clinical Trial Arena; A Rapidly Changing Environment, *Symposium on Cardiac Safety and the Asian Clinical Arena, Singapore.*
- Yau, H.K.C., Time and Project Management Skills, *The Hong Kong Association of The Pharmaceutical Industry Regulatory Training Course, Hong Kong, PR China.*
- Yau, H.K.C., The Market Environment in China, *CentralabS Annual Business Development Meeting, New Jersey, U.S.*
- Karlberg J.P.E., Problems in Collaboration between Physicians and the Industry in Clinical Trials, *First Global Conference on Cardiovascular Clinical Trials and Pharmacotherapy - Medical Directors' Forum, Hong Kong, PR China.*
- Fong D.Y.T., *Workshop on Clinical Research Methodology at Tuen Mun Hospital, Hong Kong, PR China.*
- Huang J., *Lecture Tour on Evidence-Based Medicine in Beijing, Xi'an, Wuhan, Chengdu, Guangzhou, Shanghai, Hangzhou and Nanjing, PR China.*

International research efforts

In addition to sponsored clinical studies, CTC also actively participates in international scientific research activities. In September 2004, the HKU Spinal Cord Injury Fund (HKU-SCIF) was founded to fund spinal cord injury research and educational activities coordinated by the China Spinal Cord Injury Network (China SCI Network), an international research collaboration initiated by highly reputable researchers and institutions from the U.S., mainland China and Hong Kong. CTC will serve as the coordinating centre for running clinical trials in major spinal cord injury treatment centres in mainland China and Hong Kong, with the ultimate goal of developing promising therapies for spinal cord-injured patients.

Selected scientific publications by CTC staff members in 2004

Selected publications in international journals

- Cheung Y.B., Machin D., Karlberg J.P.E. and Khoo K.S., A longitudinal study of pediatric body mass index values predicted health in middle age, *Journal of Clinical Epidemiology*. 2004, 57: 1316-22.
- Karlberg J.P.E., Chong S.Y. and Lai W.Y.Y., Do Men Have a Higher Case Fatality Rate of Severe Acute Respiratory Syndrome than Women Do?, *American Journal of Epidemiology*. 2004, 159 (3): 229-231.
- Wong R.W.M., Lam K.F., Cheng C., Hui W.M., Xia H.H.X., Lai K.C., Hu H.C., Huang J., Lam C.L.K., Chan C.K., Chan O.O., Lam S.K. and Wong B.C.Y., Population Based Study of Noncardiac Chest Pain in Southern Chinese: Prevalence, Psychosocial Factors and Health Care Utilization, *World Journal of Gastroenterology*. 2004, 10(5): 707-712.
- Chong S.Y., Yip P.S.F. and Karlberg J.P.E., Maternal smoking: an increasing unique risk factor for sudden infant death syndrome in Sweden, *Acta Paediatrica*. 2004, 93: 471-478.
- Chan G.C.F., Ng D.M.W., Fong D.Y.T., Ho S.Y. and Lau Y.L., Comparison of Subcutaneous Infusion Needles for Transfusion-Dependent Thalassemia Patients by the Intrapersonal Cross-Over Assessment Model, *American Journal of Hematology*. 2004, 76: 398-404.
- Cheung Y.B., Ma S., Machin D. and Karlberg J.P.E., Birthweight and psychological distress in adult twins: a longitudinal study, *Acta Paediatrica*. 2004, 93: 965-968.
- Chiu H., Yip P.S.F., Chi I., Chan S., Tsoh J., Kwan C.W., Li S.F., Conwell Y. and Caine E.D., Elderly suicide in Hong Kong - a case controlled psychological autopsy study, *Acta Psychiatrica Scandinavica*. 2004, 109(4): 299-305.
- Chong S.Y. and Karlberg J.P.E., Refining the Apgar score cut-off point for newborns at risk, *Acta Paediatrica*. 2004, 93: 53-59.
- Huang J., Zheng G., Irvine E.J. and Karlberg J.P.E., Assessing heterogeneity in meta-analyses of Helicobacter pylori infection-related clinical studies: a critical appraisal, *Chinese Journal of Digestive Diseases*. 2004, 5: 126-133.
- Wong B.C.Y., Lam S.K., Wong R.W.M., Chen J.S., Zheng T., Feng R., Lai K.C., Hu H.C., Yuen S.T., Leung S.Y., Fong D.Y.T., Ho J.C.Y., Ching C.K. and Chen J.S., Helicobacter pylori Eradication to Prevent Gastric Cancer in a High-Risk Region of China: a Randomized Controlled Trial, *The Journal of American Medical Association*. 2004, 291(2): 187-194.
- Yip P.S.F. and Thorburn J., Marital Status and the Risk of Suicide: Experience from England and Wales, 1982-1996, *Psychological Reports*. 2004, 94: 401-407.
- Mok M.Y., Jack D.L., Lau W.C.S., Fong D.Y.T., Turner M.W., Isenberg D.A. and Lydyard P.M., Antibodies to mannose binding lectin in patients with systemic lupus erythematous, *Lupus*. 2004, 13: 522-528.
- Karlberg J.P.E., Hur hanterade vi misstänkta SARS-fall? Skrämdes vårdpersonal av medielarm?, *Läkartidningen*. 2004, 34 (101): 2586-7.
- Huang J., Zheng G.F., Chan G.C.F., Karlberg J.P.E., Lam S.K., Wong B.C.Y., Efficacy of current antiemetic treatments for preventing delayed chemotherapy-induced nausea and vomiting: a meta-analysis of randomized controlled trials. *Clinical Research and Regulatory Affairs*. 2004, 21(3-4): 191-212.

Selected book chapters

- Karlberg J.P.E., Clinical Trials in Paediatrics, In: D. Machin, S. Day and S. Green, *Textbook of Clinical Trials*. John Wiley & Sons, Ltd, 2004, Chapter 3: 45-54.
- Chi I. and Kwan C.W., Social development index: The elderly population, In: R. J. Estes, *Social development in Hong Kong: The unfinished agenda*. Hong Kong, Oxford University Press, 2004.

REMARKABLE EVENTS



2004 Remarkable Events

- February** / Publication of 2003 annual report
- March** / Organization of the Symposium on Clinical Trial Central Laboratory Services
- April** / Launch of ClinCluster
- June** / Exhibition at the Drug Information Association Annual Meeting in Washington DC, U.S.
- July** / Reorganization and expansion of the Board of Directors
- August** / Establishment of the HKU Spinal Cord Injury Fund
/ Enrolment of the 50th student to CTC's master programmes
- September** / Launch of the Master of Public Health (MPH) programmes in Clinical Trials Research Methodology and in Medical Statistics
- November** / Signing of a Collaboration Agreement for clinical trials central laboratory business and a Memorandum of Understanding for clinical research collaboration with the First Affiliated Hospital of Sun Yat-sen University in Guangzhou, China
- December** / Re-inspection of clinical laboratories by the College of American Pathologists (CAP)
/ Inspection of a HKU study site for a multinational phase III clinical trial by the U.S. Food and Drug Administration (FDA)
/ Completion of the first fundraising event of the HKU Spinal Cord Injury Fund, through which a fund of HK\$9 million was raised

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