



International Comparisons

第一節 | 美國、加拿大、澳洲、日本及我國偏鄉醫療照顧

綜合美國、加拿大、澳洲及日本等國提供的偏鄉醫療照顧，主要的服務面向包括設置專責部會、提供初級衛生保健、保險、主責醫院緊急醫療支援、遠距醫療等。

我國對於偏鄉採行的醫療照顧措施，初級照護是以衛生所為主，並由責任醫院整合人力及資源、巡迴醫療、緊急醫療後送轉診、遠距通訊醫療等。有關美國、加拿大、澳洲、日本、臺灣的偏遠地區衛生政策比較，如表13所示。

2013年我國全國與偏鄉離島每萬人口醫師數比較顯示，全國醫師總數平均每萬人有十八點零三名醫師，山地離島醫師總數平均為每萬人有八點八一名醫師；全國一般科醫師平均每萬人有二點二七名醫師，山地離島一般科醫師平均每萬人有二點八三名醫師。由此可見，我國一般科醫師的分布，符合各國偏鄉離島以初級衛生保健醫療為主的方向。

表13 | 美國、加拿大、澳洲、日本、臺灣偏遠地區衛生政策比較表

國家	專責原住民或離島部會	初級衛生保健	保險	主責醫院 緊急醫療支援	遠距醫療	巡迴醫療	其他
美國	V	V	V		V	V	1.社區健康中心，醫師就近經營
加拿大	V	V	V		V	V	
澳洲	V	V	V	V	V	V	1.訂定偏遠地區及原住民健康策略，125個原住民社區組織，主導健康服務 2.104個精神健康諮商中心
日本		V	V	V	V	V	1.緊急醫療：輸送車(艇)、直昇機 2.老人健保照護結合醫療、保健、社福
臺灣	V	V	V	V	V	V	1.緊急醫療海陸空後送轉診

Section 1 | Rural Health Care in United States, Canada, Australia, Japan and Taiwan

Rural health care provided by the United States, Canada, Australia and Japan mainly consists of the following: setting up specific departments for aborigines, providing primary health care, health insurance, designating hospitals for offering support and telemedicine to rural areas.

In Taiwan, health care services in remote and offshore areas are centered around primary health care provided by health centers which are supported by integrated human and medical resources, mobile health care, emergency medical transport and telemedicine. Comparisons of rural health care in the United States, Canada, Australia, Japan and Taiwan are provided below (Table 13).

In 2013, the number of physicians per 10,000 population in Taiwan is as follows: the national average is 18.03 physicians/10,000 persons, and in rural areas there are 8.81 physicians/10,000 persons. The average ratio of general physicians is 2.27/10,000 persons nationwide and 2.83/10,000 persons in remote and offshore areas. Therefore, we can see that the distribution of general physicians in Taiwan is in line with international standards, with the focus on primary health care in rural areas.

Table 13 | Comparison of health care in rural areas: the United States, Canada, Australia, Japan and Taiwan

Country	Dept.for Aborigines or Remote Areas	Primary Healthcare	Health Insurance	Responsibility Hospital Support	Telem edicine	Mobile Clinics	Other
USA	V	V	V		V	V	1.Community Health Center, physicians operated
Canada	V	V	V		V	V	
Australia	V	V	V	V	V	V	1.Remote area and Aboriginal health strategy. 125 Aboriginal community organizations lead health services 2.104 mental health counselling centers
Japan		V	V	V	V	V	1. Emergency medical care: transportation vehicles (boats), helicopters 2.Elderly healthcare insurance consolidates health and medical care,with social welfare
Taiwan	V	V	V	V	V	V	1. Medical emergency transport by air, sea and land covered by government budgets

第二節 | 我國已達國際級之偏鄉醫療照顧策略

近年來，衛生福利部採行的各項醫療照顧策略，已有效提供偏鄉離島更佳的醫療照護。其中多項策略衡諸國際，亦可為各國參考；包括成立空中轉診審核中心、離島地區的心導管檢查與治療、健保IDS計畫和巡迴醫療的普及程度、醫學中心全面支援、以及四十八個偏鄉電子病歷互通。

24小時視訊醫療諮詢及陸海空緊急醫療後送

為了達到有效的陸海空轉診，成立空中轉診審核中心，配合「行政院國家搜救指揮中心」二十四小時開設，並且派駐醫師輪值。

審核中心不僅提供醫療諮詢，也要評估及審核空中醫療轉送的必要性，並且協調醫院、隨行醫護人員的派遣及醫療設備的調派等，有效建立空中轉診的審核制度、以及提昇空中轉診的醫療品質成效。同時，為了強化諮詢及審核功能，建置「遠端醫療診視視訊系統」，即時提昇山地離島地區醫療人員處理急重症病患的能力。

「全天候受理申請、遠距視訊醫療諮詢及派遣程序」也是確保空中轉診流程、效率及品質的重要因素。衛生福利部具體規劃及執行「空中轉診審核中心離島地區緊急空中後送案件標準作業流程」（圖84、85），基於保障緊急傷病人生命及飛行安全，並2003年頒布符合「救護直昇機管理辦法」之空中救護適應症者，立即派遣衛生福利部委託的民間航空公司執行空中轉診，或依「內政部空中勤務總隊航空器申請暨派遣作業規定」，向內政部空中勤務總隊申請。如果空勤總隊量能不足時，則立即由行政院國家搜救指揮中心支援，全力辦理緊急醫療後送服務，確保空中後送服務不中斷。

Section 2 | Achieving International Quality Rural Health Care in Taiwan

In recent years, the MOHW has adopted multiple health care strategies and has effectively provided remote and offshore areas with improved health care services. A number of policies can be used for reference internationally, such as the establishment of the National Aeromedical Approval Center (NAAC) for emergency transport, cardiac catheterization in offshore areas, the NHI's Integrated Delivery System plan and mobile health care to provide high coverage and electronic medical records interoperability in 48 remote townships. The details are below:

24-Hour Online Telemedicine Consultation & Land, Sea and Air Emergency Medical Transport

The NAAC was established in order to achieve effective land, sea and air emergency medical transport, and in operates in conjunction with the National Rescue Command Center which operates 24-hours a day with physicians on duty. In addition to providing medical consultations, it also provides assessments and audits of the necessity of aeromedical transport, coordination with hospitals, distribution of accompanying medical personnel, deployment of medical equipment and other matters. The goal of such audits is improving the effectiveness of air emergency medical transport. At the same time, we are strengthening the system's consultations and audit functions, and are establishing a telemedicine consultation video system to aid medical personnel in remote and offshore areas to improve their capability for dealing with emergency and critical patients.

Medical consultations by video system and 24-hour dispatch procedures are important factors ensuring smooth procedures, effectiveness and quality of air transport. The MOHW planned and implemented the NAAC's SOP for Emergency Air Transport for remote and offshore areas. (Figures 84, 85) To ensure both flight and patient safety, the Helicopter Emergency Medical Services Management Act was established in 2003. The MOHW will immediately dispatch civil airline companies for air transport or activate National Air Corps' aircraft according to the Ministry of the Interior's National Air Corps Aircraft Application and Dispatch Procedures. Should the NASC be insufficient, then automatically the National Rescue Command Center

空中轉診策略提昇醫療照護品質之分析

透過衛生福利部「空中轉診審核中心」申請件數，近三年達八百六十九案（2011至2013年），核准空中後送計七百九十二案，核准比例達百分之九十一點五六。

再者，由於各項措施已發揮在地醫療化的效果，較同期前三年（2008至2010年）的後送件數九百一十八案，已減少一百二十六案，下降幅度為百分之十三點七三，有效提昇醫療照護的品質。

茲分析背景因素如下：

1. 醫學中心支援各離島已發揮在地化醫療資源。
2. 澎湖及金門已分別建置心導管與外科相關設備，提升醫院醫療照護品質。
3. 連江縣立醫院新大樓及設備投入醫療。
4. 協助蘭嶼及綠島鄉衛生所與馬偕臺東分院遠距視訊，以減少不當的轉診。
5. 定期召開降低空中轉診監督管控審查會議，針對特殊案件進行檢討及減少無效醫療案件。

takes responsibility for emergency medical transport, to ensure uninterrupted air medical services.

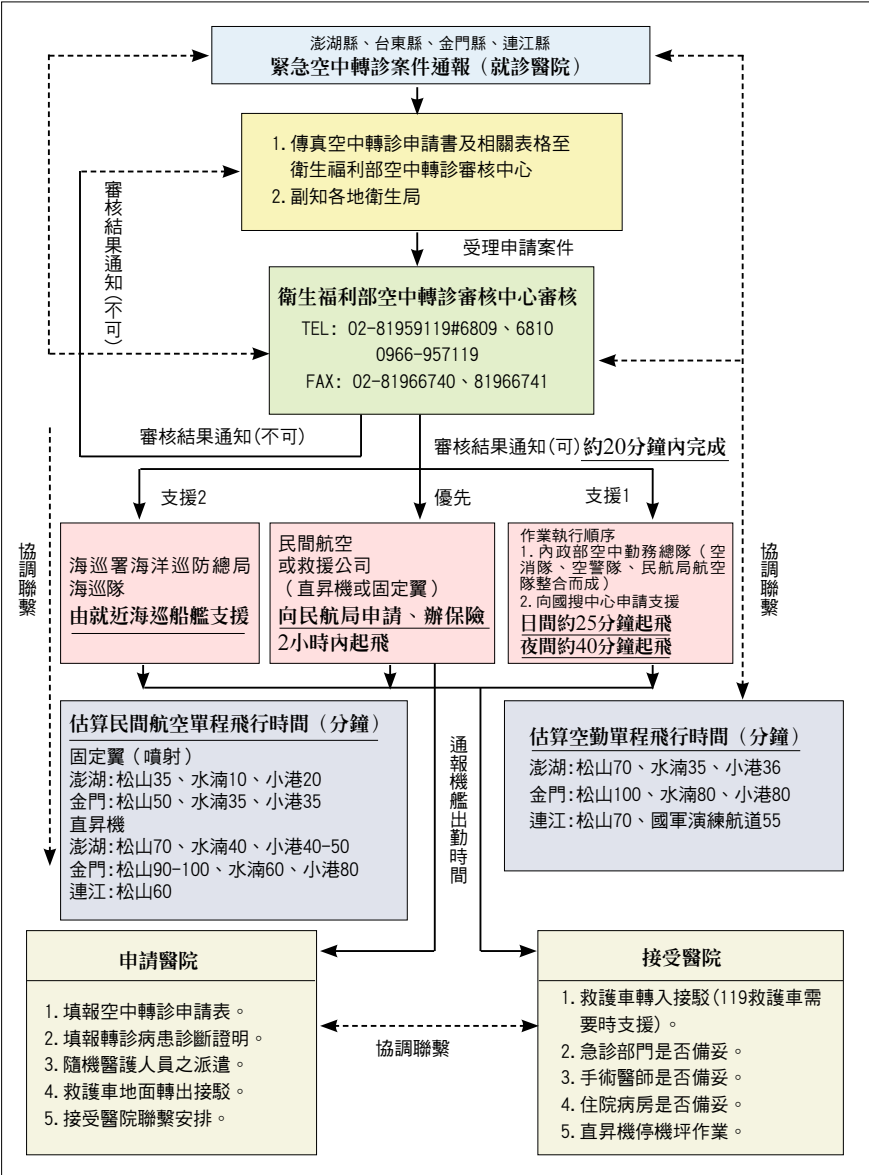
Analyzing the Effectiveness of NAAC

There were 869 applications for emergency air medical transport through the NAAC (National Aeromedical Approval Center) in the past three years (2011-2013), with 792 cases approved for transport, an approval rate of 91.56%. In addition, efforts to localize health care have reduced the number of transports by 126 from 918 cases (13.7%) compared to the previous three-year period (2008-2000), which demonstrates the effectiveness of measures aimed at improving the quality of health care in remote areas. Analyses are as follows

1. The strategy of medical centers supporting hospitals in remote and offshore areas has achieved localization of medical care.
2. Cardiac catheterization and surgery-related equipment have been established on Penghu and Kinmen to enhance the quality of medical services there.
3. Lienchiang County Hospital's new medical building and equipment has significantly boosted the quality of local health care.
4. Mackay Memorial Hospital's Taitung Branch has assisted health centers in Lanyu and Green Island Townships with telemedicine consultations to reduce unnecessary transports.
5. Regular meetings to reduce air transport via supervisory control focus on reviewing special cases and reducing transport in cases where it would be medically ineffective.

圖84 | 衛生福利部空中轉診審核中心離島地區緊急空中後送案件標準作業流程

Figure 84 | NAAC's SOPs for air emergency medical transport from remote and offshore areas



健保IDS計畫及巡迴醫療的普及程度

全國三百六十八個鄉鎮區當中，有四十八個山地離島鄉、此外，東沙、南沙島及一百二十二個醫療資源較不足地區，占全國鄉鎮區的四成七比率，都已納入健保的IDS計畫、或西醫醫療資源不足改善方案實施範圍內，有效平衡城鄉差距，這項服務的涵蓋率為世界各國少有。

醫學中心全面支援

於醫學中心的任務指標當中，增列「配合國家衛生醫療政策，提昇醫療資源缺乏地區急重症照護品質」試辦項目，以評鑑強化醫學中心支援偏鄉地區最為缺乏的急重症照護之意願與量能，協助醫療資源不足地區提昇急重症照護品質，於2012年度迄今，由偏鄉離島緊急醫療的提昇及空中轉診次數的減少，可見其成效。

48偏鄉電子病歷互通

偏鄉醫療數位化是一個長期且具延續性的建設，從遠距醫療、HIS、PACS到電子病歷，逐步改善基礎建設，提昇偏鄉居民就醫品質。

為了克服交通不便及資源不足的障礙，偏鄉電子病歷設計採取雲端架構，大幅降低建置成本與未來維運的難度，而且推動策略與健保IDS等服務模式緊密結合，成效將更為顯著。電子病歷於我國偏鄉離島的完全建置，足以為世界的表率。（圖86、87、88）

離島地區心導管的檢查及治療

2012年起籌劃衛生福利部澎湖醫院，除了設置心導管室、於2013年底落成啟用、醫師人力部分由澎湖籍地方養成公費生作為主力之外，也由奇

Accessibility: The NHI's IDS Plans and Mobile Health Care

Of Taiwan's 368 townships, 48 are mountainous or offshore townships. Added to Donsha and Nansha islands, as well as 122 other areas lacking medical resources, these account for 47% of the townships in Taiwan overall that have been incorporated into the NHI's IDS plan aimed at ameliorating the lack of Western medical resources to balance the health inequities between cities and rural townships. Few countries in the world have achieved this kind of coverage.

Support from Medical Centers

In order to strengthen the will and capacity of medical centers to support emergency and critical care in remote areas, participation in the Health Policy to Enhance the Quality of Emergency and Critical Care for Areas Lacking Medical Resources is included among the tasks for medical center accreditation. We can now demonstrate significantly effective results from improvements in rural emergency medical care and the reduction in air referrals.

EMR Interoperability in 48 Remote and Offshore Areas

Digitizing medical information in remote and offshore areas is a long and continuous process that includes telemedicine, HIS, PACS and electronic medical records (EMR); these improve the basic infrastructure and raise the quality of medical services for residents of rural areas. To overcome the inconvenience of transportation and insufficient medical resources, we now use a cloud-based EMR design which has dramatically reduced costs and challenges of system maintenance. Furthermore, the NHI's IDS provides better and more effective health care through the connections provided by the cloud-based EMR network. Taiwan is one of the leading countries establishing an EMR network for its mountainous and offshore townships. (Figures 86, 87, 88)

Cardiac Catheterization in Offshore Areas

Since 2012, MOHW planned for the establishment of cardiac catheterization lab in the Penghu Hospital and was completed and opened for operation at the end

美醫院與高雄長庚醫院兩大醫學中心的資深心臟內科醫師，每日不間斷支援，並且協助護理及醫事人員的訓練。

透過醫療團隊的合作，截至2014年五月，已完成六十例治療。過去此類個案必須經由空中轉診救治，實施這項措施之後，能在黃金時間內搶救人命，並且節省千萬公帑。



86 87 2012年十二月四日山地離島雲端健康照護記者會。
Press conference on cloud based health care for mountainous and offshore areas on December 4, 2012

of 2013. Physicians mainly are trained and recruited from the public financed scholarships and with daily uninterrupted support from senior cardiologists of Chi Mei Hospital and Kaoshiung Chang Gung Memorial Hospital, as well as training medical personnel. Through the medical corp’s cooperation, the team has successfully treated 60 cases by May 2014. In the past, such cases needed air referrals for treatment, and through the new measures, it can rescue lives within the critical time and also save tens and millions of public funds.

88 | 電子病歷發展藍圖

Roadmap for developing EMR

