出國報告（出國類別：開會）

赴德國參加全方位基因檢測（CGP）國際論壇

服務機關：衛生福利部中央健康保險署
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派赴國家/地區：德國
出國期間：111年11月1日至6日
報告日期：112年1月5日

摘要

精準醫療已成為癌症治療趨勢，透過分析病人是否含有特定之生物標記，進而給予更精準之藥物或治療，讓治療更能達到效益。次世代定序（Next Generation Sequencing, NGS）為目前檢測基因突變最新的工具，具有能夠以少量檢體，一次性檢測多項突變的好處，然而該檢測費用昂貴，因此是否納入健保給付，以及若要納入該如何規範、如何定價，仍需諸多考量。

此行受邀參加於德國舉辦之國際精準醫療論壇，除了與國際分享並介紹台灣的全民健康保險制度外，更透過參訪 Foundation Medicine 全方位癌症次世代基因定序實驗室，了解整個執行檢測的過程及步驟，對於全方位基因檢測（Comprehensive Genomic Profiling, CGP）有通盤性的概念。另外參加實體會議的情境討論，由現場與會者就全方位基因檢測（CGP）納入醫療照護系統之給付挑戰進行小組討論，各國的保險人互相分享其基因檢測保險給付的情形，並針對納入給付所要考慮的不同面向、遭遇問題進行優缺點的剖析。

各國保險制度不盡相同，許多國家針對 NGS 給付搭配有病人部分負擔的機制，台灣有獨特的全民健康保險，更應規劃慎思納入給付的方式及條件，同時也需要透過運用醫療科技評估（Health Technology Assessment, HTA）、醫療科技再評估(Health Technology Reassessment, HTR)的方式來協助進行整體性納入給付之評估。另外搭配健保協同商保及推動部分負擔改革，也是健保署努力推動並持續精進的方向。

目次

一、目的

因應精準醫療的時代來臨，各種對應癌症基因突變新藥相繼上市，精準醫療已成為癌症治療趨勢。為更進一步了解精準醫療之重要技術「次世代定序(Next Generation Sequencing, NGS)」檢測納入全民健康保險給付之可行性，藉由受邀參與全方位基因檢測（Comprehensive Genomic Profiling, CGP）國際論壇，期待能與各國保險單位進行經驗分享及交流，以利於提供後續評估是否將 NGS 或是 CGP 檢測納入保險給付。

隨分子醫學進步，癌症治療已從過去多以累積臨床數據給予經驗療法，逐步朝向個人化精準醫療發展，透過分析病人是否含有特定之生物標記，進而給予更精準之藥物或治療。NGS 為目前檢測基因突變最新的檢驗工具，具有能夠以少量檢體，一次性檢測多項基因突變的好處，目前已陸續有醫療院所或醫學會提出納入健保給付的申請；而全方位基因檢測(CGP)甚至可以同時針對300多個癌症基因完整檢測，分析基因變異及特性，且提供後續標靶用藥及癌症預後相關資訊，但檢測費用昂貴，因此是否納入保險給付，以及若要納入應如何規範、如何定價、如何設計支付方式，仍有許多需要討論的細節。

由於台灣健保資源有限，引進新醫療技術必須在財務負擔及臨床需求之間取得平衡，同時與醫療服務提供者保持良好的溝通及互動，為了解國際上精準醫療發展情勢及癌症基因檢測之價值，希冀透過此國際論壇的討論，作為台灣後續健保給付之參考。

二、行程安排

日期	行程內容
11月1日(星期二)	去程　臺北→慕尼黑→Starnberg
11月2日(星期三)	
11月3日(星期四)	參訪位於 Penzberg 之 Foundation Medicine 實驗室及簡介精準醫療及全方位基因檢測概念
11月4日(星期五)	參與全方位基因檢測(CGP) workshop
11月5日(星期六)	返程　Starnberg→慕尼黑→臺北
11月6日(星期日)	

三、會議過程說明

本署受邀於111年11月3日至11月4日參加於德國舉辦之國際精準醫療論壇，會議行程第一天安排參觀位於德國 Penzberg 的 Foundation Medicine 全方位癌症次世代基因定序實驗室。實際了解臨床取得檢體送到實驗室後的每個步驟處理分析至結果報告。

會議第二天則於德國施塔恩貝格四季酒店（Hotel Vier Jahreszeiten Starnberg）參與全方位基因檢測(CGP) 工作坊，由國際顧問公司規劃策略模式並引導現場與會者參與討論，參與者有巴西、科威特等保險公司代表一同分享及討論癌症基因檢測納入醫療照護系統之給付挑戰等議題。

工作坊主要先由本署李伯璋署長進行演講，分享並介紹台灣的全民健康保險制度，包含台灣全民健保是屬於強制性的社會保險、公辦公營、單一保險人模式的組織體系、保險收入主要來自於保險對象、雇主及政府共同分擔的保險費收入、大約有93.03%的醫療院所與全民健保特約、運用總額支付制度來管控財務、低收入戶有保險費補助及免部分負擔等特點。另由於健保總額預算每年成長幅度有限，2021年藥費占總額醫療費用之比率已達28.9%，為健保開辦以來最高，如何將有限的資源做最最有效的分配及運用，以及減少不必要的醫療行為，把資源留給需要健康照護的病人，都是當前重要的課題。

台灣用於癌症治療的藥費逐年增加，年平均成長率為12.27%，遠高於總額之年平均成長率4.4%，而每年新藥的預算有限，對於標靶藥物的給付所面臨之挑戰，包含多數癌症新藥採加速上市，僅有1期或2期臨床試驗資

料，缺少長期存活數據，新藥價格昂貴財務衝擊大，且必須透過要求實驗室的認證以確保檢測品質及正確用藥。

近年來本署透過加強醫療資訊分享的基礎建設，將健保資訊網服務系統(Virtual Private Network, VPN)頻寬由 ADSL 升級至光纖網路，推動鼓勵保險醫事服務機構即時上傳醫療影像、檢查文字報告以及檢驗結果，及應用 AI 加值精準醫療發展及科技防疫等，都是台灣建置整合系統以推動個人化精準醫療的成果。此外也分享本署決定健保醫療服務支付與管理之利害關係人，包含有每月召開之醫療服務專家諮詢會議，每季召開之總額研商議事會議及醫療服務共同擬訂會議。此外，本署也藉由定期舉辦讀書會，由同仁分享閱讀國外知名學者健康照護著作，提供同仁創新思維、作法，進而提升服務品質。

本署每年均於年度醫療給付費用總額中，針對新醫療科技編列預算，並運用醫療科技評估(Health Technology Assessment, HTA)，評估新科技成本及經濟效益，輔助決策；亦就已給付項目進行醫療科技再評估(Health Technology Reassessment, HTR)，將資源用在最有效益治療，並執行以實證為基礎的醫療給付，陸續將研究成果發表於期刊等。

接著進行情境討論，由現場與會者就全方位基因檢測(CGP)納入醫療照護系統之給付挑戰進行小組討論，針對納入給付所要考慮的不同面向關鍵問題進行優缺點的剖析，並討論可能的解決方案、需要與哪些利害關係團體溝通等，希望能藉由大家的經驗分享及腦力激盪提出相關可行性的方案來落實真正的精準治療。

會議議程

第一天：11月3日 FMI Penzberg Lab-Precision medicine and CGP in general concept

Time	Agenda	Speaker
09:00-09:30	Welcome & Turn in	Sabrina Neumann Foundation Medicine, Manager International Operations
09:30-10:15	PHC in oncology: evidence for implementation into clinical practice	Allan Hackshaw Director of Cancer Research UK and UCL Cancer Trial Centre
10:15-11:45	NGS Lab Tour & AVENIO Lab Tour	Sabrina Neumann Foundation Medicine, Manager International Operations
11:45-12:00	Break	
12:00-12:45	Dry lab: Bioinformatic evaluation	Thomas Wieland Director, Bioinformatics & Technology
12:45-13:45	Lunch	
13:45-14:30	The role of CGP in precision medicine and patient testimonial	Marcus Remer. Basingstoke and North Hampshire Hospital, UK
14:30-15:15	The value of the CGP report and how this is connected to Molecular Tumor Boards & targeted therapies	Jorge A. Lopez C Senior Global Medical Director Integrated Healthcare Solutions Global Medical Affairs/Roche Ltd
15:15-15:30	Break	
15:30-16:10	New models beyond traditional reimbursement: Roche's approach to access solutions	Teresa Garcia Coscolin and Koichi Okamoto FMI & PHC Access Lead, Pharma International/Roche Ltd
16:10-16:30	Closing	

第二天：11月4日 CGP access workshop

Facilitators: Alec Lee / Director of Healthcare Research, FrontierView USA

Tom MacDonald / Consulting Director, FrontierView London

Time	Agenda	Description/speaker
08:00-08:15	Introductions	Program introduction Objective and ground rules for the session Survey question 1
08:15-08:45	**Experience: Taiwan National Health Insurance**	Experience sharing (李伯璋署長 **Dr. Po-Chang Lee**) and panel discussion Survey question 2
08:45-10:30	Roundtable discussion for case studies-Sweden, Mexico and Japan	Presentation of case studies, subsequent group discussion Coffee break included Survey question 3
10:30-11:00	Key takeaways discussion	Details for the second half of the day
11:00-11:40	Building the best-case scenario-part Ⅰ	Co-creating the future best-case scenario Defining the pathway to the future best-case scenario
11:40-12:40	Lunch	
12:40-13:10	Building the best-case scenario-part Ⅱ	Identifying the necessary learnings and actions to achieve the future best-case scenario
13:10-13:20	Coffee Break	
13:20-14:30	Building the worst-case scenario	Co-creating the future worst-case scenario Defining the pathway to the future worst-case scenario Identifying the necessary learnings and actions to avoid the future worst-case scenario
14:30-15:00	Plenary concluding session	Scenario, key needed learnings, and actions sharing
15:00-15:10	Closing	

四、實驗室參訪及簡要課程說明

11月3日主辦單位安排與會者參觀位於德國 Penzberg 的 Foundation Medicine 全方位癌症次世代基因定序實驗室，Foundation Medicine 歐洲子公司位置在慕尼黑以南的幾英里處。Penzberg 的園區是歐洲最大的生物技術中心之一，擁有來自於世界各地超過50個國家的員工，人數大約 6,200名。除了為歐洲癌症患者提供針對不同類型惡性腫瘤的全面基因檢測分析外，Penzberg 的團隊還與歐洲和全球的合作夥伴協同運作。這使得 Penzberg 成為許多 Foundation Medicine 國際活動的重要樞紐。

位於德國 Penzberg 之 Foundation Medicine 實驗室於2017年1月啟動，並於2017年10月提供商業式診斷服務，意即針對癌症患者進行全方位基因檢測分析。除了實驗室運作外，該站點的功能亦作為內部協作和夥伴關係的中心。座落於歐洲中心位置和 Penzberg 園區內，使得 Foundation Medicine 與各種國內和國際合作夥伴之間產生了強大的協同作用。

在進入 Foundation Medicine 全方位癌症次世代基因定序實驗室之前，主辦方安排由倫敦大學學院臨床試驗與方法研究所流行病學教授講解「癌症個人化精準醫療：臨床執行之證據」，說明基因檢測的基本知識，以及對於精準用藥的優點。接著再由實驗室人員解說及簡介全方位基因檢測概念，後續分為兩組分別進入各個實驗室小房間觀摩，各個研究室小間幾乎囊括了整個基因定序檢測的重要步驟，除了檢體採集需在醫療院所進行外，實驗室裡流程包含備製處理(切片)、儲存→DNA 萃取→基因庫製備→定序片段產出與鹼基偵測→序列比對/基因定位→變異偵測→變異註解與過濾→變

異點的功能評估與判定→報告產出。該實驗室內設置有許多不同的儀器執行各個步驟，最後大約於14天內完成檢體報告並寄至醫師的信箱中，供臨床醫師能針對報告之基因分析結果，對於病患採取適合的用藥治療。

下半天的課程則是先由一位英國腫瘤科醫師以實際案例介紹全方位基因檢測(CGP)在癌症精準醫療的角色，按照該位醫師的經驗，透過案例分享病人罹患乳癌、肺癌或肝癌後，透過 CGP 檢測並予以治療後，再利用液體切片 CGP 持續追蹤，可以輔助醫師後續治療決策參考，病人亦有良好的存活率及生活品質。

之後接續「全方位基因檢測(CGP)報告之價值」及「超越傳統之新給付模式」等課程內容。

上述課程中提到，CGP 的付費來源包含病人自付(Out of pocket)、病人支持計畫(Patient support program, PSP)、醫院資金(Hospital level funding)、商業保險(Private insurance coverage)、地區性資金(Regional level funding)、國家型資金(Broad/ national funding/ access)。許多國家已有公共基金/支付 CGP，如北美的美國，歐洲的德國、瑞士、法國、瑞典、義大利、西班牙等，亞洲的日本、韓國，拉丁美洲的哥倫比亞、墨西哥等；而臺灣、愛沙尼亞、英國則在研議中。

CGP 由於相對 FISH、IHC 及熱點(hotspot) panel 檢測可以更精準地偵測突變，對於保險人而言，可以在一開始就有更好的治療計畫，對於癌症病人的全生命週期治療有其重要性，且有節省治療成本的附加價值。根據美國研究指出，精準檢測治療較未使用者，其再急診率降低5個百分點(18%

vs. 23%)，後續住院人數降低13個百分點(31% vs. 44%)，急診次數降低11個百分點(22% vs. 33%)，住院次數降低6個百分點(56% vs. 62%)，提升健康照護體系服務之效率。

五、心得與建議

癌症治療已進入個人化精準醫療的里程碑，而精準醫療的首要步驟必須先執行生物標記檢測，多數生物標記為基因突變，因此次世代定序(NGS)檢測變得很重要。目前檢測基因突變最新的技術即為 NGS，它可同時執行大量的核酸定序，具有降低單一鹼基定序所需的成本、高通量、快速及使用少量檢體等優勢，使定序檢測不再受限於基因的大小或多寡，或檢體量不足等因素。也因此各界都在引頸期盼希望能納入健保給付，能夠讓醫師做為診斷癌別（tissue proofing）的有利工具，提供醫師為病人擬訂治療計劃，選擇最有效的藥物治療與癒後追踪。然而 NGS 檢測因涉及昂貴儀器與高度生醫技術，價格依檢測的基因數目從數萬到數十萬元不等，是否納入保險給付，以及若要納入應如何規範、如何定價，仍需諸多考量且審慎評估。

藉由此次參與國際論壇，除了實際進到實驗室參觀執行基因檢測的步驟及流程，也從臨床醫師分享治療案例成效中了解到基因檢測在精準醫療的角色，該基因檢測不只是一次性，隨著藥物治療的介入、疾病的進展，都需要透過多次性基因檢測方式來協助病患進行疾病長期監控，偵測腫瘤的復發、遠端轉移等。再者，在日本及韓國針對 NGS 給付均有搭配由病人部分負擔，得以協助分攤財務，而我國健保對於癌症病人是免部分負擔，在整體健保資源有限的狀況下，必須考量健保財務衝擊並審慎思考 NGS 的給付規劃，包含其支付價格、檢測品質及成本等因素。

現行健保資源雖然有限，也已給付多項用藥前的伴隨式檢測，例如

EGFR、ALK、All-RAS 等，近年來也加速給付多項癌症標靶藥物，健保署持續努力將新醫療科技提供給病人，保障其就醫福祉及權利，讓病人得到最適切的治療。針對 NGS 納入健保給付除了需要運用醫療科技評估（Health Technology Assessment, HTA）來協助進行整體性的評估，包含整體健保財務、臨床療效及成本效益等，同時也需蒐集真實世界的資料，以進行後續醫療科技再評估(Health Technology. Reassessment, HTR)，另也可藉由給付協議的方式提供暫時性的支付。此外相關的配套措施，例如健保協同商保及落實部分負擔改革，改變民眾就醫行為，也是健保署努力推動並持續精進的作為。

六、附錄：活動照片與簡報

(一)活動照片

參訪 Foundation Medicine 實驗室後合影(1)

參訪 Foundation Medicine 實驗室後合影(2)

署長分享介紹台灣的全民健康保險制度(1)

署長分享介紹台灣的全民健康保險制度(2)

會議進行情境討論及互動交流(1)

會議進行情境討論及互動交流(2)

與會者的相互討論及交流

會議 ending 大合照

(二) 簡報

Roche CGP Workshop - Roundtable discussion

Precision Medicine – Taiwan's Experience in National Health Insurance

Po-Chang Lee, M.D., M.T.L.
Director General,
National Health Insurance Administration,
Ministry of Health and Welfare
Professor of Surgery, College of Medicine,
National Cheng Kung University

November 4th, 2022

A Brief Overview of Taiwan's Healthcare System

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NHI Characteristics

Coverage

Compulsory enrollment for all citizens and legal residents

Administration

Single-payer system run by the government

Financing

Premiums

Providers

93.03% of healthcare providers contracted with NHI

Payment

Plural payment programs under the global budget payment

Privileges

Premium subsidies and co-payment waivers for the disadvantaged

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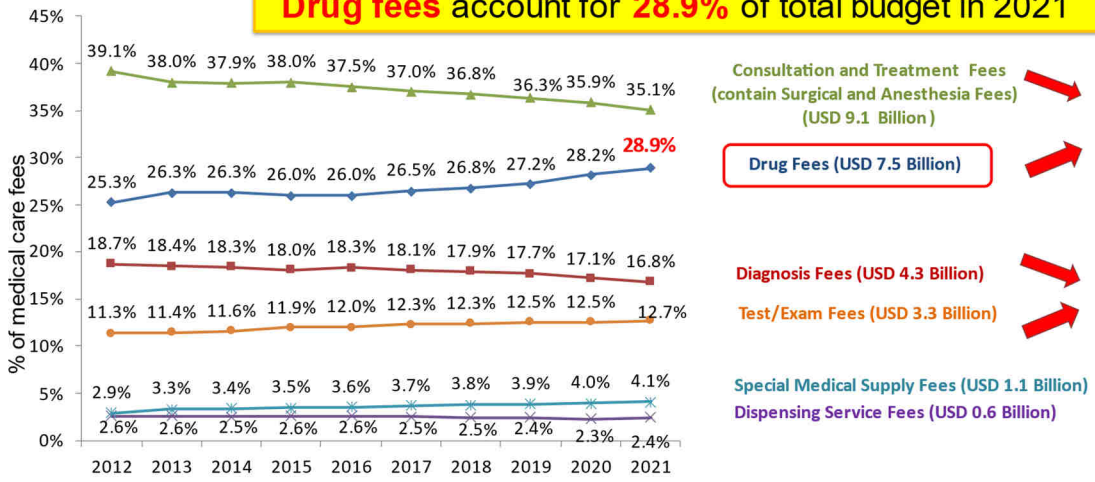
What's the Problems We are Facing and Solutions We Proposed?

4

Trends of Medical Expenditures(%)

Drug fees account for **28.9%** of total budget in 2021



Hospitalization diagnostic fee (without examination fee) is including room charge, feeding diet, radiotherapy, treatment, surgery, rehabilitation, blood/plasma, dialysis, anesthesia, psychotherapy, injection fee, etc.

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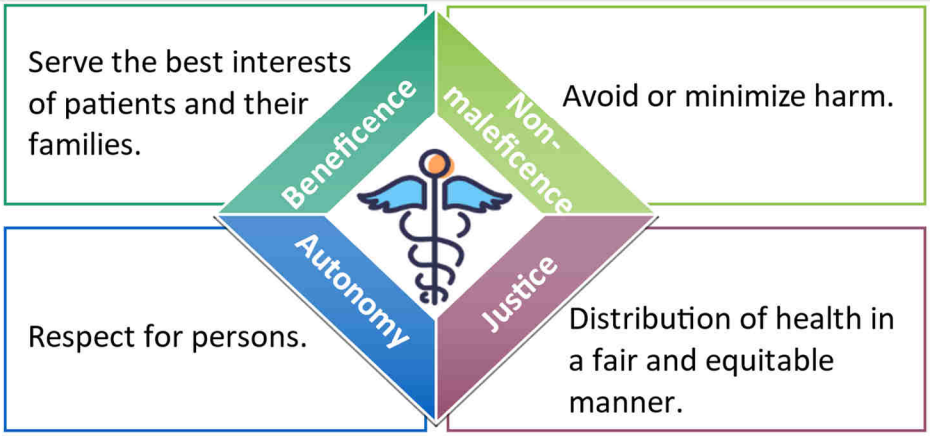
Aligning Ethics with Medical Decision - Making

Reducing unecessary medical treatment.
Providing care that responds to individual preferences, needs and values.



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What is Taiwan's Experience in Personalized Cancer Care?

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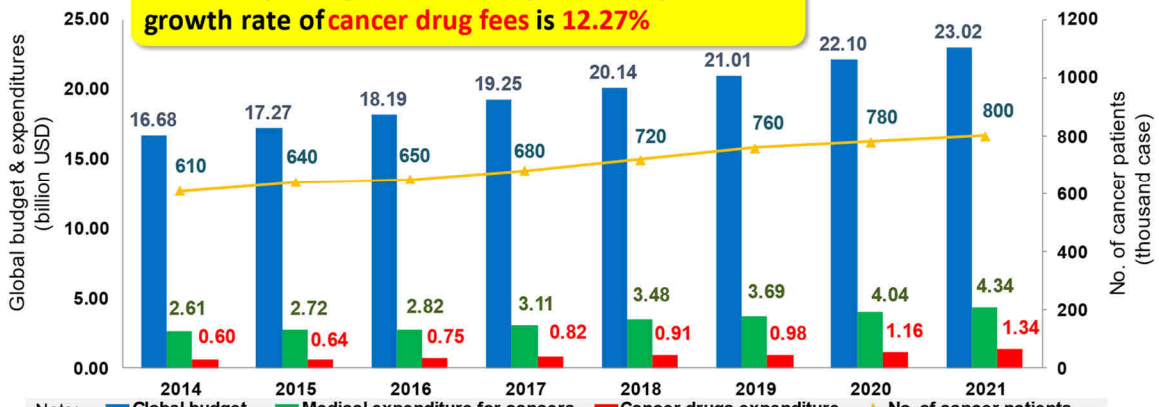
Trends of Medical & Drug Expenditures for Cancer Therapy

In recent years, growth rate of global budget is 4.4%, growth rate of cancer drug fees is 12.27%



Note: Global budget | Medical expenditure for cancers | Cancer drugs expenditure | No. of cancer patients

1. The insured patient's primary/secondary ICD codes indicating to cancer (C00~C97) were used to calculate for medical expenditures and no. of cases.
2. NHI reimbursed drugs' ATC code classified as L01~L02 were used to calculate for cancer drug expenditures.
3. Global budget was calculated by annual hospital & clinics departments.
4. 1 USD=30 NTD

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The Challenges of Reimbursement of Targeted Agents

An annual budget for new drugs of NHI in Taiwan is about 66.7 million USD

- More and more Accelerated Approvals indication
- Lack of long-term overall survival data

- The price of new agents is so expensive
- The overall budget impact is too big to affordable
- Request laboratory accreditation to ensure the quality of test to find the right patients

Safety ?

Superior therapeutic effects ?

Cost-effectiveness ?

Test quality assurance
(TFDA, TAF, CAP, or Taiwan society of pathology)

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How does Taiwan Build an Integrated System to Implement Personalized Healthcare ?

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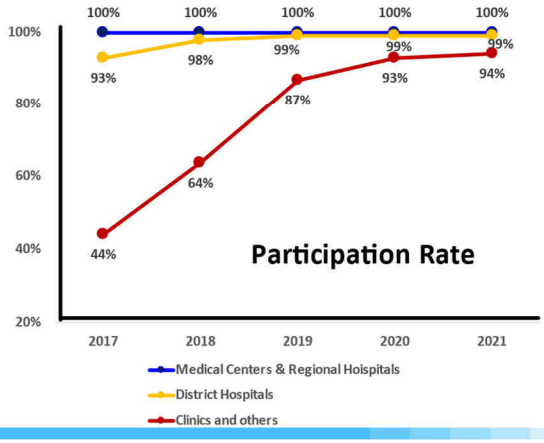
Enhancing Infrastructure for Medical Information Sharing

It is necessary to have effective tools to do a good job.
Virtual Privat Network(VPN) bandwidth upgraded from ADSL to Optical fiber.

Type of Institute	bandwidth	Ceiling of Subsidy (per month)
Medical Centers	50M	$1,970 USD
Regional Hospitals	20M	$1,632 USD
District Hospitals	10M	$933 USD
Clinics and others	6M/2M	$61 USD

1USD=27.7TWD



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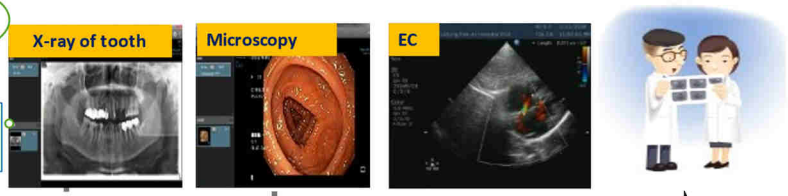
Examination Data and Medical Image Uploading

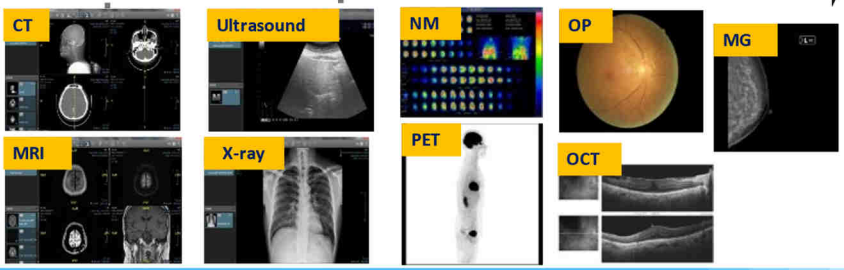
4.05 Billion
Medical Images
(from 2018 to Mar. 2022)

Provide real-time notice of 20 categories of examinations



2017/3/29 | 2017/5/25 | 2017/12/25 | 2018/1/1 | 2018/2 | 2019 | 2020

Add examination records, results and TAF marks



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AI Model Applications

NTUH(臺大)—*PANCREASaver*
Pancreatic Cancer Detection(world's first)

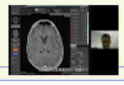
Published by Radiology on August, 2022.

Impact Factor 29.15

NTUH (臺大) —*HearotaNetR*
Cardiovascular Disease Risk Prediction by CT

MOU between NHIA & NTUH on Dec. 7th, 2021

TVGH(榮總) —*DeepMetsR-Pius*
Brain Metastasis Detection by MRI



NCKUH(成大)
Covid-19 and Lung Cancer Detection by Chest X Ray

TMUH(北醫)— *Deep-Lung: Lung Rads* Pulmonary Nodule Detection by CT

CGH(國泰)
Chronic Diseases Risk Prediction by Health Examination Data

FEMH(亞東)
Nasopharyngeal Carcinoma Detection by MRI

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Roundtable Discussion

Key Stakeholders for Precision Oncology for the NHI

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Stakeholders for Decision Making

Expert Consultation Meeting

- ✓ Discuss medical service reimbursement proposal
- ✓ Members: Experts, Medical association related to the topic, Insurer
- ✓ Frequency: Monthly

Global Budget Study and Promote Meeting

- ✓ Global budget management and project discussion
- ✓ Department: Dental care, Traditional Chinese, Western medicine Clinics, Hospital, Dialysis
- ✓ Members: Premium payer, Medical care providers, Expert, Employers, Insurer
- ✓ Frequency: Quarterly

Medical Services Benefit and Reimbursement Scheme Joint Committee

- ✓ Add new treatment or revise the fee schedule, discuss pay for performance program or health care plan
- ✓ Members: Experts, Beneficiaries, Employers, Contracted medical care institutions, Insurer and the relevant agency
- ✓ Frequency: Quarterly

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NHI Spirits ~ Thursday's Book Club~

- ➢ **Every Thursday 8:00– 9:00am**
- ➢ **New topic from June 30 2022**
  " Practical Strategies to Assess Value in Health Care by Craig A. Solid"

- ➢ **Live streaming conference**
  https://reurl.cc/g09QE7
- ➢ If you missed the meeting or want to review, please go to the **"National Health Insurance Department's English Book Reading Club"** section to check
  https://reurl.cc/Gbm1ey

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Roundtable Discussion

Biomarker Testing To Date – Decision Process

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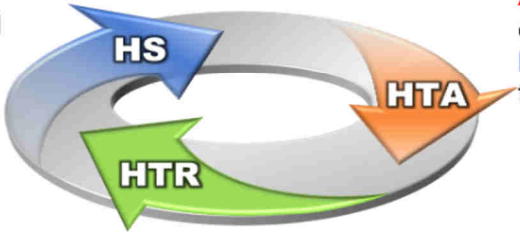
Precision Reimbursement for New Medical Technology

Budgeting

Introduce **Horizon Scanning(HS)** to include new medical technologies that may be **included in the assessment when budgeting**.



Reimbursement

Use **Health Technology Assessment (HTA)** to estimate the **cost and benefit** of new technology to assist decision-making.

Reassessment

Carry out **Health Technology Reassessment (HTR)** on the paid items, extend coverage for effective items, limit the payment for non-benefit treatment. Use the resources for the **most effective treatment**.

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Roundtable Discussion

Biomarker Testing To Date – Real World Evidence (RWE)

Value-Based Payment– Immune Checkpoint Inhibitors, IO

Art. 1.11078-PM 24933

European Review for Medical and Pharmacological Sciences 2021; 25: 6548-6556

Real-world results of immune checkpoint inhibitors from the Taiwan National Health Insurance Registration System

S.-T. HSIEH[1], H.-F. HO[2], H.-Y. TAI[2], L.-C. CHIEN[1], H.-R. CHANG[1], H.-P. CHANG[2], Y.-W. HUANG[2], J.-J. HUANG[2], H.-J. LIEN[2], L.-Y. HUANG[1], P.-C. LEE[3,4]

Following a year of data collection and analysis, the real-world ORR and PFS in Taiwan were 24.0% and 2.9 months, respectively. Experts agreed that, compared to regorafenib, payment benefits were limited while producing the same clinical status. As of March 2020, no HTA agen-


ODAC Opposes Ongoing FDA Approval of Nivolumab for HCC in Patients Pretreated With Sorafenib

April 30, 2021
Sara Karlovich

The FDA's Oncologic Drug Advisory Committee voted 5 to 4 against the continued accelerated approval of nivolumab for the treatment of patients with hepatocellular carcinoma who were previously treated with sorafenib.

The FDA's Oncologic Drug Advisory Committee voted 5 to 4 against the continued accelerated approval of nivolumab for the treatment of patients with hepatocellular carcinoma who were previously treated with sorafenib.[1]

FDA

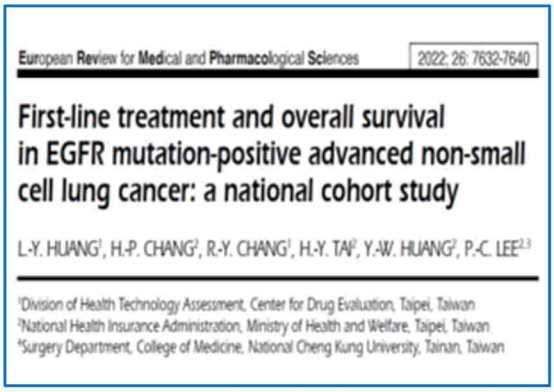
Real world evidence(RWE) application in Taiwan

- In February 2020 , Taiwan National Health Insurance suspended the payment of **nivolumab for hepatocellular carcinoma** and **pembrolizumab for gastric cancer** with reference to RWE and other scientific evidence.
- In April 2021 , the US FDA's ODAC voted against the approval of nivolumab for HCC patients and pembrolizumab for the treatment with gastric cancer.

Note: Published by *European Review for Medical and Pharmacological Sciences* on November 15th, 2021

Real World Evidence in Taiwan -
Effectiveness of Targeted Therapy in NSCLC

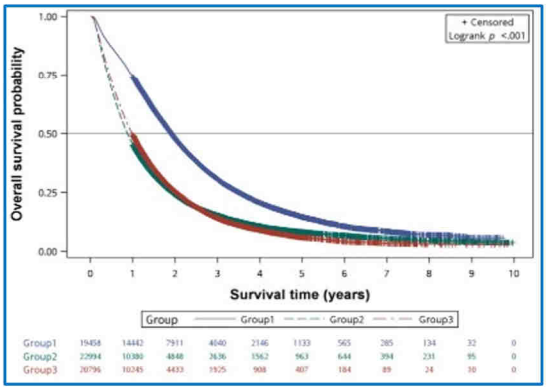
- This study aimed at evaluating the **effectiveness of first-line targeted therapy for advanced EGFR mutation -positive non-squamous NSCLC in Taiwan.**
- **The median OS** (overall survival) for patients treated with **first-line targeted therapy (22.9months) was longer than** that of patients receiving **chemotherapy alone (11.7months)**


European Review for Medical and Pharmacological Sciences 2022; 26: 7632-7640

First-line treatment and overall survival in EGFR mutation-positive advanced non-small cell lung cancer: a national cohort study

L-Y. HUANG[1], H-P. CHANG[2], R-Y. CHANG[1], H-Y. TAI[2], Y-W. HUANG[2], P-C. LEE[2,3]

[1]Division of Health Technology Assessment, Center for Drug Evaluation, Taipei, Taiwan
[2]National Health Insurance Administration, Ministry of Health and Welfare, Taipei, Taiwan
[3]Surgery Department, College of Medicine, National Cheng Kung University, Tainan, Taiwan



Note: *European Review for Medical and Pharmacological Sciences* . 2022;26:7632 -7640 (in press).

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Roundtable Discussion

Comprehensive Genetic Profiling (CGP) The Key Point

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The Reimbursement and Copayment in Different Country

	Japan	Korea	America
Disease	Cancer (Companion Dx /CGP)	Rare disease and Cancer	Cancer (Companion Dx)
Model	By 6 NGS tests	By disease (specific gene)	By disease (FDA approved companion diagnosis)
Reimbursement cost	Uniform NGS price	Uniform NGS price	Different clinical situation or insurer: different price
Criteria	Once in lifetime	Rare disease: once Cancer: diagnosis - once recurrence - once	Different cancer or different NGS test: once
Copayment	**10%~30%**	**Rare disease: 50%** **Cancer: 50% ~ 90%**	**Depend on Insurer**

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Sharing Taiwan's Experiences with the World!

Facing the Challenges of Health Care System in Taiwan

Taking Patient's Best Interest as the First Priority for Medical Treatment

Open Access

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