

Article Review

Strategies and Challenges in the Distribution of Public Health Centre Doctors in Indonesia

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ABSTRACT

Adequacy of doctors through the deployment of public health center doctors to achieve equity in health services for the community. Maldistribution doctors cause a shortage in central and eastern, especially in remote areas. The deployment of public health center doctors has been implemented through various policies but there are still public health centers that do not have a doctor. This study aims to explore the strategies, and challenges, and successfully resolve the maldistribution of doctors. Document analysis of legal documents was approached using the READ method to determine the distribution strategy of doctors, ten legal documents were found. A Systematic Literature Review (SLR) was conducted using the PRISMA protocol from two online database search engines, where 21 articles were found that meet the research objectives, inclusion, and exclusion criteria. Effectiveness of doctor deployment meeting the need for doctors in remote areas and improving health programs in public health centers. The challenges of the distribution of public health center doctors are due to deployment for remote and very remote areas. Factors that challenge the distribution of doctors are individual factors, work factors, living environment factors, and health system factors. Addressing these challenges needs a combination of attractive incentives that can increase the effectiveness of deploying doctors in remote areas.

Keywords: Doctor, Public Health Center, Remote Area

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INTRODUCTION

Public health development requires health resources to improve public health for the achievement of national development goals ¹. Health resources including doctors are the main pillar to achieve health service equity, especially for areas with geographical barriers ². Public health centers provide essential health services that are more affordable and accessible to the community than hospitals ³. Public health center is the main provider of health services in rural and remote areas, especially those with

limited access to hospitals⁴.

The availability of doctors in public health centers is one of the dimensions of accessibility of health services based on Minister of Health Regulation No. 43/2019. Indonesia faces the problem of the doctor's maldistribution which accumulates in big cities such as Java, Sumatra, and Sulawesi ⁵. This has resulted in a shortage of doctors generally in rural public health centers in central and eastern Indonesia ⁶⁻⁸.

The government recruits and deploys doctors to public health centers using various

strategies, including the Non-Permanent Employee Program (PTT) and Program Penugasan Khusus Tenaga Kesehatan. The challenges with doctor distribution, such as shortages in remote areas, inability to retain doctors, and lack of interest among doctors to participate in deployment programs. This study aims to explore the government's strategies in addressing these challenges and assessing whether the maldistribution of doctors has been successfully resolved.

METHOD

This study used document analysis and Systematic Literature Review approaches. Document analysis was conducted by collecting the policies of the doctor deployment program for public health centers that have been implemented by the government through the Ministry of Health, which were examined systematically. Researchers collected legal documents in the form of Laws, Presidential Regulations, Minister of Health Regulations, Presidential Decrees, Minister of Health Decrees, and Presidential Instructions for the doctor deployment program. The data collected was obtained through the internet and interviews with contacts at the Ministry of Health. Document analysis using the READ approach involves preparing materials, extracting data, analyzing data, and filtering findings⁹. The limitations of document analysis in this study are biases in document selection and the possibility of missing the relevant documents.

The next stage is to conduct a Systematic Literature Review to find out the challenges of the doctor's deployment programs for public health centers in Indonesia by developing a protocol that will guide data collection with Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA). The limitations of the literature review are that no research articles were found for the Inpres Doctor Programme, which is assumed to be due to the limited publication of research articles before 1992 that can be accessed by researchers via the internet and the

limited research articles obtained by researchers on the mandatory PTT Doctor Program only one research article. Researchers conducted searches through online database search engines from Google Scholar and Garuda looking for policies in Indonesia, the search did not limit the year because the doctor deployment program was implemented from 1974 to the present, and the literature search process was carried out on 19- 20 January 2024 with the following results:

Table 1. Online Database Search

Search Engine	Keywords	Identification Process	Results
Google Scholar	“Nusantara sehat”, “Dokter Inpres”, “Inpres Dokter”, “PTT Dokter”, “Dokter PTT”, “penempatan dokter”	Unfiltered	1,209
Garuda	Nusantara Sehat, dokter Inpres, dokter PTT puskesmas	Locking keywords in the abstract	1,044

Screening by removing duplicates and looking at titles and abstracts. One reviewer independently screened titles and abstracts that were potentially relevant to doctor deployment programs at public health centers. Issues were identified with the PICO framework i.e. Population (P): public health center doctors; Intervention (I): doctor deployment program by Ministry of Health; Comparison (C): none; Output (O): public health center doctor deployment challenges. Potentially relevant articles were included in the full-text review. Articles were sorted according to inclusion and exclusion criteria. Inclusion criteria in the search were research articles, available in full text, Indonesian or English language. Exclusion criteria were literature reviews, grey literature and not found by the research objectives. Screening of articles using PRISMA guidelines. The data analysis was done descriptively to identify the challenges of each program. The final stage was to synthesize and interpret the findings descriptively on the challenges of the doctor deployment program.

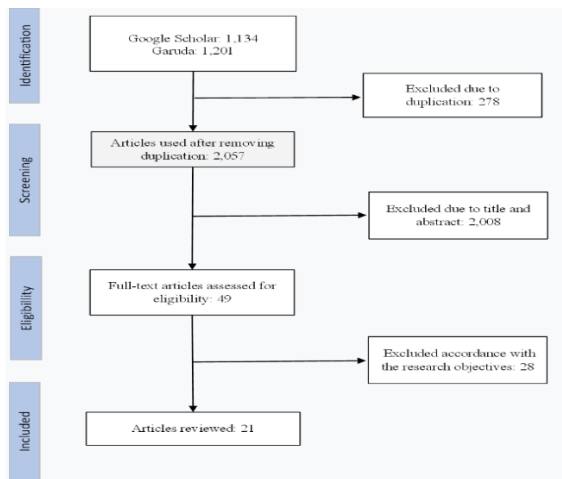


Figure 1. PRISMA flow

RESULTS

Based on the search results, ten legal documents related to the deployment of doctors by the government through the Ministry of Health were obtained. These regulations govern the deployment program of doctors at public health centers from 1974 to the present. The strategy of the doctor deployment program can be seen in the table below:

Table 2. Public Health Centre Doctor Deployment Program in Indonesia

Period Program	Legislation	Strategy
1974-1992	Presidential Instruction No. 5/1974	Mandatory; deployment status of Civil Servants (PNS); temporary work
Dokter Inpres	Presidential Regulation No. 1/ 1988 concerning the Period of Service and Practice of Doctors and Dentists	Mandatory; work in government-owned or private health facilities designated by the government; temporary work
1992-2015	Presidential Decree No. 37/1991 on the Appointment of Doctors as Non-Permanent Employees During the Period of Service	Mandatory; non-civil servant status; deployment in remote and very remote health care facilities prioritized for civil servant appointments, given incentives, reduced duty period
PTT Dokter	Minister of Health Decree 1540/Menkes/SK/XII/2 002 on the Placement of Medical Personnel through Period of Service and Other	Voluntary; temporary work for ordinary areas or remote or conflict areas; giving incentives; deployment in remote and very remote areas get bonus points to take part in CPNS selection
	Decree of the Minister of Health No. 132/Menkes/SK/III/20 06 on the Determination of the Length of Assignment of Non-Permanent Employee Doctors/Dentists in Remote and Very Remote Areas	Assignment in remote areas for one year and very remote areas for six months
	Minister of Health Regulation No.7/2013 on Guidelines for the Appointment and Placement of Doctors and Midwives as Non-Permanent Employees	Deployment outside Java and Bali in underdeveloped, border and island areas (DTPK); temporary work service in remote and very remote healthcare facilities
2015- present	Minister of Health Regulation No. 23/2015 on Penugasan Khusus Tenaga Kesehatan Berbasis Tim (Team Based) in support of Nusantara Sehat Program	Deployment in DTPK and health problem areas (DBK); assignment of teams (five types of health workers) in border areas and outer islands; public health centers with no health workers are prioritized for placement; giving incentives; temporary work
Penugasan Khusus Tenaga Kesehatan dalam Mendukung Program Nusantara Sehat	Minister of Health Regulation No. 16/2017 on Penugasan Khusus Tenaga Kesehatan in support of Nusantara Sehat Program	Assignment at DTPK public health centers; assignment to remote and very remote criteria health centers; team-based or individual assignments; giving participants training to improve their competence; giving incentives
	Minister of Health Regulation No. 33/2018 on Penugasan Khusus Tenaga Kesehatan dalam Mendukung Program Nusantara Sehat Program	Deployment in public health care in DTPK; assignment to urban, rural, remote, and very remote health centers; giving incentives, ensuring the security and safety of participants, preparing infrastructure and shelter

From the table above, it can be seen that the distribution of public health center doctors through a mandatory mechanism with permanent assignments because the doctors had civil servant status as well as in the PTT program then changed to voluntary with giving of incentives from the government. The government currently continues to deploy doctors at public health centers through the Penugasan Khusus Program

with a voluntary mechanism and incentives. The PTT and Penugasan Khusus programs are increasing the accessibility of health services for remote and very remote areas.

The results of a systematic literature review search obtained 21 articles that have been published in scientific journals as can be seen in the table below:

Table 3. Challenges of the Public Health Center Doctor Distribution Program

Author (Year) Title	Methods Program Study Locus	Results
Sulistiyawati, H. et al. (1997) ¹⁰ Studi Tentang Faktor-faktor yang Mempengaruhi Penampilan Kerja Dokter PTT di Indonesia	Mix method PTT 8 provinces	84.9% of PTT doctors stated that their performance was not optimal due to uncertainty of status after the service period (45.6%), having different authorities from civil servants (21.7%), and lack of nonmedical skills (10.3%).
Suwandono, A., Setijadi, G. and Sumantri, S. (2002) ¹¹ Hasil Awal Angket Dokter PTT	Quantitative PTT All provinces in Indonesia	<ul style="list-style-type: none"> 87% of provinces stated that PTT doctors were constrained by recruitment due to central bureaucracy (62.5%); The performance of PTT doctors is hampered because they do not want to occupy service posts in need; there are no adequate transport facilities, adequate housing facilities Obstacles to choosing a post-PTT career 66.7% of provinces were unable to support the PTT doctor program
Freely, N.W. (2004) ¹² Pengetahuan, Sikap dan Persepsi Koasisten tentang Kebijakan Dokter Pegawai Tidak Tetap (PTT) di Tiga Fakultas Kedokteran di Jawa Barat	Cross-sectional PTT 3 medical faculty in West Java	<ul style="list-style-type: none"> 20% of the coassistants were not interested in PTT because of inadequate salary, want to continue specialist doctors, not being allowed by family, and safety concerns. 65% of the coassistants were interested in undergoing PTT to get a Practice Licence (SIP) and continue as a specialist doctor at a lower tuition fee, career security, and dedication.
Herman, H. and Mubasysyr, H. (2008) ¹³ Evaluasi kebijakan penempatan tenaga kesehatan di puskesmas sangat terpencil di Kabupaten Buton	Qualitative PTT Buton District, Southeast Sulawesi Province	<ul style="list-style-type: none"> Doctors are not retained in very remote health centers because there are no incentives available, career development patterns are unclear, geographical conditions Health worker placement policies are still generalized and short-term orientated. Dependence on doctor recruitment from the national government
Gondodiputro, S., Djuhaeni, H. and Wiwaha, G. (2009) ¹⁴ Ekspektasi Rencana Masa Depan Mahasiswa Program Pendidikan Kepaniteraan Dokter (P3D) Tahap Dua Fakultas Kedokteran	Cross-sectional PTT Medical faculty, Padjajaran University, West Java Province	<ul style="list-style-type: none"> Students who are interested in working in primary care facilities 26.72%, interested in working in primary and secondary care facilities 37.40%, interested in working in secondary care 20.61%, interested in working in the health sector 13.74%.

Author (Year) Title	Methods Program Study Locus	Results
Universitas Padjadjaran Angkatan 2000-2001		
Laksmiarti, T. and Hanggara, Y.S. (2013) ¹⁵	Qualitative PTT	The era of decentralization gives local governments the authority to recruit doctors, but North Minahasa District has never recruited a doctor because there is no budget for doctor incentives so the recruitment of doctors in DTPK is an assignment of the Ministry of Health.
Synchronization Placement Regulation Legislation on Personnel Placement in Remote, the Border and Islands	Sumenep district and North Minahasa city	
Erlan, A. (2015) ¹⁶	Qualitative PTT	PTT doctors with a one-year contract who serve as heads of a public health center pose a problem of program continuity when doctors complete their assignments.
Condition of Health Problems in the District Parigi Moutong Central Sulawesi Province, Efforts in Response to Health Problem	Parigi Moutong District Central Sulawesi	
Indahyani, R. (2015) ¹⁷	Qualitative PTT	Doctors recruitment in 2012-2014 were nine PTT doctors from APBN funds and nine PTT doctors from APBD funds but there is still a shortage of doctors. Recruitment of more doctors could not be done because of the lack of budget for PTT honor payments.
Analisis Implementasi Kebijakan dalam Penggunaan Dana APBN dan DAK di Kabupaten Jayawijaya Tahun Anggaran 2012-2014	Kabupaten Jayawijaya	
Palembangan, P., Rantetampang, A. and Pongtiku (2015) ¹⁸	Cross-sectional PTT	Factors affecting the performance of PTT doctors are the payroll system for PTT doctors is unsatisfactory (70.7%), career certainty after joining PTT is not sure (65.9%), facilities and infrastructure are not feasible (65.9%), the supervision system for the performance of doctors is not good (61%), the security condition of the place of duty is not conducive (73.2%)
Factors Affecting the Performance of Non-Permanent Medical Health Employees in the Bintang Mountains, Papua	Pegunungan District Bintang	
Syahmar, I. et al. (2015) ¹⁹	Cross-sectional PTT	<ul style="list-style-type: none"> Factors influencing not intending to practice in rural areas are spousal influence, career advancement opportunities Close to family influenced not to apply for the PTT program as most respondents were from urban
Indonesian medical students' preferences associated with the intention toward rural practice	Medical student 4th and 5th year Universitas Indonesia	
Arifandi, A. and Meliala, A. (2017) ²⁰	Qualitative PTT	<ul style="list-style-type: none"> Working environment conditions in remote areas are less satisfactory, and division tasks are not good because of the shortage of health workers; high workload due to shortage of doctors; the district health office has not provided supervision There are no opportunities for further education and career development; educational facilities for children are still lacking; the condition of the very remote areas is limited to transport, access to communication
Faktor yang Mempengaruhi Rekrutmen Dokter di Puskesmas Wilayah Kerja Dinas Kesehatan Kabupaten Buol Tahun 2016	Buol District	
Nurchahyo, H., Suryoputro, A. and Jati, S.P. (2016) ²¹	Qualitative Penugasan Khusus	<ul style="list-style-type: none"> Do not meet the target applicants because information through the media in the registration did not include the benefits for
Analisis Proses Rekrutmen		

Author (Year) Title	Methods Program Study Locus	Results
Dan Seleksi Tenaga Kesehatan Tim Nusantara Sehat Dalam Program Nusantara Sehat Kementerian Kesehatan	Badan Pengembangan dan Pendayagunaan SDM Kesehatan, Ministry of Health	participating in the program; do not have clarity on career paths after assignment. <ul style="list-style-type: none"> • First-period recruitment was centralized in Jakarta, resulting in transportation costs for participants
Soewondo, P. et al. (2019) ²² Inspecting primary healthcare centers in remote areas: Facilities, activities, and finances	Qualitative Penugasan Khusus 18 public health centers in Penugasan Khusus Nusantara Sehat locus	Barriers to access to public health centers in DTPK are poor road infrastructure conditions
Laing, E. (2020) ²³ Pelaksanaan Pembangunan Bidang Kesehatan Di Kecamatan Kayan Selatan Kabupaten Malinau	Qualitative PTT and Penugasan Khusus South Kayan Subdistrict, Malinau District	The status of PTT or Nusantara Sehat doctors who work with a contract system per year cannot guarantee the sustainability of doctors in the border area.
Nurlinawati, I. and Putranto, R.H. (2020) ²⁴ Factors Related to Health Workers' Placement in First-Level Health Care Facilities in Remote Areas	Mix method Penugasan Khusus 193 health centres proposed locus for Penugasan Khusus with Nusantara Sehat Teams in 24 provinces in 2019	<ul style="list-style-type: none"> • Public health centers that are committed to providing housing for the Nusantara Sehat team on duty are 89.1%. • Public health centers committed to providing vehicles that can be used by the Nusantara Sehat team are 67%.
Akbar, M.I. (2020) ²⁵ Analysis Of The Needs Of General Practitioners In Public Health Centers Using Health Workload Method	Qualitative Penugasan Khusus Tampo and Wapunto Public Health Center in Muna District	<ul style="list-style-type: none"> • The Nusantara Sehat program has not fulfilled the shortage of general practitioners in Muna District due to the lack of interest from doctors who would be assigned in remote areas
Noya, F. et al. (2021) ²⁶ Factors associated with the rural and remote practice of medical workforce in Maluku Islands of Indonesia: a cross-sectional study	Cross-sectional Penugasan Khusus Maluku Province	<ul style="list-style-type: none"> • The Nusantara Sehat program is a temporary assignment that does not guarantee the continuity of doctors in remote areas • Doctors who want to continue practicing in Maluku are doctors born in Maluku, graduates of Pattimura University, and unlikely to be with temporary employment status.
Su'udi, A. et al. ²⁷ Analisis Kondisi Geografis dan Ketersediaan Peralatan di Puskesmas Terpencil/Sangat Terpencil di Indonesia	Cross-sectional Penugasan Khusus 193 public health centers in 25 provinces that are the proposed locus for Penugasan Khusus with Nusantara a Sehat Team	<ul style="list-style-type: none"> • The geographical condition of remote and very remote public health centers experiencing isolation at 54.8% • Some public health center lack a minimum standard equipment set of 80% • Lack of availability of essential medicines and vaccines which can hinder emergency cases
Noya, F.C., Carr, S.E. and Thompson, S.C. (2022) ²⁸ Commitments, conditions,	Interpretative phenomenological analysis Penugasan Khusus	<ul style="list-style-type: none"> • The district health office relies on the Nusantara Sehat program with temporary assignments to cover remote areas • The district government recruits doctors with poor management due to a lack of

Author (Year) Title	Methods Program Study Locus	Results
and corruption: An interpretative phenomenological analysis of physician recruitment and retention experiences in Indonesia	Provinsi Maluku	transparency, so doctors are less interested in working in remote health centers through local government recruitment.
Idaiani, S. and Waris, L. (2022) ²⁹ Depression and Psychological Stress Among Health Workers in Remote Areas in Indonesia	Cross-sectional Penugasan Khusus 39 public health centers in 28 provinces	<ul style="list-style-type: none"> • Proportion of Team-based Nusantara Sehat experiencing depression at 7.1% and psychological stress at 10% in 2018 • Work motivation is related to psychological stress. Work motivation is influenced by leadership, job satisfaction, income, social support, and job skills
Noya, F.C., Carr, S.E. and Thompson, S.C. (2023) ³⁰ Attracting, Recruiting, and Retaining Medical Workforce: A Case Study in a Remote Province of Indonesia	Qualitative Penugasan Khusus Maluku Province	<ul style="list-style-type: none"> • The local government has provided additional incentives but has not improved working and living situations. • Local governments in remote areas struggle to offer incentives, housing, and vehicles • Doctors are from outside Maluku Province and not retained to serve in remote areas

This systematic review of 21 research articles identified challenges faced in the implementation of the doctor deployment program by the Ministry of Health through PTT doctors and Penugasan Khusus.

DISCUSSION

Effectiveness of Doctors Distribution Program

The deployment of public health care doctors by the government through the Ministry of Health is still carried out today in the era of decentralization to fulfill public health center services³¹. Various strategies for the deployment of public health center doctors from compulsory to voluntary mechanisms with incentives are quite effective efforts to improve the accessibility of doctor services in remote areas³². Even local governments tend to rely on the recruitment of doctors in public health centers by the Ministry of Health to meet the needs of doctors in their areas both during the PTT doctor period^{15,33}, as well as the Penugasan Khusus period with Nusantara Sehat³². This is due to the limited fiscal capacity of local

governments to recruit and provide incentives for doctors³⁴.

The assignment period for doctors through the deployment program is temporary^{16,32}. A two-year assignment period can result in improvements in the public health index with innovations in health programs carried out at public health centers³⁵. Research by Soewondo et al. (2019) found that indicators of Program Indonesia Sehat dengan Pendekatan Keluarga (PIS-PK) improved with the deployment of temporary health workers³⁶.

Challenges Distribution Doctors Program

Distributing doctors in remote and very remote public health centers is a continuous effort by the government. Attracting and recruiting doctors to work in remote areas is a challenge. Doctors are unwilling and uninterested in being placed in remote areas due to several factors, namely:

- Individual factors
Temporary assignment contracts limit career development and further education for doctors²⁰.

WHO recommends providing continuing education to healthcare workers in rural³⁷. The Ministry of Health offers educational assistance in the form of awards to those who have participated in Penugasan Khusus to increase recruitment³¹.

Access to education for children in remote areas is still insufficient²⁰. This discourages doctors from working in rural and remote areas³⁸, causing doctors already to leave³⁹. A study in the Asia-Pacific region found that adequate schooling facilities are crucial for attracting doctors to work in rural areas⁴⁰.

- **Job factors**

The condition of health workers in remote health centers has a high workload²⁰; and limited access to health equipment and medicines²⁷. Deploying doctors to remote areas causes depression and psychological stress²⁹, a study shows that inadequate accommodations, limited growth opportunities, a lack of medical staff, insufficient healthcare infrastructure, and restricted access to public amenities^{27,41}.

A study by Mohammadiaghdam et al. (2020) has shown that the lack of medicines and health equipment is important in encouraging doctors to stay in rural areas⁴². This is consistent with a study in Senegal that the availability of equipment in health facilities impacts the probability of health professionals staying in a rural⁴³.

The PTT program has been criticized for inadequate salary provision^{10,11,44}, but the Penugasan Khusus Program provides incentive compensation from the government and additional incentives from local governments³⁰. Providing attractive incentive packages is recommended by WHO to encourage health workers to work in rural or remote areas³⁷. A study in Mozambique found that combination incentive packets encourage work in rural or remote areas⁴⁵.

- **Living circumstances factors**

Remote public health centers struggle to reach their work areas due to geographical conditions and poor road infrastructure^{22,27}. This is particularly problematic for poor people in rural or remote areas⁴⁶. A study by Putri et al. (2022) found that transportation facilities are important for doctors to work in

rural for support personal dan professional⁴⁰.

- **Health system factors**

Temporary deployment of doctors doesn't guarantee the continuity of doctors at public health centers²⁶. Another distribution of doctors is through the recruitment of State Civil Apparatus (ASN) lacks interest in doctors to work in remote areas⁴⁷. Local governments must provide housing and transportation but remote areas are struggling to do these responsibilities (11,30,48). The literature review found that local governments are still not fully able to fulfill this obligation. A study by Honda et al. (2019) found that improving health system functioning improves retention in rural posts⁴³.

CONCLUSIONS

The program distributes public health center doctors through temporary mechanisms with incentives, which is still effective in meeting the need for doctors in remote areas. However, there is a need for longitudinal studies to assess the long-term impact of this program. Various challenges in implementing this program such as the lack of interest in deploying doctors to remote health centers due to individual, work, living environment, and health system factors. To address this issue, further research is needed to develop a combination of attractive incentives that can increase the effectiveness of recruiting doctors in remote areas. The government and local government can provide support by improving living conditions in remote areas, including road infrastructure, housing, transportation, communication, and security. This support will optimize life in remote areas and encourage more doctors to deploy to these regions. Policy support is required to deploy doctors in low fiscal capacity regions, which requires further research.

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