HKUMed and the Correctional Services Department launch a pilot programme for hepatitis C virus screening and treatment for eligible persons in custody (PICs) on a voluntary basis.
香港丙型肝炎概況及挑戰
Overview and challenges of hepatitis C in Hong Kong

港大醫學院臨床醫學學院內科學系副系主任
腸胃及肝臟科主任兼講座教授
李樹芬醫學基金會基金教授（內科）
袁孟峰教授

Professor Richard Yuen Man-fung
Li Shu Fan Medical Foundation Professor in Medicine
Chair Professor and Chief, Division of Gastroenterology and Hepatology, Department of Medicine
Deputy Chairperson, Department of Medicine
School of Clinical Medicine, HKUMed
What is Hepatitis C?

- Caused by hepatitis C virus (HCV)
- ~70% Individuals infected with HCV may develop chronic hepatitis
  - HCV can still be detected in blood six months after infection
- Transmitted through contact with blood or body fluid, such as:
  - Shared syringe
  - Sexual intercourse
  - Mother-to-child transmission during labour etc.
- HCV infection is mostly asymptomatic
Hepatitis C increases the risk of developing cirrhosis and liver cancer

- 健康肝臟 (Healthy liver)
- 肝臟受丙肝病毒感染 (Liver infected with HCV)
- 肝硬化 (Liver cirrhosis)
- 肝癌 (Liver cancer)
丙肝高危人士
High-risk groups or factors of Hepatitis C

• 注射毒品 Individuals who inject drugs
• 愛滋病感染者 Individuals infected with HIV
• 男男性接觸者 Men who have sex with men
• 曾輸入可能受污染的血液製品 Transfused blood products that may be contaminated
• 曾以未被徹底消毒的刺針紋身／穿環 Tattoo/ piercing with a needle that has not been thoroughly disinfected
• 曾經入獄人士／服刑中的在囚人士 People with history of incarceration/ current persons in custody*

Source: Viral Hepatitis Control Office, Department of Health (https://www.hepatitis.gov.hk/tc_chi/what_is_hepatitis/hepatitis_e.html)

Prevalence: 0.32%
~22,000 individuals infected with HCV
丙型肝炎治療
Treatment of Hepatitis C

傳統治療 Traditional treatment:
聚乙二醇干擾素 + 利巴韋林
Peginterferon alfa + ribavirin

新一代標準治療 Standard treatment:
直接抗病毒藥物
Direct-acting antivirals (DAA)

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<td>Peginterferon alfa + ribavirin</td>
<td>Direct-acting antivirals (DAA)</td>
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~40% (~ 主流丙肝病毒型 Major HCV genotype) <80% (~ 其他丙肝病毒型 Other HCV genotypes)

治癒率 Cure rate 90-100%

注射 Injection 給藥途徑 Route 口服 Oral

療程 Treatment duration 8 - 12周 weeks

中等 ( 疲倦、發燒、發冷、抑鬱 )
Moderate (fatigue, fever, chills, depression)

副作用 Side effects 輕微 ( 疲倦、頭痛、噁心 )
Mild (fatigue, headache, nausea)

*自2020年10月起，醫管局已全面提供口服直接抗病毒藥物，用以治療不同嚴重程度的丙型肝炎病人
*Since October 2020, the Hospital Authority has expanded the access of DAA treatment to all hepatitis C patients regardless of disease severity

港大醫學院推行丙型肝炎篩查先導計劃
採用「目標群組消除」策略
The CHIME programme by HKUMed: Screening, linkage to care and treatment of chronic hepatitis C infection in high-risk populations in Hong Kong

CHIME programme: Conquering Hepatitis via Micro-Elimination
研究設計 Design

Hepatology team @ HKUMed partnered with NGOs in Hong Kong that run halfway houses or drug rehabilitation programme

納入條件 Inclusion criteria

Individuals who are undergoing rehabilitation in halfway houses or drug rehabilitation centres

- 曾濫藥人士 Subjects with history of illicit drug use
- 曾共用針筒人士 Individuals who have shared needles, syringes or other equipment to inject drugs
- 曾經入獄人士 Subjects with prior imprisonment

排除條件 Exclusion criteria

- 已經或現正接受丙肝治療 Already on antiviral therapy for known HCV

時間表 Timeline

COVID-19

2019 Q3 ➔ 2021 Q4

快速測試 POC testing

護理聯繫 Linkage to care

處方藥物完成計劃 DAA and discharge

DAA, direct-acting antiviral; NGOs, non-governmental organizations; POC, point-of-care; PWID, persons who inject drugs

Mak LY: AASLD 2022 oral session parallel 23
2年期间进行共22次探訪

22 site visits were conducted over a 2-year period

共為396人進行篩檢

Total number screened: 396

曾接觸丙肝病毒(anti-HCV+ve): 229

現為帶病毒者(HCV RNA+ve): 187

成功治癒

Cured

不成功治癒

No cure
小結
Summary

- HCV infection may lead to cirrhosis and liver cancer, posing a serious threat to health
- Direct-acting antivirals (DAA) can cure most of HCV infection
- HCV infection is mostly asymptomatic and may result in delayed treatment
- Prevalence of hepatitis C is low in Hong Kong and hard to identify cases by mass screening

找出丙肝患者安排治療，為消滅丙肝的關鍵
Identifying hepatitis C among high-risk patients for treatment is the key to eliminating the disease

港大醫學院研究團隊證明「目標群組消除」策略有效及可行
The HKUMed research team has demonstrated the feasibility and efficacy of the ‘micro-elimination’ approach
Introduction of the HCV pilot screening programme for persons in custody

Dr Loey Mak Lung-yi
Clinical Assistant Professor
Division of Gastroenterology and Hepatology, Department of Medicine
School of Clinical Medicine, HKUMed
HK Viral Hepatitis Action Plan 2020-2024

- Launch awareness campaign for the general population
- Provide professional training
- Educate at-risk populations
- Build supportive environment
- Conduct ongoing surveillance
- Develop local indicators
- Expand access to DAA
- Micro-elimination of HCV infection in high-risk groups
- Promoting HCV testing in PWIDs
「目標群組消除」策略

**Micro-elimination**

- 按照環境、地理區域、處所、分組人口及年齡等因素，去界定及劃分出特定的人口組別，然後實施針對性措施，以逐步實現最終消除疾病的目標。Defines and segments population groups by demographics, such as age, subpopulations, environmental factors, geographical areas and premises, for which tailor-made measures are designed and implemented to gradually eliminate diseases.

- 以丙肝為例，根據丙肝的疾病負擔來選定目標群組，在較小且明確劃分的高風險群組落實干預措施，有助更快及更有效率地實行消除丙肝的計劃。In the case of hepatitis C, the target groups are defined by the disease burden. Implementing intervention measures in smaller, well-defined high-risk groups will help achieve the goal of eliminating hepatitis C more efficiently and effectively.

丙肝高危群組Hepatitis C high-risk groups
- 曾吸毒人士 Former drug addicts
- 曾共用針筒注射毒品人士 Individuals who have shared syringes for injecting drugs
- 曾入獄人士等等 Former persons in custody
目標群組消除：為本港在囚人士推行丙肝醫護計劃
Development of a hepatitis C infection care model for persons in custody: a pilot programme for micro-elimination of hepatitis C infection in Hong Kong

項目主要負責人 Programme led by:
港大醫學院臨床醫學學院內科學系袁孟峰教授及麥龍兒醫生
Professor Yuen Man-fung (Chair Professor in Hepatology, HKUMed)
Dr Loey Mak Lung-yi (Clinical Assistant Professor, HKUMed)

參與項目單位/機構 Involved parties:
• 香港特別行政區政府懲教署 Correctional Services Department, The Government of HKSAR
• 港大醫學院臨床醫學學院內科學系 Department of Medicine, School of Clinical Medicine, HKUMed
• 瑪麗醫院內科部門 Department of Medicine, Queen Mary Hospital, Hong Kong
• 醫院管理局 Hospital Authority
• 香港大學社會科學學院 School of Social Sciences, HKU
• 香港中文大學內科及藥物治療學系 Department of Medicine and Therapeutics, CUHK
• 威爾斯親王醫院內科及藥物治療學系 Department of Medicine and Therapeutics, Prince of Wales Hospital, Hong Kong
• 香港特別行政區政府衛生署 Department of Health, The Government of HKSAR
計劃目的
Objectives

主要目標 Primary aim:
發展亞洲以至於本港特有的護理聯繫模式，幫助在囚人士實行目標群組消除丙型肝炎病毒。過程評估的指標包括：參與率、等待時間、治療率、療效率、退出率

To develop an Asian-specific linkage-to-care model to aid micro-elimination of HCV among persons in custody. The metrics of process evaluation include: enrolment rate, waiting time, treatment initiation rate, compliance rate, and dropout rate

次要目標 Secondary aims:

• 檢查在囚人士中丙型肝炎病毒的流行情況以及丙型肝炎病毒感染的特徵（患有晚期肝病的比例、與其他血源性病毒的合併感染、基因型分佈、心理社會特徵）To examine the prevalence of HCV among persons in custody and the characteristics of HCV infection (proportions with advanced liver disease, co-infection with other blood-borne virus, genotype distribution, psychosocial profile)

• 檢視治療成功率、不良事件和治療前後心理因素的改變 To examine the treatment success rate, adverse events and improvement in psychosocial outcomes
Subjects

納入條件 Inclusion criteria
1. 在囚人士 persons in custody
2. 年齡 ≥ 18歲 age ≥ 18 years old
3. 被定罪而餘下監禁時間 ≥ 9個月 convicted with remaining sentences ≥ 9 months

排除標準 Exclusion criteria
1. 已經接受DAA治療 already receiving DAA therapy
2. 非肝病原因導致預期壽命有限 have limited life-expectancy from a non-liver cause
3. 還押在囚人士 persons in custody on remand
4. 不能理解中文或英文 cannot understand Chinese or English
<table>
<thead>
<tr>
<th>計劃詳情</th>
<th>Implementation details</th>
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<tbody>
<tr>
<td><strong>肝科醫生 Hepatologist</strong></td>
<td>預先錄好的影片：增加在囚人士對丙型肝炎的認識 Pre-recorded video: education to persons in custody about HCV</td>
</tr>
<tr>
<td><strong>研究護士 Research nurse</strong></td>
<td>研究護士</td>
</tr>
<tr>
<td><strong>研究助理 Research assistant</strong></td>
<td>風險品是</td>
</tr>
<tr>
<td><strong>丙肝快速測試 POC test</strong></td>
<td>丙肝快速測試 anti-HCV (point-of-care [POC] test)</td>
</tr>
<tr>
<td><strong>現場抽血 Venepuncture</strong></td>
<td>• 病毒基因型 Genotype • 肝腎功能 LRFT • 乙型肝炎表面抗原、愛滋病抗體 HBsAg, HIV</td>
</tr>
<tr>
<td><strong>肝纖維化掃描（便攜式） Fibroscan®</strong></td>
<td>現場進行 (若丙肝快速測試為陰性) Onsite (portable) if POC (rapid test for anti-HCV) +</td>
</tr>
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*原理 Rationale:*
- 在沒有肝硬化的 HCV 患者中很少觀察到 HCC HCC is rarely observed in HCV patients without cirrhosis
- 即使達到治療成功，嚴重肝纖維化或肝硬化患者也需要定期進行肝癌監測 Patients with F3/F4 need regular HCC surveillance even if SVR achieved

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<tr>
<th>第一段教育影片 1st Educational video</th>
<th>第一次到訪 Site visit 1</th>
<th>第二段教育影片 2nd Educational video</th>
<th>第二次到訪 遙距 CMS Site visit 2: Remote CMS</th>
<th>第三次到訪：檢查治療效果 Site visit (confirm cure)</th>
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<td><img src="image1.png" alt="Image" /></td>
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first Educational video:
- HCV general knowledge about HCV (nature, complications, route of transmission, curable infection)

second Educational video:
- counselling about what to expect next following diagnosis of HCV (course of fully-subsidised treatment, need of adherence, good safety profile, risk of re-infection)

First Site visit:
- Demographics questionnaire
- Consent
- POC for anti-HCV
- If confirmed positive:
  - blood taking
  - Fibroscan®

Second Site visit:
- CMS Remote CMS
  - Counselling
  - Clarify queries
  - Clarify any long-term medications
- Baseline 1st GHQ-12 and CLDQ

Third Site visit:
- Follow-up 2nd GHQ-12 and CLDQ
- POC for HCV RNA to document SVR

~2 months

~6 months
丙肝快速測試 Oraquick® for anti-HCV

肝纖維化掃描（便攜式） Fibroscan 430 Mini Plus

丙肝病毒核酸測試 Xpert HCV VL Fingerstick on the GeneXpert® System

1. Collect 100μl blood in the minivette provided
2. Transfer sample to the cartridge
3. Insert cartridge and start test
研究最新狀況
Research update

- 丙型肝炎篩查先導計劃已率先於赤柱監獄推行
  Programme was launched in Stanley Prison
- 篩查及接受治療人數 Number of people screened

目标篩查總人數
2026年9月底(研究結束)
Screening target by end of September 2026 (research completion)

2023年10月
October 2023
已篩查 / Screened：
76

2023年12月
December 2023
已篩查 / Screened：
106

500+
The implementation of the pilot programme in collaboration with the Correctional Services Department

Mr Wong Kai-tai
Senior Superintendent (Health Care)
Correctional Services Department (CSD)
There are on-premises hospitals or sick bays staffed by qualified personnel in all correctional institutions where round-the-clock basic health care services are provided to PICs.

Visiting medical specialists from the Hospital Authority or the Department of Health also provide consultations and treatments to PICs on a regular basis.

Overseas research data reveal that PICs are at high risk of contracting Hepatitis C, but there is no relevant research data in Hong Kong.
The HKUMed team visited the correctional institution through the outreach service to launch the pilot programme in collaboration with correctional officers with nursing qualifications to provide PICs with:

- health education and counselling
- rapid tests for HCV
- treatment prescription for HCV-infected PICs
- The process is straightforward and fast without the need to escort PICs to outside hospitals for tests and treatment
Launch of the pilot programme in Stanley Prison
Promotional poster (displayed in Stanley Prison)
Eligible PICs are enthusiastic about taking part in the programme

PICs watch educational videos
A PIC receives a rapid test for anti-HCV

Rapid test for anti-HCV (two lines indicate a positive result)
A consultation offered to a PIC by Professor Richard Yuen Man-fung and Dr Loey Mak Lung-yi

港大醫學院研究團隊與懲教署健康護理組人員合作推出丙型肝炎篩查先導計劃
HKUMed team and staff of the Health Care Section of the CSD have launched the HCV pilot screening programme for PICs
總結
Conclusions

港大醫學院臨床醫學學院內科學系副系主任
腸胃及肝臟科主任兼講座教授
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Chair Professor and Chief, Division of Gastroenterology and Hepatology, Department of Medicine
Deputy Chairperson, Department of Medicine
School of Clinical Medicine, HKUMed
項目潛在效益

**Potential benefits of project**

### 個人層面 Individual level

- 提高對濫用藥物風險的認識 Raise awareness of risk of illicit drug use
- 提高對血液傳播感染的認識 Enhance understanding of blood-borne infections
- 透過參與計劃減少嚴重肝臟併發症並獲得免費治療 Reduce serious liver complications via participation in project and receive treatment free of charge

### 學術層面 Academic level

- 了解在囚人士感染丙型肝炎普遍程度及特點 Understand the prevalence and characteristics of HCV infection among PICs
- 協助政策制定者制定後續計劃，在其他環境中推出類似的護理模式並擴大納入標準 Help policy makers formulate subsequent plans to roll out similar care models in other settings and broaden the inclusion criteria
- 了解本港以至亞洲在囚人士的心理因素 Understand the psychosocial factors of Hong Kong’s and even Asian PICs
- 為進一步研究心理健康和準備重返社會設定基線 Set a baseline for further researches in the mental well-being and for preparation to return to society

### 社會層面 Society level

- 評估該護理模式的表現 Evaluate the performance of this care model
- 提供參考數據，協助決策者完善衛生策略，制定消除丙型肝炎的框架，納入人力資源和財務考慮，以至直接抗病毒藥物的價格進行談判 Provide statistics to help policy maker refine healthcare strategies, develop framework for HCV elimination, incorporate human resources and financial considerations, and even negotiation the price of DAAs
- 證明在懲教院所推行外展專科醫療服務的可行性 Prove the feasibility of outreach specialist medical services in correctional institutions
- 減少患有慢性疾病的在囚人士的醫療護理費用 Reduce costs of medical care for PICs with chronic illnesses
The HCV pilot screening programme employs a ‘micro-elimination’ approach for persons in custody and provide:

- Targeted screening and treatment for hepatitis C virus infection in high-risk group
- Improves screening efficiency and shortens time to treatment
- >90% treatment success rate is expected

Individuals belonging to high-risk groups for hepatitis C should undergo early testing and treatment to reduce the risk of developing other serious conditions, such as cirrhosis and liver cancer.

Conclusions

- 丙型肝炎篩查先導計劃採用「目標群組消除」策略
- 集中資源為特定丙肝高危群組提供服務
- 成功提高篩查效率及縮短治療進程
- 治癒率預料能保持於九成或以上
- 丙肝高危人士應盡快接受檢測及治療，降低日後患上肝硬化及肝癌等嚴重疾病的機會
鳴謝

Acknowledgements

此項研究獲香港特別行政區政府醫務衛生局的醫療衛生研究基金（參考編號：20211881）的資助。
The study was supported by the Health and Medical Research Fund by Health Bureau, HKSAR Government (Reference number: 20211881).
謝謝
Thank You