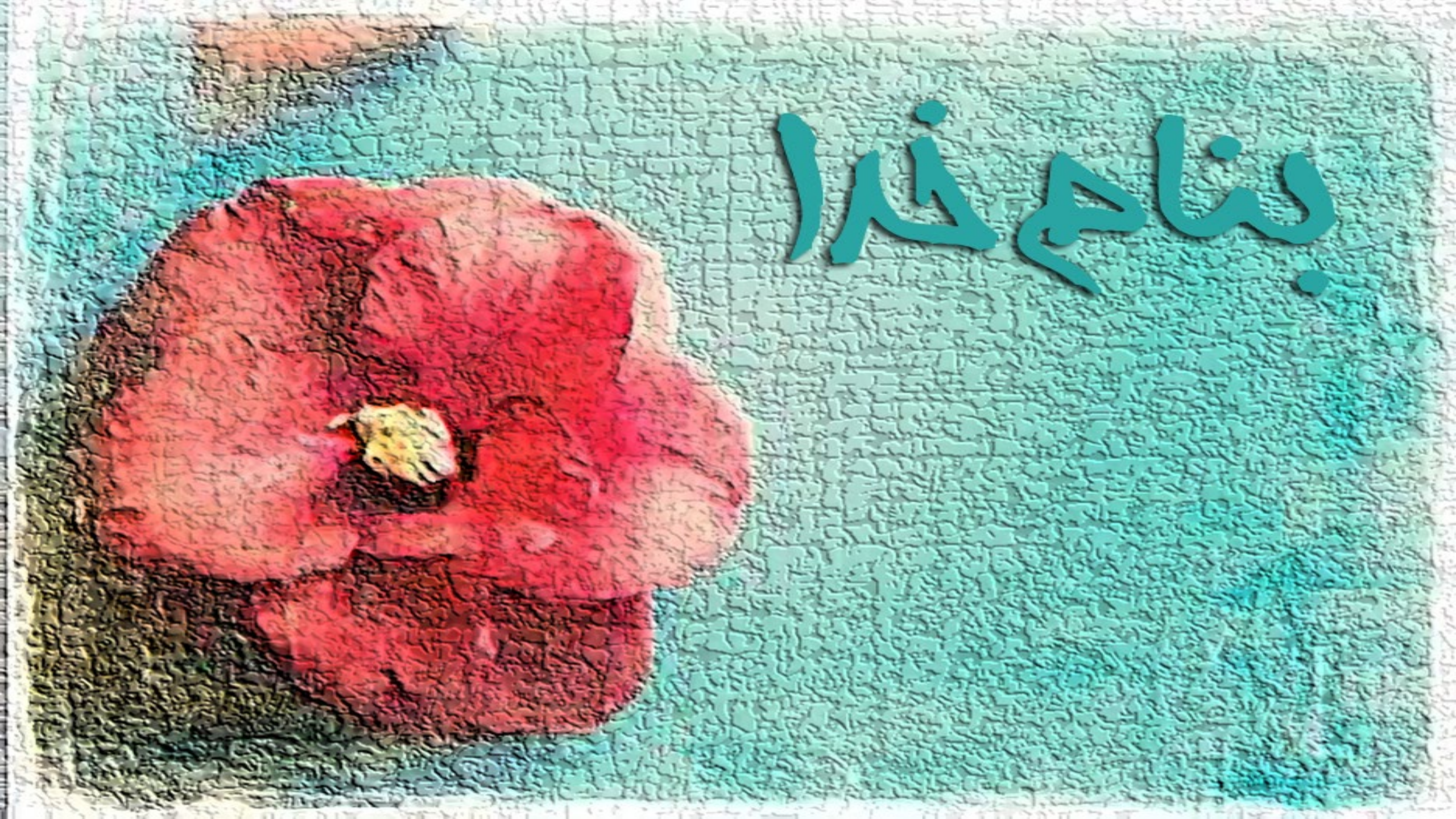

بناهم خدا

HCV Elimination Experience in Iran

Dr. Hossein Poustchi

Digestive Disease Research Institute

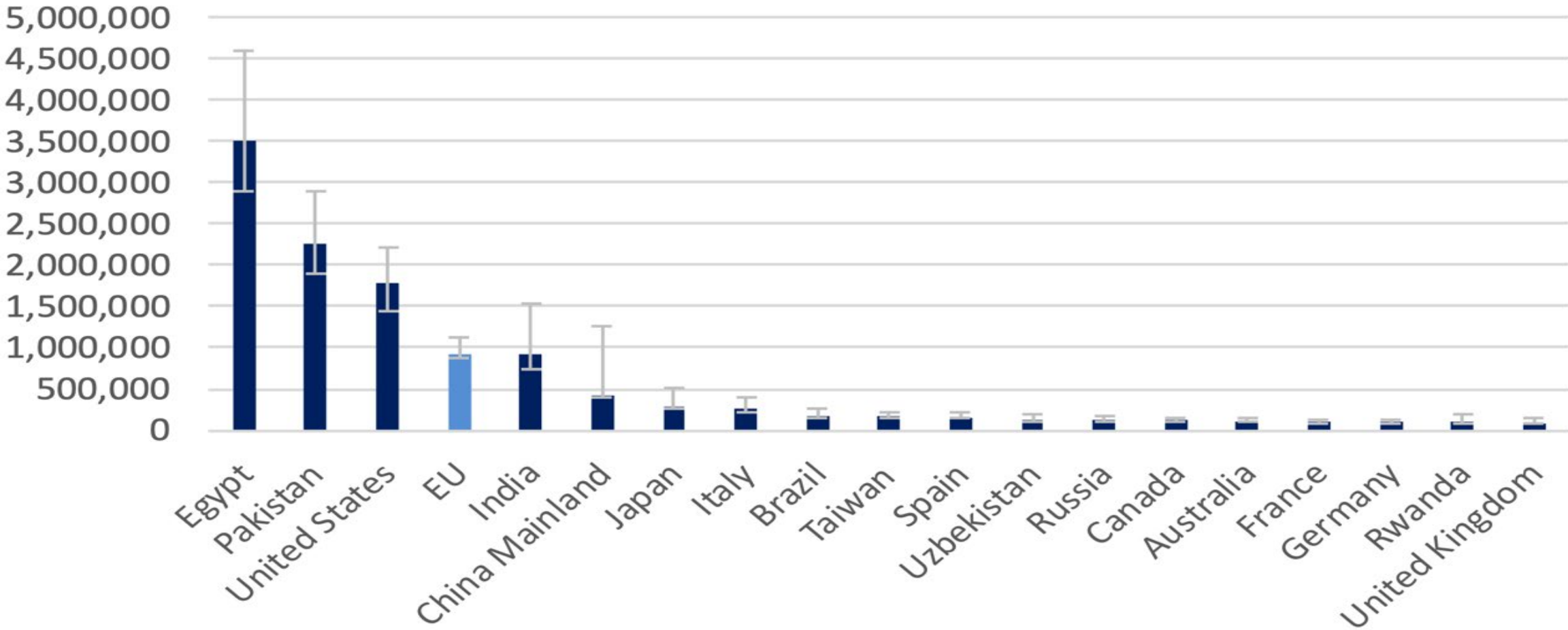
Tehran university of Medical sciences

Number of people living with hepatitis C virus treated in 2014-2023

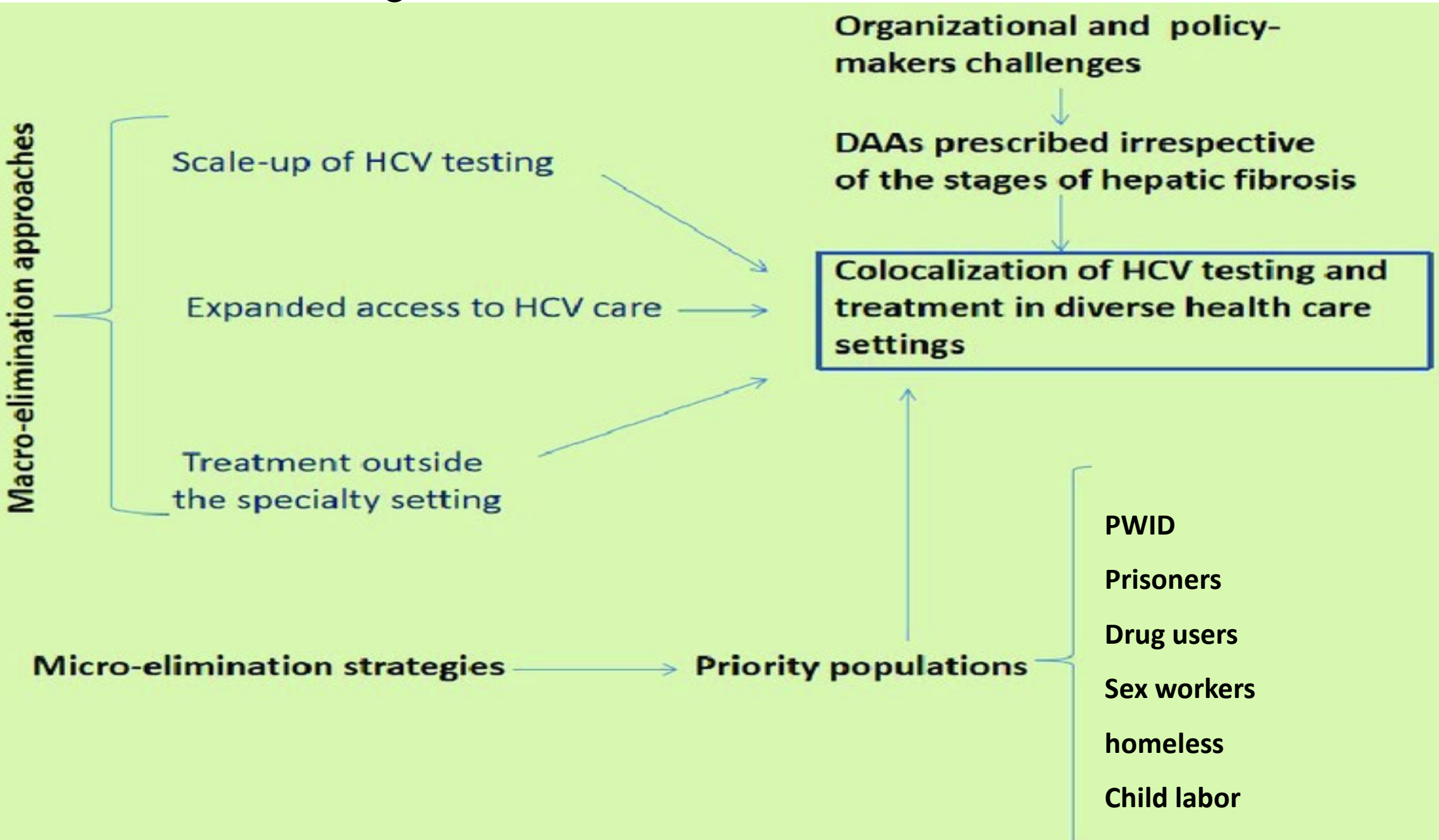
- It is almost 12 years of lunching Direct Acting Anti-hepatitis C Virus Drugs (DAA)
- The World Health Organization aims to eliminate hepatitis C (HCV) as a public health threat by 2030
- An estimated 13,645,000 (95% uncertainty intervals (UI) 13,055,000 - 16,257,000) PLHCV were treated
- estimated 30 million PLHCV yet to be treated to meet the WHO elimination targets
- Some countries have moved far ahead of this schedule. For example, Egypt, Georgia, Mongolia, Australia are “achieving remarkable success” toward elimination

The Polaris Observatory Collaborators. Lncet Gastroenreol Hepatol, 2022 May; 7 (5) 396-415

Countries/ Regions Accounting for 80% of All DAA Treatments (2014-2023)



HCV Elimination strategies: Macro/Micro-elimination



Egypt

- Egypt has led the world in hepatitis C control. **It launched a massive national campaign** (“100 Million Healthy Lives”) in 2018 that offered free HCV testing and treatment to all adults. screened 60+ million people and treated more than 4.1 million **in one year**

- **By 2023 Egypt met and exceeded WHO targets**

-Diagnosing ~87% of cases

-Treating 93% of those diagnose

-Its HCV prevalence plunged from ~10% of adults to **0.38%** in a decade

How they made it?

❖ Government support was high

❖ Local DAA access

❖ Awareness campaigns

❖ Mass screening

❖ FREE Treatment for all

❖ Care integration

Mongolia

- HCV prevalence 6-12%
- Launched a **national elimination program** in 2016 with full government funding.

- Parliament earmarked sufficient funds and added DAAs to the national insurance
- By 2019 the program had **screened over 1 million** people (~30% of the population) and treated more than **30,000** HCV-infected patients

How they made it?

❖ Full Government support
❖ Used primary care clinics and hospital network
❖ Massive awareness campaigns in cities and rural areas
❖ Drastic Scale up in screening and treatment
❖ Free treatment

Georgia

- Prevalence: 5.4% chronically infected (Among the world's highest)
- Launched **HCV elimination** program in 2015
- **Screening**: approximately **90% of adult population** screened **in one year**.
- **Treatment Initiation**: Among those diagnosed, 86% had initiated treatment
- **Treatment Completion and Cure Rate**: 99% SVR
- **Result :** 67% reduction in HCV prevalence (5.4% to 1.8%)

How they made it?

❖strong political commitment

❖Massive screening

❖Free treatment

Saudi arabia

HCV prevalence : 1 - 1.7%

HCV Elimination Plan: Recently embarked on an aggressive plan with free HCV testing and Direct-Acting Antiviral (DAA) treatment offered to all citizens and resident expatriates since 2018.
National Screening Program: Launched a phased approach, initially targeting everyone over age 40, then expanding to all adults.
Screening Progress: Within one year, pre-marital and dialysis screening had covered millions of people.
Infrastructure: The Ministry of Health centralized a single database for all test results and created a national treatment pathway overseen by expert committees.

How They Made It?

- ❖ Free testing and treatment for all citizens and expatriates
- ❖ Phased national screening strategy
- ❖ Centralized database and expert-led treatment pathway
- ❖ Aim to meet WHO elimination goals by 2030

What is common in all successful country?

Government Funding and Support: Full or significant government backing, including dedicated budgets and integration into national health systems, ensured sustainable efforts.

National Elimination Programs: Each country launched a structured national program with clear goals, often aligning with or exceeding WHO targets, to eliminate HCV as a public health threat.

Data Management: Centralized databases and registries tracked progress, monitored treatment outcomes, and guided policy adjustments.

Awareness Campaigns: Public education efforts increased testing uptake and reduced stigma, supporting broader participation.

Mass Screening Campaigns: Large-scale, often phased, screening initiatives targeted both the general population and high-risk groups (e.g., prisons, people who inject drugs) to identify cases.

Targeted Outreach: Focused efforts on vulnerable populations (e.g., homeless, PWID) with same-day testing and treatment linkage enhanced coverage.

Decentralized and Integrated Care: Treatment and testing were integrated into primary care, hospitals, and community settings, improving accessibility and outreach.

Innovative Procurement: Bulk purchasing or negotiation deals with pharmaceutical companies reduced DAA costs, making widespread treatment feasible.

Free or Subsidized Treatment: Access to Direct-Acting Antivirals (DAAs) was provided free or at low cost to all diagnosed individuals, removing financial barriers.

HCV Seroprevalence in Iran

General Population:

•**HCV Prevalence in Iran:** Iran has one of the lowest HCV prevalence rates in the Middle East among the general population

- •**Seroprevalence rate: 0.5%**
- •**Active viremia rate: 0.3%**

Regional Variations:

- •Mazandaran province: 0.08%
- •Hormozgan province: 1.6%

Gender Differences:

- •Males: 0.8% seroprevalence
- •Females: 0.5% seroprevalence

High-Risk Groups

•People Who Inject Drugs (PWID):

- Prevalence: 47.7%

•Incarcerated Population:

- General: 21.57%
- Inmates with drug injection history: 53%

•HIV-Positive Individuals:

Co-infection rate: 64%

Other high-risk categories:

- Homeless population
- Hemodialysis patients
- People who received blood
- transfusions or organ transplants before 1996

•Street children

•Men who have sex with men (MSM)

•sex workers

screening

What we can do?
1.Testing
2.screening
3.treatment & management
4.prevention

Targeted Screening Approach:
•Critical for efficiently allocating resources.
•Essential for making a substantial impact and cutting the spread of HCV.

The most High-Risk Groups in iran :
•People Who Inject Drugs (PWID)
•Prison population

where are them already ?
Prisons
Harm Reduction Sites:
Needle and Syringe Programs (NSP)
Opioid Agonist Therapy (OAT) clinics
HIV/ART Clinics
Triangular Clinics
Drop-in Centers
Shelters for Homeless People

مراجعه به زندانهای :

- ✓ زندان قزل حصار کرج
- ✓ زندان گرگان
- ✓ زندان رفسنجان

مراکز ترک اعتیاد در تهران

- ✓ مراکز گذری کاهش اسیب شوش
- ✓ مرکز نگهداری افراد بی خانمان
- ✓ مرکز شب خوابی

- ✓تست Rapid HCV Ab در تمامی افراد
- ✓ تکمیل پرسشنامه
- ✓ تهیه نمونه خون کامل از افراد +Ab و ارسال هفتگی جهت PCR
- ✓ انجام CBC و LFT در افراد با عفونت مزمن
- ✓ پیگیری جهت شروع درمان
- ✓ ارجاع بیمارانی که پیش از تکمیل درمان آزاد شدند به شبکه بهداشت
- ✓ پیگیری بیماران جهت SVR پس از 12 هفته از شروع درمان

تشخیص و درمان در جمعیت های خاص

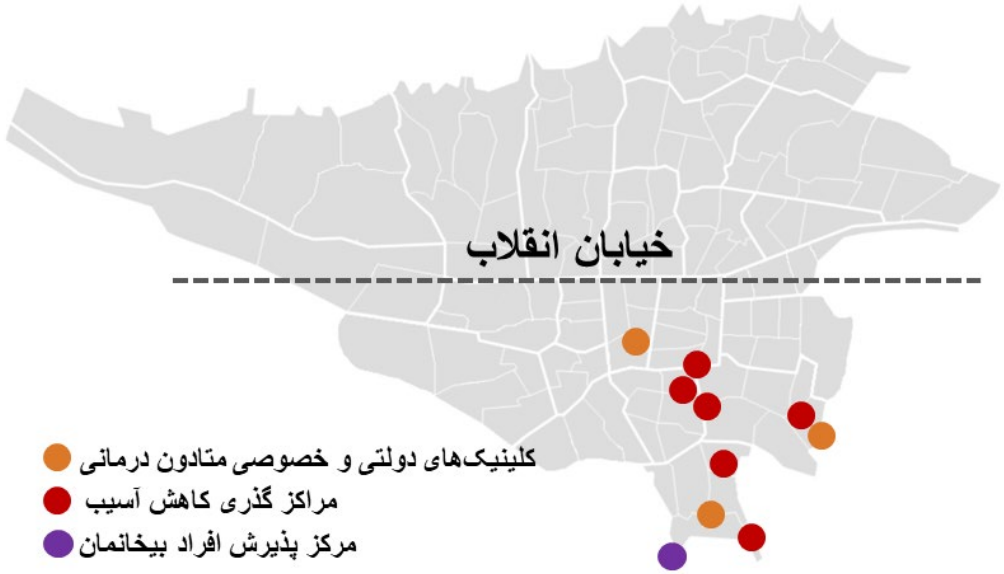
طرح بهبود سلامت کبد (ENHANCE Study)

کلینیک‌های متادون درمانی و مراکز گذری کاهش آسیب جنوب تهران / افراد دارای سابقه مصرف مواد

طرح رستم (ROSTAM Study)

مرکز گذری کاهش آسیب در کرمان و تهران / افراد دارای سابقه تزریق مواد





نتایج طرح بهبود سلامت کبد

تعداد 804 نفر در این مطالعه شرکت کردند

شیوع آنتی بادی مثبت:

کلینیک متادون درمانی: ٪۱۹
مراکز گذری: ٪۳۳
افراد بیخانمان: ٪۳۳



International Journal of Drug Policy
Volume 72, October 2019, Pages 99-105

An intervention to improve HCV testing, linkage to care, and treatment among people who use drugs in Tehran, Iran: The ENHANCE study

Maryam Alavi [a, b], Hossein Poustchi [b, 1], Shahin Merat [b], Soudeh Kaveh-ei [b], Afarin Rahimi-Movaghar [c], Behrang Shadloo [c], Behzad Hajarizadeh [a], Jason Grebely [a], Gregory J. Dore [a], Reza Malekzadeh [b]

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https://doi.org/10.1016/j.drugpo.2019.07.002

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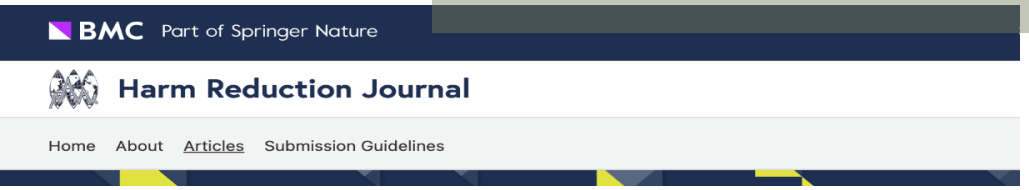
ریشه کنی در سه زندان بزرگ ایران

	شرکت کنند گان	شیوع آنتی بادی	مبتلایان به عفونت مزمن	بیماران درمان شده
زندان گرگان				
ساکنین	1,482	111 (7.5 %)	84 (5.7 %)	71 (82%)
ورودی جدید	410	16 (3.9 %)	3 of 5	
زندان کرج				
ورودی جدید	3,485	182 (5.2 %)	117 (3.4 %)	103 (88%)
زندان رفسنجان				
ساکنین	568	55 (9.7 %)	55 (9.7 %)	74 (95%)
ورودی جدید	722	43 (6.0%)	23 (3.2%)	
مجموع	**6667**	**407 (6.1%)**	**282 (4.2%)**	**248 (88%)**

نتایج مطالعات زندان ها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Harm Reduction Journal

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A simple risk-based strategy for hepatitis C virus screening among incarcerated people in a low- to middle-income setting

Sanam Hariri, Maryam Sharafkhah, Maryam Alavi, Gholamreza Roshandel, Abdolreza Fazel, Taghi Amiriani, Nazgol Motamed-Gorji, Abolfazl Bazazan, Shahin Merat, Hossein Poustchi & Reza Malekzadeh

Harm Reduction Journal 17, Article number: 56 (2020) | Cite this article

467 Accesses | 1 Citations | 3 Altmetric | Metrics


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Research | Open Access | Published: 20 October 2020

Continuum of hepatitis C care cascade in prison and following release in the direct-acting antivirals era

Sanam Hariri, Heidar Sharafi, Mahdi Sheikh, Shahin Merat, Farnaz Hashemi, Fatemeh Azimian, Babak Tamadoni, Rashid Ramazani, Mohammad Mehdi Gouya, Behzad Abbasi, Mehrzad Tashakorian, Ramin Alasvand, Seyed Moayed Alavian, Hossein Poustchi & Reza Malekzadeh

Harm Reduction Journal 17, Article number: 80 (2020) | Cite this article

535 Accesses | 5 Altmetric | Metrics

- **افراد غربالگری شده تاکنون: ۶۶۶۷ نفر**
- **بیماران تشخیص داده شده: ۲۸۲ نفر (۴٪)**
- **شروع به درمان: ۲۴۸ نفر (۸۸٪)**
- **افراد تکمیل درمان شده: ۲۰۸ نفر (۸۴٪)**

میزان پاسخ به درمان: ۹۸ درصد

Rafsanjan: a Successful macro-elimination plane

جمعیت مورد مطالعه

این مطالعه در مرداد 1398 از **زندان رفسنجان** آغاز گردید. در مهر ماه **مرکز مشاوره هپاتیت** راه اندازی شد. دو تیم میدانی سه نفره برای انجام کلیه مراحل ثبت نام و پیگیری درمان آموزش دیدند. کلاس آموزشی برای پزشکان کلیه مراکز برگزار و عضوگیری در سایت های جامعه آغاز گردید:



- ساکنین و ورودی جدید زندان
- کلینیک های متادون درمانی (37)
- کمپ های ترک اعتیاد (3)
- مرکز گذری کاهش آسیب (DIC)
- مرکز درمانی HIV
- مرکز مشاوره هپاتیت C

طرح حذف هپاتیت سی در رفسنجان

۱۴۰۰-۱۳۹۸

سایت	کلینیک متادون (۴۰)	کلینیک HCV	زندان	کمپ (۳)	پاتوق (۴۰)	کلینیک HIV	مجموع
شرکت کنندگان	۳۲۱۷	۱۰۱	۱۲۹۰	۳۹۷	۱۷۲	۴۳	۵۲۲۰
آنتی بادی مثبت	۱۲۰	۴۷	۹۸	۲۳	۱۸	۱۷	۳۲۳
شیوع آنتی بادی	۳/۷٪	۴۶/۵٪	۷/۶٪	۵/۸٪	۱۰/۵٪	۳۹/۵٪	۶/۲٪
تعداد بیماران	۷۵	۳۲	۷۸	۱۶	۵ از ۸	۱۵	۲۲۱
شیوع عفونت مزمن	۲/۳٪	۳۱/۷٪	۶/۰٪	۴/۰٪	۶۳٪	۳۴/۹٪	۴/۲٪

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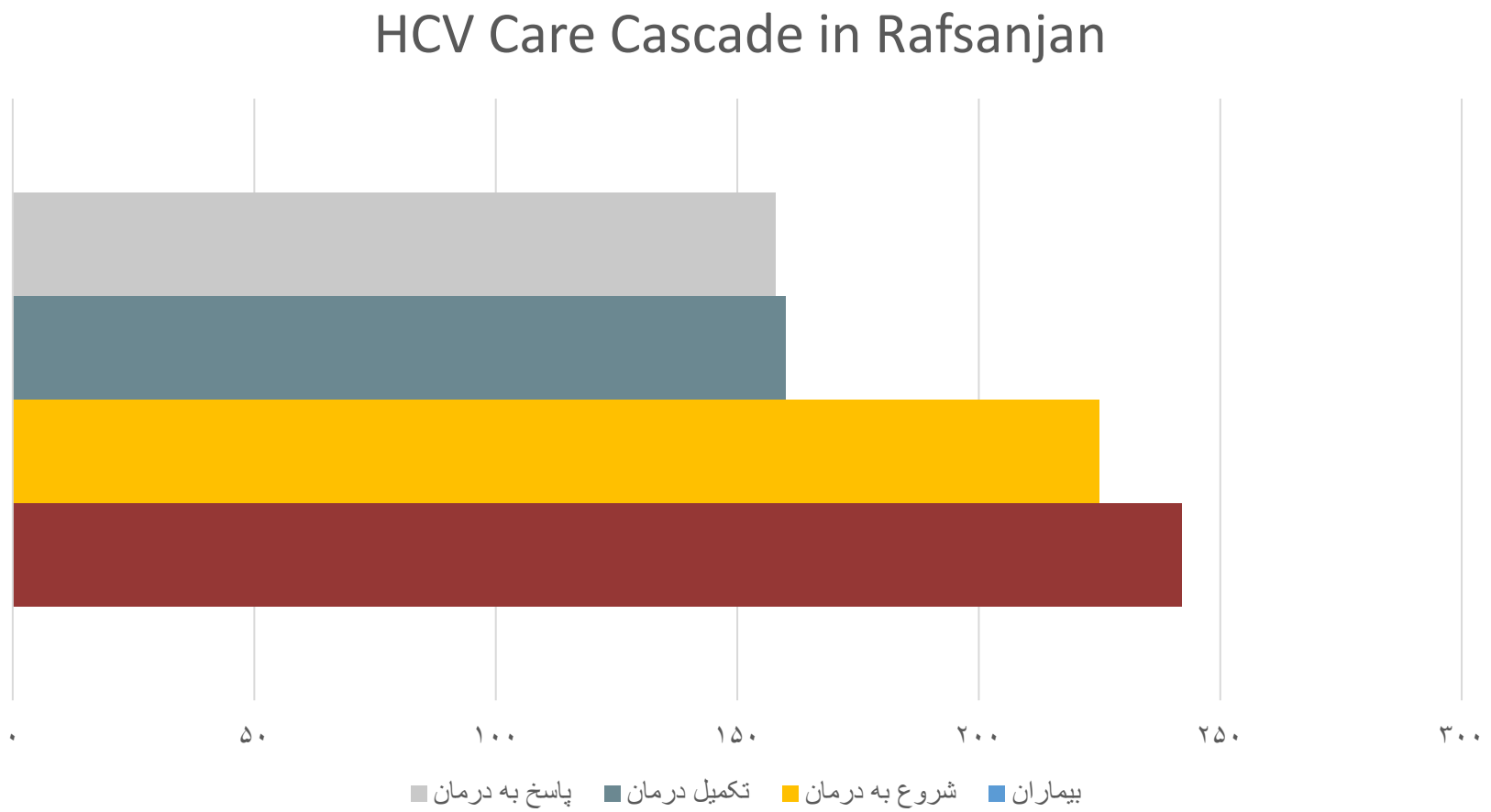
دانشگاه علوم پزشکی و خدمات بهداشتی درمانی رفسنجان

DDRI پژوهشکده بیماریهای گوارش و کبد

نتایج طرح رفسنجان

کل شرکت کنندگان	۵۲۳۹
بیماران تشخیص داده شده	۲۴۲
شروع به درمان	۲۲۵ (۹۳٪)
افراد تکمیل درمان شده	۱۶۰ (۷۱٪)
پاسخ به درمان	۱۵۸ (۹۹٪)



جمع بندی

اهمیت همکاری مراکز مختلف دولتی و آکادمیک در افزایش کارایی برنامه های تشخیص و درمان هپاتیت سی بسیار برجسته است.

استفاده از زیرساخت های کاهش آسیب در برنامه های حذف هپاتیت بسیار کارآمد است.

برای رسیدن به اهداف سازمان جهانی بهداشت، به افزایش برنامه های مشابه در سایر زندان ها و شهرهای ایران نیاز است.



- **Of estimated 170,000 HCV subjects in Iran:**
- **Total number treated between 2014-2023: Almost 21,000 (20,200-34,000) subjects**
- **140/000 individual yet to be treated**

Lncet Gastroenreol Hepatol, 2022 May; 7 (5) 396-415

JOURNAL OF VIRAL HEPATITIS
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REVIEW ARTICLE

Towards hepatitis C virus elimination in Iran: A blueprint for comprehensive strategies

SeyedehFatemeh Mousavi, Maryam Alavi, Alireza Delavari, Hossein Poustchi, Zahra Mohammadi, Reza Malekzadeh

First published: 03 June 2024 | https://doi.org/10.1111/jvh.13975



Thank you for your attention