

RGC Ref. No.: <u>UGC/IDS11/15</u> (please insert ref. above)
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**RESEARCH GRANTS COUNCIL
COMPETITIVE RESEARCH FUNDING SCHEMES FOR
THE LOCAL SELF-FINANCING DEGREE SECTOR**

**INSTITUTIONAL DEVELOPMENT SCHEME (IDS)
RESEARCH INFRASTRUCTURE GRANT**

Completion Report

(for completed projects only)

<p><u>Submission Deadlines:</u></p> <ol style="list-style-type: none"> 1. Auditor's report with unspent balance, if any: within six months of the approved project completion date. 2. Completion report: within 12 months of the approved project completion date.
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Important Note:

In completing the report, please use the following format:

Page limit: Items 1 to 5 and Summary of Completion Report: no page limit
Items 6 to 9: maximum **20 A4 pages** (excluding any appendices and attachments)

Font: Times New Roman

Font Size: **Not smaller** than Point 12

Margin: Two centimeters margin all around

Spacing: Single-line spacing

1. Project Title

Establishment of Healthcare Research Centre

2. Investigator(s) and Academic Department(s) / Unit(s) Involved[#]

Project Team	Name / Post	Department / Unit	Average Number of Hours Per Week Spent on this Project
Project holder* (i.e. Head of Institution)	Dr. MAK Kin-wah / President	Office of the President (w.e.f. 1 February 2017)	5%
Team leader	Prof CHAN Eric Lu-shek#	School of Health Sciences	10%
Team member	Prof BLIGH Annie Sim-wan / Provost (RGC approval date 24 July 2018)	Office of the President (w.e.f. 24 July 2018)	10%
Team member	Dr. FUNG Ita Mo-chi# / Director	School of Health Sciences / Healthcare Research Centre	60%

Team member	Prof LOW Lisa Pau-le / Professor	School of Health Sciences	5%
Team member	Dr. CHAN Wai-yee / Associate Dean	School of Health Sciences	5%
Team member	Dr. TAI Bik-wai / Assistant Professor	School of Health Sciences	5%
Team member	Dr. PAU Margaret Mei-lin / Assistant Professor	School of Health Sciences	5%
Team member	Dr. Ho Wai-shing / Assistant Professor	School of Computing and Information Sciences	5%
Team member	Prof WANG Fu-lee # / Vice-President (Research and Advancement) (Discontinued service on 19 March 2018) (RGC approval date 24 July 2018)	Office of the President	5%
Team member	Prof POON Chung-keung # / Director (Discontinued service on 6 July 2018) (RGC approval date 24 July 2018)	Research Office	5%
Others			

Please state the **key** staff and department/unit involved in the project. Please add row(s) as necessary. Please also highlight the approved changes in project team composition and quote the date of the RGC approval for such changes.

* Refer to "Applicant" for 2015/16 exercise and "Project holder" for 2017/18 exercise onwards.

3. Project Duration

	Original	Revised	Date of RGC / Institution Approval (must be quoted)
Project Start Date	1 January 2016	-	-
Project Completion Date	31 December 2018	31 August 2019	24 July 2018
Duration (in month)	36 months	44 months	24 July 2018
Deadline for Submission of Completion Report	31 December 2019	31 August 2020	24 July 2018

4. Project Objectives

Summary of objectives addressed / achieved:

Objectives*	Percentage Achieved	Remarks**
1. To develop a database for big data in health information to support faculty members research in healthcare and health informatics	1. 100%	1. Nil
2. To set up an extensive data analysis platform to facilitate sophisticated analyses of health information	2. 100%	2. Nil
3. To provide relevant technical support to faculty members for their big data analytics of health information	3. 100%	3. Nil
4. To undertake showcase research projects which examine emerging issues in primary care models and policies	4. 100%	4. Nil
5. To assist faculty members to collect first-hand data to support evidence-based research practice	5. 100%	5. Nil
6. To organize research workshops to build up faculty member's research capacity in healthcare and health informatics	6. 100%	6. Nil
7. To promote cross-disciplinary research collaboration among schools in the Institute for healthcare and related areas	7. 100%	7. Nil

* Please refer to the originally approved objectives. If there are changes in objectives, please highlight the changes and quote the date of RGC approval for such changes.

**Please provide reasons for significant slower rate of progress when compared with the approved implementation timetable.

6. Research Outputs

6.1 What are the accomplishments of the project?

- (i) *Please provide reports on conference, seminar, workshop, exchange programmes or other activities held (if applicable).
(Please provide details of the activities organized, including the theme / objectives of the activities, targeted participants, attendance, analysis of participants, e.g. country of origin, research background, etc., evaluation forms of the activities and a summary of the participants' evaluation. Photos of the activities are preferred.)*

The project has organized the following research seminars / workshops:

1. Date: 6 Oct 2016

Topic: Big Data Analysis in Healthcare: Theory and Applications

Speaker: Dr. Yanghui RAO (Sun Yat-sen University)

Objectives:

- a) Introduce the basic theories of big data analysis
- b) Explain the application of big data analysis in healthcare

Target audience:

- a) Interested colleagues in CIHE and CBCC

Attendance: Total number of participants: 20

Analysis of Participants:

Teaching staff of CIHE

2. Date: 26-29 Oct 2016

Topic: 1st International Workshop on Active Ageing and Digital Inclusion (AADI 2016)

Organizers: The Education University of Hong Kong, The Hong Kong Polytechnic University, Caritas Institute of Higher Education

(Website for the event:

<http://www.wikicfp.com/cfp/servlet/event.showcfp?eventid=55698©ownerid=15214>)

3. Date: 7 Nov 2016

Topic: Learning from Uncertainty for Big Data

Speaker:

Objectives:

- a) Introduce the types of uncertainties in big data
- b) Recommend ways to deal with uncertainties in big data analysis

Target audience:

- b) Interested colleagues in CIHE and CBCC

Attendance: Total number of participants: 14

Analysis of Participants:

Teaching staff of CIHE

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- 4. Date:** 4 May 2017
Topic: Trauma Informed Cares: Confidence and Competence Matters
Speaker: Professor Wendy CROSS
Objectives:
 c) Enhance the understanding in Trauma-Informed Care (TIC)
 d) Highlight the importance of TIC in mental health practice
 e) Innovate practice developments and research in mental health
Target audience:
 c) Interested colleagues in CIHE and CBCC and our external partners
Attendance: Total number of participants: 23
Analysis of Participants:
 Project Officer / Assistant Professor / Research Assistant / Senior Lecturer / Lecturer from CIHE; and one participant from Rainlily.
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- 5. Date:** 15 Jun 2017
Topic: Session 1: Medical Image Retrieval in Peer-to-peer Networks
 Session 2: Big Data Analysis in Bioinformatics: A Machine Learning Perspective
Speaker: (Session 1) Dr. CHEN Wei
 (Session 2) Dr. OUYANG Le
Objectives:
 (Session 1)
 (a) To introduce a distributed image retrieval approach for peer-to-peer networks and its application to the medical image retrieval field
 (b) To present preliminary experiments for the evaluation of the proposed approach
 (Session 2)
 (a) To introduce key concepts in the analysis of big data, including both “machine learning” algorithm as well as “unsupervised” and “supervised” examples of each
 (b) To provide a brief overview of recent developments in big data analyses in the context of precision medicine and health informatics
 (c) To introduce the speakers previous contributions in this area, including ensemble learning, multi-view learning, biomarkers discovery and differential network analysis
Target audience: Interested colleagues in CIHE and CBCC and our external partners
Attendance: Total number of participants: 13
Analysis of Participants:
 Teaching/research staff of CIHE/CBCC, Tung Wah College, Education University of Hong Kong, City University of Hong Kong

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- 6. Date:** 4 Sep 2017
Topic: Training Series on Statistics, Biostatistics (1) - Introduction to Pharmacovigilance and Pharmacoepidemiology
Speaker: Mr. MAN Keng Cheung Kenneth
Objectives:
 a) Describe the basics of Epidemiology/ Pharmacoepidemiology
 b) Understand how to
 - choose one's own study design
 - choose the right statistical method for analysis
 - read and understand research studies
Target audience:
 a) Interested colleagues in CIHE and CBCC and our external partners
Attendance:
 Total number of participants: 23
Analysis of Participants:
 Teaching staff of CIHE, The Open University of Hong Kong (OUHK), and nurses and dispenser working in hospitals in Hong Kong
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- 7. Date :** 18 Oct 2017
Topic : Seminar on Grant Proposal Writing
Speaker: Professor Roger WATSON
Objectives:
 a) Highlight the skills to write a good research grant proposal
 b) Cover the assessments of research proposals for the next round of RGC applications
Target audience: Interested colleagues in CIHE and CBCC and our external partners
Attendance: Total number of participants: 32
Analysis of Participants:
 Teaching staff at CIHE, OUHK, Tung Wah College (TWC); staff from other service divisions of Caritas-Hong Kong; students at CIHE; and nurses working in hospitals in Hong Kong.
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- 8. Date :** 15 Dec 2017
Topic : Training Series on Statistics, Biostatistics (2) - Topic: Introduction of Biostatistical Methods and Confounding Adjustment in Healthcare Research
Speaker: Mr. MAN Keng Cheung Kenneth
Objectives:
 a) Lecture on the basic principles of biostatistics
 b) Review the analysis of the different types of data
 c) Discuss the types of confounders and strategies to deal with confounders
Target audience: Interested colleagues in CIHE and CBCC and our external partners
Attendance: Total number of participants: 33
Analysis of Participants:
 Teaching staff at CIHE, OUHK, Tung Wah College (TWC); and professionals working in hospitals in Hong Kong.

9. Date : 9 Feb 2018

Topic : Training Series on Statistics, Biostatistics (3) - Topic: Introduction of Systematic Review and Meta-analysis

Speaker: Mr. MAN Keng Cheung Kenneth

Objectives:

- a) Review the background of systematic review
- b) Review the conduction of systemic literature search and quality assessment of study
- c) Enhance understanding in meta-analysis

Target audience: Interested colleagues in CIHE and CBCC and our external partners

Attendance: Total number of participants: 37

Analysis of Participants:

Teaching staff at CIHE, OUHK, Tung Wah College (TWC), George Clinical; and professionals working in hospitals in Hong Kong. Participants' profile included dispenser, Department Manager, Registered Nurse, Advance Practice Nurse, Senior Lecturer, Lecturer, Assistant and Associate Professor, Clinical Research Compliance Manager, Nursing Student, Research Assistant, and Project Coordinator.

10. Date: 14 May 2018

Topic : Training Series on Statistics, Biostatistics (4): Healthcare Research in Big Data Era; Research Protocol Writing

Speaker: Mr. MAN Keng Cheung Kenneth

Objectives:

- a) Provide an overview of modern epidemiological studies carried out in large databases
- b) Help participants to consolidate and apply everything learnt from all four statistics in healthcare seminars / workshops to generate a research proposal: from research questions, data handling, proposed statistical method

Target audience: Interested colleagues in CIHE and CBCC and our external partners

Attendance: Total number of participants: 31

Analysis of Participants:

Teaching staff at CIHE, OUHK, Tung Wah College (TWC); and professionals working in hospitals in Hong Kong. Participants' profiles include Department Manager, Registered Nurse, Advance Practice Nurse, Ward Manager, Senior Lecturer, lecturer, Nursing Specialist, and Project Coordinator.

11. Date : 16 Dec 2019

Topic : Webinar*: How and What: The Best to Disseminate Research Results

Speaker: Professor Suzanne KUYS

Objectives:

a) Enhance the skill for research results dissemination

Target audience: Interested colleagues in CIHE and CBCC and our external partners

Attendance: Total number of participants: 39

Analysis of Participants:

Teaching staff at CIHE, OUHK, Australian Catholic University; and professionals from the Hospital Authority of Hong Kong.

*Due to the social instability of Hong Kong, the speaker was advised against travelling to Hong Kong. Therefore, the seminar was re-scheduled several times and, finally, was conducted online.

The project has co-organized the following conferences:

12) Community Health Conference 2018

Date: 30 August 2018

Organizers: Caritas Institute of Higher Education (CIHE) and The Open University of Hong Kong (OUHK)

Objectives:

- a) Enrich knowledge in the primary care models to improve community health
- b) Promote high quality research through the sharing of knowledge by experts
- c) Provide a platform for experts to exchange and share evidenced-based practice in research findings
- d) Offer opportunities for participants to present their latest research in the areas of community health

Target audience:

- i. Academics in the healthcare field
- ii. Healthcare professionals
- iii. Students in the various healthcare disciplines

Attendance: approximately 274 participants

Analysis of Participants: Participants came from different sectors in the healthcare field, including tertiary education institutions of Hong Kong and Macau, private/private hospitals of Hong Kong, the Hospital Authority of Hong Kong, Department of Health of HKSAR, professional bodies, social services organizations, health service organizations / associations and pharmaceutical companies.

The work of the Healthcare Research Centre was also showcased in this conference.

- (ii) *Please provide reports on asset purchase such as acquisition of research facilities, communal equipment, software licence, dataset and / or status of infrastructure / physical research structure building such as research centre, research supporting unit (if applicable).*

(Please provide supporting documents and / or photos, and provide the utilization rate.)

The following computing equipment was purchased under this project:

1. One PowerEdge r930 Server (S/N: GC2K7K2)
2. One piece of APC Netbotz 13.56 MHZ Rack access control
3. One APC Netshelter Rack
4. One Windows Server 2016 Data Centre License
5. IBM SPSS Statistical Analysis Software which includes:
 - a. Four sets of IBM SPSS Statistics Base
 - b. One set of IBM SPSS Statistics Base with 14 add-on modules
 - c. Five sets of IBM SPSS Amos
6. MATLAB license:
 - a. Five MATLAB, individual licenses
 - b. Individual license for:
 - Bioinformatics Toolbox
 - Database toolbox
 - Optimization toolbox
 - Parallel computing toolbox
 - Simulink report generator
 - Statistics & Machine learning toolbox
 - Spreadsheet link
 - Matlab report generator
 - c. One Matlab DVD media kit
7. Five OriginPro 2017 Perpetual Node-Locked Academic Licenses

All computing equipment for data management listed above is sustained by the institute for current use. The software is made available for use by staff upon request and booking. The data management system is shared among all staff in the institute for healthcare research purposes.

The following clinical equipment was purchased under this project:

1. Four Ishihara colour chart (24 pages)
2. Eight 3M Littmann Stethoscope
 - a. Adult x 4pcs
 - b. Paedatric x 4pcs
3. Four ROCHE, Accutrend Plus Meter set - Glucose/ Cholesterol/Triglyceride
4. Four Wheeled reclining high back chair
5. Four Deluxe pedal exerciser
6. Four NRS physio gym ball
7. One NRS Height adjust adult parallel walking bars
8. Ten Softouch cold hot pad
9. Two Cameras: Canon PowerShot G1X Mark II
10. Eight Digital voice recorder: Sony ICD-PX470
11. Eight Blood Glucose and Ketone Monitoring System:Abbott Free Style Optium (Model: Neo / Neo H)
12. Four Aroma Diffuser
13. Four 3-tier Plastic Trolley
14. Four AED (Training mode in Eng. Lang): Defibtech
15. Two O₂ Concentrator: Nidek, Nuvo Lite
16. One Refrigerator 2 doors with large freezer w/ drawer: Siemens (2 doors) Model: KG33NNL30K, 279L
17. Eight Digital Scale: DETECTO
18. Four LCD Mercury-free Sphygmomanometer
19. Two Scandisk SDHC 32GB Memory cards (For using with Item no. 9 Camera)
20. One BAILIDA Injection Trolley (BM-NC3405) and accessories:
BAILIDA sharps container & side rail SIZE :(110 x 113 x 215mm)
BAILIDA IV POLE with ABS cushion, height adjustable
BAILIDA 3" adjustable divider set in drawer
BAILIDA 6" adjustable divider set in drawer
21. Four Bailida - Folding mobile screen (BM-FS165-08)
22. One 3M™ Littmann® Cardiology IV Stethoscope
23. One 3M™ Littmann® Classic III Stethoscope
24. One ECG machine and accessories): EDAN SE-1200 Express
EDAN ECG Electrodes Adaptors (1 set)
EDAN Rolling Stand for SE-1200 ECG Machine (1)
25. One Letter "E" Eye Chart
26. One Silicon resuscitator - adult
27. Two Tendon hammer, adult
28. Two Tuning fork - 128
29. Two Tuning fork - 512
30. One Diagnostic set:Welch Allyn 3.5V
31. One Electric examination bed: Bristolmaid; EC020 Couch Examination, two section
32. Two Finger tip pulse oximeters
33. Two Vital Signs Monitors with stand
34. One Diaspect Analyser and Accessories
(1x Diaspect Hemoglobin Analyser & 2x Diaspect Hb Cuvette 100 pcs)
35. One DeBest Hot & Cold Pack
36. One Step Ahead Foot Sensation Test Monofilament
37. One Thermocare Moisture Deep Heating Pad (standard 25.6" x 11.8")

38. Two AliveCor Kardia Mobile ECG (AC-009-UA-C)
39. One CardioChek PA Analyser
40. One Diagnostic point-of-care Analyser

The clinical equipment above is all in use for research purposes. They are also used in the CommunityHealth@CIHE, an integrated health centre set up subsequent to this project, to collect health data for the research projects being planned. The detail of the centre can be found in Section 10.2 of this report.

The project has also purchased one dataset from the Hospital Authority. The availability of this dataset enables the project to answer some research questions in the primary health care system. Details can be found in the section below (Section 6.1 (iii))

(iii) Please provide reports on research activities carried out (if applicable).

During the project period, the Healthcare Research Centre assisted in three ongoing/completed staff or school projects (Healthcare Research Centre-assisted projects), and initiated the groundwork for three of its own projects (the showcase projects / Healthcare Research Centre-initiated projects). A collaborative project with the Bioethics Resource Centre of the Holy Spirit Seminary College of Theology and Philosophy was also made possible. In total, the Healthcare Research Centre has been involved in seven projects, five of which have been completed.

The aim of the staff training provided by the Healthcare Research Centre was to enhance the staff's ability in research from research study planning, through data analysis, to result dissemination, and to introduce the use of big data in research. A total of 11 workshops and seminars were conducted. The staff of CIHE and those from other health and tertiary education institutes were welcomed to join these training sessions, to encourage inter-institutional communication and possible collaboration. The needs for training in healthcare research collected from the staff were incorporated in the planning of the seminars. Research experience and results sharing sessions by overseas healthcare professionals were also organized to enrich the staff's exposure. Please see Items 1 to 11 in Section 6.1(i) for details of the training seminars and workshops.

In addition to the mentioned seminars and workshops, a one-day conference on community health was organized (Please see Item 12 in Section 6.1(i)). Renowned speakers from different countries were invited to share their findings and views on community and primary health care, and the research approaches used in community and primary health care. Participants included healthcare professionals and members of the academia. This conference gave the staff of CIHE and fellow researchers an opportunity to showcase their achievements, and inspired colleagues in enhancing our capability to examine research issues in emerging primary care models and policies.

- 6.2 Please describe where and how the IDS Research Infrastructure Grant project assisted in building up the research capacity of the institution in its strategic areas (e.g. has the IDS Research Infrastructure Grant project facilitated the academics in formulating their research proposals under the Faculty Development Scheme, etc.).

While achieving project's objectives, the activities organized during the project period have enhanced the institute's research capacity in its strategic directions:

1) Enhance staff's research capability to conduct research studies

The research seminars equipped the academic and research staff with research knowledge and skills for conducting of their own research projects. The varied topics of the seminars / workshops systematically covered formulation of research questions, proposal writing, data analysis, yielding research results and result dissemination. Renowned academics and data analysts were invited as speakers, to allow understanding of the topics from different perspectives. The use of big data analysis in healthcare was elucidated for better staff understanding of its use and the capacity building needed for research with big data. Research experience and results sharing sessions by overseas healthcare professionals also equipped the academic and research staff with the up-to-date research results and valuable advice.

2) Develop research capability to make data analytics and other research platform available to all schools in the institute

With the computing equipment procured and setup, the institute is now equipped with a database / server to facilitate research-related activities by all schools of the institute. Big data analytic tool and data visualization tools have also been made available to all academic and research staff. More sophisticated analyses in healthcare are now possible with an institute level arrangement for technical support to be assisted by the academic and research staff from the School of Computing and Information Sciences. The infrastructure is designed to protect the data during downtime and ensure data privacy and security. Based on the experience of the initial projects, this infrastructure has now been opened up for the research-related activities of all academic and research staff of CIHE.

The server has enabled the collection of data and the subsequent data analysis required for the CommunityHealth@CIHE, a new practical knowledge generation venture with 8 research projects generated as described in Section 10.2.1. Two of these projects are intended for forthcoming FDS applications. They have already been awarded the institutional research fund, which supports pilot studies to prepare for future competitive fund applications. The CommunityHealth@CIHE, designed for an integrated study of the primary care models for various health aspects, requires the collection and systematic management of a wide variety of data:

- Visit appointment dates and time;
- Past medical history;
- Details, including objective and subjective information, during professional consultation;
- Data from medical imaging;
- Drug management information;
- Payment types for each visit; and
- Item consumption and sales reporting.

The above information data are intended to be analyzed using big data analytics and data mining techniques.

Supported by the institute and successful non-RGC fund applications, the CommunityHealth@CIHE is also equipped with an interface with the government's Electronic Health Record Sharing System (eHR). Relevant and useful information available in eHR can be entered into our clinical information management system and used for data analysis. This broadens the scope of clinical data available for the

research as well as the patients.

As an enhancement of our data collection strategy, a mobile app is under development by the institute for the collection of patient data at home. The additional data will be accumulated on the healthcare research infrastructure set up to progressively enhance the volume and variety of the data, including:

- Patients' vital signs at home;
- Exercise records;
- Health events (organized by the CommunityHealth@CIHE) attendance record; and
- Communication records (through the app) with the CommunityHealth@CIHE.

More effective investigation, prediction and evaluation of the primary care model will thus be enabled by the analytics and database, which is being progressively enriched through the CommunityHealth@CIHE.

3) Facilitate research collaborations in inter-disciplinary and applied research in community health / healthcare

The training seminars and workshops were made available to other tertiary education institutions and our external partners. They bring together academics and healthcare professionals from various disciplines to enable interdisciplinary discussions, which facilitate collaborations. Moreover, the Community Health Conference 2018 provided a forum and channel for healthcare professionals, academics and students to come together, share ideation, and explore collaboration to enhance community health research.

4) Promote research culture in the institute

The training seminars and workshops prepared the academic and research staff with the foundational knowledge in research and knowledge in biostatistics to initiate or enhance their own research activities. The Community Health Conference 2018 offered good opportunities for the sharing of views, research ideas and other relevant issues, and for meeting other researchers with similar research interests. These activities and the monthly research seminars organized by the Research Office of CIHE complement each other in the cultivation of the research culture in the institute by arousing interests in research and giving academic staff opportunities to team up for future projects.

6.3 If the project has not met its original objectives, why?

The project has met its original objectives.

6.4 (a) Please provide details e.g., title, authorship, publication dates, etc. and attach an abstract of each publication reported. Please place asterisks on publications involving inter-institutional collaborations.

The publications (1, 2, 3, 4, and 9 below) examine the use of data science in the healthcare industry and are the groundwork in developing our primary care model. These reflect our work in achieving the project objectives of this infrastructure research grant and the work will be further developed after the completion of this grant project. The publications on bioethics (5, 6, 7 and 8 below) are based on inter-institutional

development in the directions of our Institute's strategic plan.

1. *X. Bai, S. Yang, F.L. Wang and M. Knapp, "Social support and sense of loneliness in solitary older adults", In 1st International Symposium on Emerging Technologies for Education (SETE 2016), Lecture Notes in Computer Science, Vol. 10108, pp326-330, Rome, Italy, 2016.
 2. *T.L. Wong, H. Xie, D. Zhou and F.L. Wang, "Using iBeacon technology for active aging learning", In 1st International Symposium on Emerging Technologies for Education (SETE 2016), Lecture Notes in Computer Science, Vol. 10108, pp331-336, Rome, Italy, 2016.
 3. Lam KH. (2018). A Literature review of Health Seeking Behavior in Hong Kong. Community Health Conference 2018. Hong Kong, China.
 4. Lee YY. (2018). Osteoporosis knowledge among Chinese men measured by Chinese version of Osteoporosis Knowledge Assessment Tool: A literature review. Community Health Conference 2018. Hong Kong, China.
 5. *Lee, Y.Y., & Fung, I.M. (2017). Current review of the influence of Chinese tradition and Catholic church teaching on advance directives. 18th Asian Bioethics Conference, Seoul, Korea.
 6. *Lui, D, Chan, E., Fung IM, & Lee, Y.Y. (2017). Views on advance directives of laity in Catholic churches. 5th Bioethics Conference of Bioethics Resource Centre (HSSC), Hong Kong.
 7. *Kung Kao Po News (2017). 明愛專上學院堂區調查了解對預設醫療指示看法.
 8. *Lui, D., Fung, I. M., & Yip, C. S. C. (2018). Catholic laities' attitude towards principles concerning end-of-life care decision in Hong Kong. 13th World Conference on Bioethics, Medical Ethics and Health Law, Jerusalem.
 9. Li, C.C., Fung, I.M.C., and Chan L.S.E. (2020) Health Seeking Behaviors among Community-dwelling People in Hong Kong: Implications for Community Health Services. 2020 Taiwan International Nursing Conference Endorsed by ICN, Taipei, Taiwan.
This conference will take place from 9-11 September 2020, and the poster design is still in development.
- (b) RGC funding should have been acknowledged in all activity(ies) / publication(s) / conference(s) papers listed in (a) above. If no acknowledgement has been made in any of the event / publication / paper, please indicate and provide explanations.

RGC funding has been acknowledged either in written or verbal form, in all listings in (a)

above, except for Item 7. Item 7 was a phone interview aiming to inform the Catholic society that such a project was being conducted. The funding acknowledgement was verbally made but it was not recorded in the printed news report.

6.5 Research staff trained

(Please provide names and capacities of research staff trained and elaborate on what training has been provided.)

Academic and research staff were trained in the training seminars and workshops as detailed in Section 6.1(i). The details of the training provided in each seminar and workshop can be found in Section 6.1(i).

6.6 Specific products

(e.g. patents, software or netware, instruments or equipment, infrastructure developed)

A data management infrastructure was set up for storage and management of research data for all academic and research staff in the institute.

6.7 Other education activities and / or training and development

All education activities and / or training and development are presented in Section 6.1(i) and Section 6.5.

6.8 Please highlight any deliverables indicated in the project implementation timetable endorsed by RGC, which have not been covered or achieved as per sections 6.1 to 6.7 above, and explain / elaborate.

All deliverables in the approved implementation timetable have been achieved as per sections 6.1 to 6.7 above.

6.9 Please elaborate the role of the managing team in coordinating and managing the project.

The project was managed at both the institutional level and project level:

1) At the institutional level, the project was overseen by the management team led by the President. Members included the Provost, Vice President (Research and Advancement), Dean of the School of Computing and Information Systems and Dean of the School of Health Sciences. This team gave directions to the project team and assured project quality.

With the Centre infrastructure now open to researchers of all schools of CIHE, the management team will continue to discuss the database and project pipeline generated, ongoing funding applications, and future development of the Healthcare Research Centre and ways to sustain the Centre beyond the present RGC-funded project. The management team connected collaborating partners with the Centre staff for potential developments. The management team also met formally and informally with the project team to establish institute-wide policies, reflect on the operation, address important issues and conduct annual reviews.

2) At the project level, the project was overseen by the project team listed in Section 2 led by the Dean of School of Health Sciences, and implemented by the supporting staff led by the Director of the Healthcare Research Centre. The Director oversaw the research activities and the research supporting activities, monitored the budget and

maintained appropriate controls.

7. Awards And Recognition

- 7.1 Have any research grants been awarded that are **directly** attributable to the results obtained on this IDS Research Infrastructure Grant project? *(Please provide details)*

The Bioethics Resource Centre of the Holy Spirit Seminary College of Theology and Philosophy awarded a research fund of HK\$112,640 for the Healthcare Research Centre to conduct a study on advance directives. This IDS Research Infrastructure project provided the impetus for the research funder in this case to explore collaboration with our institute. The equipment and supporting staff established were also essential for undertaking research in the realm of bioethics in healthcare and advance directives, which is one of the hot current issues in the elderly care services.

- 7.2 Other awards and recognitions as a result of this IDS Research Infrastructure Grant project *(Please specify)*

Amgen Asia Holding Limited donated US\$50,000 to support learning and teaching, though not research, through health assessment events conducted through CommunityHealth@CIHE (see Section 10.2) to promote community health. The donor learnt about CIHE through our research work in community health. The donation was helpful in education of the elderly community and informing teaching with the latest knowledge through health assessment events for the public. The donation was used for supporting teachers' cost, consumables for student's learning, equipment transportation, health promotional materials, and other justifiable costs, in relation to teaching and learning and these health assessment events. While not a research grant, this donation would not have been possible without the IDS Research Infrastructure Grant and the impact it created as presented in Section 8.1.

8. Other Impacts

- 8.1 What are the current and expected impacts of the project in terms of its contribution to the local and regional economic and societal well-being? *(e.g., technology transfer, collaboration with external organizations, etc.)*

1. Enhancement of Institutional Research Capacity

The institutional research capacity has been enhanced through a) the computing equipment setup and enhancement of technical support, b) knowledge enhancement of the teaching and research staff, c) experience sharing with experienced professionals, and d) network and collaboration building. These enhancements lay the foundation for further development of individual staff and the institute.

2. Facilitation of Collaborative and Interdisciplinary Research

The project has enabled the establishment of a specific unit, the Healthcare Research Centre for research capacity enhancement. The Healthcare Research Centre was made known to the external institutions and organizations, thus making possible subsequent projects with external partners, such as the Bioethics Resource Centre of the Holy Spirit Seminary College of Theology and Philosophy, to research in the areas of bioethics and public health. The Healthcare Research Centre has also become and is expected to continue as a platform for inter-institutional collaboration and interdisciplinary research. New collaborative work is presented in Section 10.3.

3. Strengthening of Research Emphasis for the School of Health Sciences

Aside from the institutional research capacity building as mentioned above, this project enhanced the understanding of our institutional research positioning by other research and health institutions. In particular, the project strengthened our foundation for envisioning the applied research direction of studying primary care models and for conducting the necessary groundwork to achieve knowledge enhancement. A platform was provided to learn more about the current healthcare systems in Hong Kong and the neighboring countries, and to investigate the different research approaches used by other researchers to study the healthcare system.

Moreover, a non-RGC proposal was generated with funding successfully granted to establish the CommunityHealth@CIHE as an integrated study in multiple disciplines and in primary health care models. This new project gives the School of Health Sciences a pipeline or research projects and potential FDS applications, with the aim of maintaining health and enabling the public to stay healthy. The detail can be found in Section 10.2. The long term impact envisioned is to contribute to policy making in the relevant primary health areas.

8.2 Others (*Please specify*)

The current and expected impacts have been presented in Section 8.1.

9. Statistics on Research Outputs

	Peer-reviewed Journal Publications	Conference Papers	Scholarly Books, Monographs and Chapters	Patents Awarded	Other Research Outputs (please specify)	
No. of outputs arising directly from this project		7			Type	No.

10. Sustainability of The IDS Research Infrastructure Grant

10.1 Whether there are new ideas evolved **directly** from the project?

The resultant impacts, describe in Section 8.1, shed lights on the approaches in examining models to enhance and maintain community health through the CommunityHealth@CIHE presented in Section 10.2.

10.2 Whether there are new projects evolved **directly** from the project?

1) New Venture

- a. Given the recent promulgation of the HKSAR government policy direction to strengthen the primary care system and the position of CIHE as one of the major

providers of health sciences education in the self-financing post-secondary sector, the research direction of our institution is to further enhance our capability to conduct such research. An integrated initiative, named CommunityHealth@CIHE, has been established by the Healthcare Research Centre with a grant of HK\$3.5 million by the WoFoo Foundation Limited.

Not only can the Healthcare Research Centre leverage CommunityHealth@CIHE to widen and sustain the healthcare data collection established through the present RGC-funded project, a pipeline of projects is being planned to generate knowledge on health conditions, long term care and various protocols, which, when proven and upon reaching maturity, can be rolled out district by district, for example through the newly established government district health centre, as a social innovation for helping to tackle the challenges of an increasingly ageing population in Hong Kong and other parts of the world. There is much potential for practical research projects, informing teaching and knowledge transfer in the multiple health disciplines of nursing, physiotherapy and dispensing offered by CIHE for contribution to a critical challenge faced by society, and for developing the paradigm of maintaining health rather than just curing diseases.

In addition to research activities, The CommunityHealth@CIHE serves as the training ground for the students of the CIHE and site for clinical skills update for teaching staff. Health assessment events are organized to integrate research, informing teaching and knowledge transfer to the public.

- b. The School of Health Sciences launched its undergraduate programme in physiotherapists in the summer of 2020. Research laboratories in physiotherapy are being set up. The CommunityHealth@CIHE can also serve as an integrated platform for clinical updates of the teaching staff, clinical site for students' training, and site for research activities. Given the clinical environment provided by the CommunityHealth@CIHE, inter- and multi- disciplinary clinical investigation and data collection involving nurses, pharmacists, and physiotherapies will be possible, with much potential. In fact, a research proposal has been submitted for a non-RGC funding body and other proposals are being planned for RGC.

2) New Collaborative Projects

As mentioned in Section 8.1, our strengthened emphasis and dedication to community / primary health has led to collaboration as co-organizer of a community health conference on 26 Oct 2018. CIHE also hosted a panel discussion on the topic of Sustainable Primary Health Care for the Hong Kong's Ageing Population.

Given its aspiration and strengthened role in community health and enhanced research capacity, the Healthcare Research Centre continues to serve as a platform for external collaboration and interdisciplinary research. Collaboration between the School of Public Health of the University of Hong Kong and the Healthcare Research Centre on research into antimicrobial resistance is ongoing, with CommunityHealth@CIHE now assisting in the subject recruitment and data collection.

Building on its initial research work in bioethics, CIHE is now invited to co-organize a bioethics conference on the COVID-19 pandemic by the Bioethics Resource Centre

of the Holy Spirit Seminary College of Theology and Philosophy. The conference is in the planning stage and is anticipated to be conducted in September 2020.

10.3 Whether there are new collaborations developed **directly** from the project?

Please refer to Section 10.2 for details.

10.4 Please give details on how much money and from which sources has been obtained for the specific purpose of continuing the work started under this IDS Research Infrastructure Grant project.

Funding Body	Amount Funded	Purpose(s)
WoFoo Foundation Limited	HK\$3.5 million	To establishment the CommunityHealth@CIHE for the following purposes: c. Clinical training site for staff and student d. Clinical service provision to improve and maintain community health e. Research activities
Amgen Asia Holding Limited donated to (see Section 7.2)	US\$50,000	To support the learning and teaching activities through health assessment events, which are conducted through the CommunityHealth@CIHE to promote community health.

11. Public Access Of Completion Report

(Please specify the information, if any, that cannot be provided for public access and give the reasons.)

Information that Cannot Be Provided for Public Access	Reasons
Appendices	The appendices with research ideas and restrictive information, such as names, photos, and affiliation of event participants, evaluation records, information which may disclose personal identity and sensitive information, may not be suitable to be provided for public access.

RGC Ref. No.:

UGC/IDS11/15

(please insert ref. above)

**INSTITUTIONAL DEVELOPMENT SCHEME (IDS)
RESEARCH INFRASTRUCTURE GRANT**

Summary of Completion Report

(Please list all the stages since project inception)

Project Title: Establishment of Healthcare Research Centre

Stage Completed	Period		Milestones	
	(Month / Year) to (Month / Year)		Deliverables to be Achieved² (Please summarize in <u>three</u> bullet points where details should be left to the report proper)	% of Each Deliverable Achieved³
1	01/2016 to 12/2016		1. Procurement of facilities and equipment to enable the operation of the Healthcare Research Centre 2. Development and set up of big data database of health information and analytics platform 3. Initiate cross-disciplinary collaborative research projects and workshops	1. 100% 2. 100% 3. 100%
2	01/2017 to 12/2017		1. Initiate and conduct showcase projects 2. Conducted seminars to increase staff's research capacity and to promote interdisciplinary collaboration 3. Develop a hub for research projects in health care	1. 100% 2. 100% 3. 100%
3	01/2018 to 08/2019		1. Provision of clinical support 2. Showcase the work for the Healthcare Research Centre	1. 100% 2. 100%

Stage Completed	Period	Milestones	
	(Month / Year) to (Month / Year)	<p style="text-align: center;">Deliverables to be Achieved² (Please summarize in <u>three</u> bullet points where details should be left to the report proper)</p>	<p style="text-align: center;">% of Each Deliverable Achieved³</p>
		3. Organization research and reflection workshops	3. 100%
Total to-date:			

- Note:
- ¹ Justifications for significant under-spending or over-spending ($\geq \pm 10\%$) should be given in **section 5.1** of the completion report.
 - ² The key milestones to be achieved by the project within the respective stage as indicated in the approved implementation timetable.
 - ³ Justifications for significant slower rate of progress compared with the approved implementation timetable should be provided in detail in **section 4** of the completion report.