

The opinion of general practitioners in Malaysia on newly imposed third party health administrator policies in primary care

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ABSTRACT

Background: Third Party Health Administrators (TPA) has become an integral part in the field of funding healthcare for most parts in the world. Although they ensure access to medical care when out-of-pocket payment is required, TPAs have been found to impose unreasonable dictation in medicine prescriptions that undercuts doctors remuneration including paying very low medical consultation fees, types/methods of treatment and modalities for their policy holders. The objective of this study was to get the opinion of Malaysian doctors regarding the newly imposed policies and rates that these companies have forcibly dictated towards private primary care General Practitioners (GPs).

Materials and methods: This was a cross sectional study, conveniently sampling private GPs currently practicing in Malaysia. A self-developed online questionnaire was sent out to the members via social media with the assistance of the Malaysian Medical Association the affiliates of Federation of Private Medical Practitioners Associations of Malaysia and Medical Practitioners Coalition Association of Malaysia. Data was collected from April to July 2021. A series of 7 short questions were asked in the survey to yield a higher response rate. A population to proportion sample size was calculated and a minimum of 365 responses were required. All data collected were collated and analysed in the SPSS v21.0

Results: From a total of 7,000 GPs, 491 GPs (134.52% of intended sample size) responded to the questionnaire. The largest portion of respondents were from Selangor (21.79%). A total of 65.58% of the GPs felt that the RM 15 consultation fee dictated by the TPAs was unfair, 71.08% felt it was unfair that TPA overwrote certain investigations done or medicines given as over-treatment, 90.84% felt that TPAs had no jurisdiction to dictate the number of days of medication patients needed for chronic medical conditions, 95.52% did not agree that TPAs fix the price of each medication, 54.58% agreed that marking up medications from 5-15% of the original purchase price was fair and 68.64% agreed that they would boycott TPAs that were unreasonable with their dictation/demands.

Conclusion: GPs generally disagreed with many new policies imposed by TPAs. These new policies might hinder the screening, management and early detection of chronic non communicable diseases here in Malaysia.

KEYWORDS:

Third Party Health Administrators restrictions, General Practitioners, Malaysia

INTRODUCTION

The Malaysian healthcare system was established during colonial times and is known to have one of the best and cost effective healthcare systems in the world.¹ Today, the Malaysian healthcare system functions on a dual-tiered system: the government funded (serves 65% of the population) and the private healthcare system (serves 35% of the population).² The government hospitals are fully funded by the Government of Malaysia and patients pay as little as Ringgit Malaysia 1 to be able to obtain good health services (foreigners are charged in full).² The private healthcare system is another parallel system to that of the government healthcare system but patients (both Malaysians and foreigners) are required to either pay from their own pockets (out-of-pocket payment) or via health insurance payments/Third-Party Administrators (TPAs) appointed/selected by their employers.²

Both systems are divided into 3 levels- primary care (mostly health clinics), secondary and tertiary care (mostly hospital-based care). Primary care in the private settings are doctors who are either self-employed or employed under an organization mostly owned by doctors managing a chain of private health clinics.² They are normally termed as General Practitioners (GPs) if they are general physicians who look after basic ailments or Family Medicine Specialist if they have pursued a Masters in Primary Care (Family Medicine) or its equivalent. These doctors are required by law to have a valid practicing certificate which is renewed annually and they must work in a premise gazetted/approved by the Ministry of Health. These doctors are allowed to manage and follow up patients and dispense medications from their clinics.

Third Party Health Administrators (TPHAs) and Health Management Organisations (HMOs) are large companies or healthcare insurance companies that manage healthcare services for particular organisations. It is becoming a norm that companies/organisations appoint TPAs to manage their healthcare benefits for employees.³ This is for both acute illnesses and chronic illnesses- but for this paper, we will focus more on chronic illnesses and comorbidities. Some companies decide to manage their own healthcare benefits

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by appointing panel clinics and they pay the doctor for services and treatment (fee for service) for their employees on a monthly basis. In this study, we refer to Third Party Administrators (TPAs) as companies managing their own healthcare benefits for employees, TPHAs or HMOs.

These TPAs generally appoint panel doctors around the country to be part of their healthcare services offered to clients- commonly known as panel-ship. As TPAs appoint GPs of their choice based on their charges on the applications sent. They have the right to revoke the GPs panel-ship should they find a reason to do (it can range from a trivial to a severe matter). TPAs constantly remind GP panels that they would look for other new GP panels to manage their healthcare needs if current panels do not comply to their fixed set of rules. As more companies are utilising TPA services, many GPs are left with little choice but to abide with sometimes unjust terms set by them. Under their new terms, there are times when GPs are left short-changed either by being underpaid or not being paid at all for certain medical treatment or procedures.³ Among some of the new terms amended and recently implemented were- fixing of medication prices (sometimes as low as doctors' cost prices) and imposing the minimal consultation fee of RM15 (without considering if it was a long or short consultation). The TPAs claim that their fee regulation for consultation was in accordance with the last fee schedule gazetted in the 90s.^{2,4}

Some TPAs went as far as dictating medical practices by specifically enforcing rules that resulted in patients only being able to receive 3 to 6 weeks of medications for chronic comorbidities- to which the patient is expected to get help from a tertiary centre (hospital) should they not respond to the prescribed medication (they are not allowed to get treatment for the same complain from the same GP due to the fact that they have not yet exhausted their prescribed medications). This is a deviation from what is normally done in primary care where doctors tend to manage early non-communicable diseases by reviewing the patients' response towards treatment for a period of 1 to 2 weeks in the beginning (depending on severity). Some TPAs (especially companies managing their own healthcare benefits) have decided to undercut the doctors by obtaining medication from pharmacies and the panel doctors are allowed only to provide a prescription for Long Term Medication (LTM) (forced dispensing separation).³ They forced doctors to write prescriptions for policy holders and the medication is collected every 2 or 3months from an appointed pharmacy without any review of their condition(s).³ Multiple pleas by doctors on these issues made to the TPAs went unheeded.

These newly imposed rules by TPAs have led to many unfortunate events and the GPs were caught in the middle. There were times when this new unregulated practice have seen some patients comorbid conditions deteriorating for the worse while some even experiencing side-effects (allergy reactions) of medications that were altered without the prescribing doctor's knowledge.³ Many were also concerned with the current implications as it might affect them financially- those of the consultation fees, the fixing of the prices of drugs and unnecessary excessive medical practice controls like suppressing the number of drugs doctors can

provide during consultation and the number of days medications are provided for chronic conditions.

This has become worrisome as Primary Care remains and is the sole gatekeeper in the management of chronic non-communicable diseases in any country.⁵ Primary care is looked upon as a bridge between the tertiary care and patient healthcare.⁵ If primary care is empowered, we will see less complications of chronic diseases leading to better patient healthcare.⁵ The management of these chronic comorbidities requires time and dedication of the physician to ensure that the patient receives the best of primary healthcare.⁵

Thus, the aim of this study was to obtain the opinions of GPs regarding these new dictations and financial implications imposed by the TPAs on medical practice at the GP level.

MATERIALS AND METHODS

This was a cross-sectional study conducted amongst private GPs currently practicing in Malaysia from April 2021 to July 2021. The researchers utilised a self-developed online questionnaire to GPs from professional associations (convenient sampling) to obtain the data for this study. We included only private practitioners- both general physicians and specialists who were treating patients who were under TPAs. The questionnaire was sent to potential respondents via social media with the assistance of dissemination from professional bodies like the Malaysian Medical Association, the Private Practitioners Society of Malaysia along with their subsidiaries and the Medical Practitioners Coalition Association of Malaysia. To obtain a better response rate amongst our busy colleagues, we decided to keep the questionnaire simple with a hope to yield a higher response rate. The questionnaire consisted of 7 questions. The respondents were first asked on their current location of practice (list of states were given), if they agreed with the RM 15 consultation rate offered by TPAs (Yes/No), if TPAs should be able to curb over-treatment protocols when it is acceptable to norms (Yes/No), if TPAs should dictate the number of days treatment for chronic diseases should be given (Yes/No), if TPAs should be allowed to fix the price of drugs being charged to them (Yes/No), if GPs felt that charging prices of medications with a 5-15% markup fee is acceptable (Yes/No) and if GPs were willing to participate in a boycott towards TPAs if their consultation fee was not adjusted/unreasonable dictation of demands not removed (Yes/No/Maybe). All questions were set and marked as compulsory- meaning that respondents could not proceed with submission unless they had provided an answer to all 7 questions. There was no time limit set on the questions but each GP was only allowed to answer the questionnaire once. This was done by capturing google account log in to their browsers- it served as an attendance marker for the Google forms (google enabled feature) to electronically signify that they have attempted the survey and dual participation would be denied. There were no remunerations given for answering the questionnaire. All questionnaires submitted were automatically collated in a specially designated email for the study. It was auto tabulated in an Excel spreadsheet before being imported into SPSS v21.0 for further analysis.

Sample size

There were 7,000 odd GPs registered with the Ministry of Health in Malaysia.⁶ Conducting a population to proportion sample size, we utilised the Raosoft sample size calculator (available at: <http://www.raosoft.com/samplesize.html>) to calculate a sample size. Setting the margin of error at 5%, the confidence interval at 95%, the population size at 7,000 and the distribution at 50%- the final sample size needed for this study was 365.

Ethical approval

This study was a low-risk study conducted amongst doctors without getting any of their personal details or identifiers. The doctors were informed that participation in the study was optional and had no implications if they decided not to participate. They signified their willingness to participate in this survey by clicking on the link if they chose to participate. The researchers therefore did not see a need to apply for an ethics approval for this study.

RESULTS

The researchers sent out the invitation of the survey via social media and electronically. The total respondents were 491- this was 134.52% of the intended sample size of 365.

Demography

Most of the respondents were practicing in the state of Selangor (21.79%), followed by Pulau Pinang (17.11%), Wilayah Persektuan Kuala Lumpur (14.87%), Perak (14.26%), Sarawak (13.24%) and followed by the other states. Full description of the respondents' place of practice are listed in Table 1.

Questions concerning cost / pricing/ financing in general practice when concerning TPAs

The GPs were asked 3 questions that involved costs which TPAs newly imposed. The first was setting the consultation fee at a flat rate of RM 15- to which 65.58% of the GPs disagreed. The researchers then asked if the GPs felt that if it was alright for TPAs to be allowed to fix the prices of drugs being billed to them- to which 95.52% of GPs disagreed. From the total, 54.58% of the GPs felt that the marking up of medication prices by 5-15% was acceptable. Full details of the responses are available in Table II.

Questions concerning the practise of medicine as dictated by TPAs

The GPs were asked 3 questions regarding their opinion on the practice of medicine as being newly dictated by TPAs. The first was if GPs felt that TPAs should be allowed to curb over-treatment protocols when it was acceptable within norms- to which 71.08% disagreed. From the total, 90.84% felt that TPAs should not dictate the number of days treatment is given to patients for chronic conditions like hypertension and diabetes. When we enquired if GPs were keen to participate in the boycott should the TPAs continue making unreasonable demands/dictating the way medicine is practiced, 68.64% of them agreed to do so whilst 29.33% of them were undecided. Full details are listed in Table III.

DISCUSSION*Summary of results*

From this study we found that 65.58% of doctors disagreed with the RM 15 consultation, 54.58% agreed with the 5-15% markup for drugs and 95.52% were against the fixing of medication prices by TPAs. From the grouses of dictation in medicine practice- 71.08% felt that TPAs had no right to curb overtreatment protocols, 90.84% did not agree that TPAs should dictate the number of days treatment be given for chronic illnesses and 68.64% were ready to participate in a boycott should the TPAs not repent from their current unreasonable dictations.

Discussion

TPAs must understand that primary care is getting more and more important where chronic comorbidities are managed and is looked as a bridge between the tertiary care and patient healthcare.⁵ Primary care services are becoming more popular worldwide and remains the first place of presentation for many ailments the public might have before being given any medical treatment.⁷ The management of chronic co-morbidities requires time and dedication of the physician to ensure that the patient receives the best of what primary healthcare can offer.⁵ If primary care is empowered, we will see less complications of chronic diseases leading to better patient healthcare.⁵

The consultation fee issue is something that must be addressed urgently. The reason for this is that it was ridiculous to know that the GPs housed in private hospitals were allowed to charge a consultation fee between RM 35 to RM 125 (depending on the length and circumstances of the consultation) but GPs practicing in their own premises (not hospital based and having much more overheads) were not allowed to amend their consultation fee charges of RM 15.^{3,4,8,9}(6) This was due to the fact that Section 7 of the new Private Health Care Facilities and Services Act (that regulated the consultation fees for GPs practicing outside a hospital settings) was not gazetted.^{9,10} This was indeed strange for doctors as they were equally qualified but paid different consultation fees solely based on the premise of practise.^{9,10}

This is a cause of concern due to a few reasons. In an article published in the United States, it was reported that physicians might under-perform if they are not compensated well enough.¹¹ Amongst the possible reasons is that they will have to see more patients in order to earn a decent living- and this might cause them to rush in between patients.¹² Also, in a recent study done in Malaysia- it was reported that as many as 20% of the GP clinics in Malaysia would potentially close if medicine prices were controlled.⁸ This is due to the fact that GPs operating from clinical premises are currently depending on these earnings to make ends meet and compensate for their meagre consultation fee. Thus, with a meagre consultation fee, the prices of medications might be affected- making them more expensive.⁸

As found in this research- controlling medication prices is something the doctors are not willing to compromise with. Controlling medicine prices might seem lucrative to the TPAs but little do they release that in the long run it will cost them more due to other newly developed chronic conditions

Table I: The place of practise of respondents answering the questionnaire

| State | N (%) N=491 |
|---------------------------------|----------------|
| Selangor | 107 (21.79) |
| Pulau Pinang | 84 (17.12) |
| Wilayah Persektuan Kuala Lumpur | 73 (14.87) |
| Perak | 70 (14.26) |
| Sarawak | 65 (13.24) |
| Johor | 29 (5.91) |
| Sabah | 17 (3.46) |
| Negeri Sembilan | 11 (2.24) |
| Kedah | 10 (2.04) |
| Pahang | 9 (1.83) |
| Melaka | 5 (1.02) |
| Terengganu | 5 (1.02) |
| Perlis | 2 (0.41) |
| Wilayah Perseketuan Putrajaya | 2 (0.41) |
| Kelantan | 1 (0.20) |
| Wilayah Perseketuan Labuan | 1 (0.20) |

Table II: Questions concerning cost/pricing/financing in General Practice when concerning TPAs

| Question | N (%) N=491 |
|---|----------------|
| Do you agree with an RM 15 consultation fee rate offered by the TPAs? | |
| Yes | 169 (34.42) |
| No | 322 (65.58) |
| Should TPAs be allowed to fix the price of drugs being charged to them? | |
| Yes | 22 (4.48) |
| No | 469(95.52) |
| Do you feel that charging prices of medication with a 5-15% markup fee is acceptable? | |
| Yes | 268 (54.58) |
| No | 223 (45.42) |

Table III: Questions concerning the practice of medicine as being dictated by TPAs

| Question | N (%) N=491 |
|---|----------------|
| Do you think that TPAs should curb over-treatment protocols when it is within acceptable norms? | |
| Yes | 142 (28.92) |
| No | 349 (71.08) |
| Do you feel that TPAs should dictate the number of days treatment that should be given to patients (eg Chronic conditions like hypertension and diabetes) | |
| Yes | 45 (9.16) |
| No | 446 (90.84) |
| Would you join us in our quest to reprimand these TPAs or boycott those TPAs that are being unreasonable (fixing consultation fee to RM15, dictating on medications allowed and duration, fixing prices of medication etc)? | |
| Yes | 337 (68.64) |
| No | 10 (2.04) |
| Maybe | 144 (29.33) |

amongst their policy holders.¹³ It was reported in a Malaysian study amongst the private healthcare sector, that the control of medication prices will be amongst the reasons health outcomes for patients deteriorate in the country.⁸ Not only will the patients' healthcare be affected, but it will cause many private practices to potentially close (estimated 2600 from 14000 or nearly 20%) thus causing a bigger issue with healthcare access for many especially in the rural areas.⁸ It might also cause many private tertiary care centres to close their primary care services and in the long run- it will cause many of them to relocate to different countries.⁸ With TPAs trying to control the medication prices that doctors can

charge (and some at ridiculously low prices), it can spell disaster for the healthcare of this country- in terms of complications from comorbidities, proper access to medical care for patients and long-term survival of GP practice in the country.⁸

For some time now, TPAs have been at loggerheads with the way medicine is practised.¹⁴ In a study reviewing primary care services in the United States- it was reported that primary care facilities have been in constant disputes with third-party payer systems/TPAs especially when it comes to the type of treatment offered, the choice of investigations,

unnecessary paperwork and claims processing for simple ailments.⁷ In the same paper, it was reported that 79.2% of physicians felt that TPA models were becoming more unattractive especially due to the fact of imposed over-regulations, 64.5% felt that there was a loss of clinical autonomy and 54.4% felt that there was an erosion of physician-patient relationship due to unnecessary regulations.⁷ The paper also suggests that chronic conditions are not properly addressed at times because physicians are not compensated enough for their time and due to many restrictions especially when it comes to charging the TPAs.⁷ In another review done in the United States, it was found that access to medical care was often restricted due to grappling healthcare centres faced with insurance companies.¹⁴ Amongst the points of contention were the issue of costs and potential over-treatment.¹⁴ However, the TPAs must begin to draw a line on investigations for screening and over-treatment given by the physician. The curb of over-treatment or indications/diagnosis based investigations by TPAs has been heavily debated in countries like Holland.¹⁵ Though extensive clinical research might have been conducted on diseases with specific investigations on certain conditions, it must be understood that patients present differently and a clinical assessment/diagnosis should be the final cut-off point for doctors to perform an appropriate investigation instead of spending their time arguing with TPAs on indications of investigations.¹⁵ For example- a case of myocardial infarction can present in many ways- some come with chest discomfort or left shoulder pain, some come with nausea and other come with gastritis symptoms.¹⁶ More often than not, investigations like Electro Cardio Grams and blood investigations might not suggest an on-going myocardial infarction until an angiogram (Computerised Tomography or the invasive version) is performed.¹⁶ This should be left to the doctor to decide based on his/her clinical examination, findings, experiences and at times- their hunch. The management of conditions not only requires research data but also input from clinicians, administrators and it requires a political will of financiers to allow practitioners to practice medicine without being restricted by financial implications set by the TPAs.¹⁵ As far as administration is concerned, a review done in Ghana reported that political interference towards medical practice and even to some amount of healthcare financing services can cause disruption in service treatment and quality.¹⁷

In order to curb over-spending on medication and treatment, it is best practitioners apply preventive medicine- to which early screening for diseases especially for non-communicable diseases becomes vital. Screening for non-communicable diseases in the United Kingdom is conducted free for those aged from forty to seventy four years of age.¹⁸ This includes heart diseases, stroke, diabetes, kidney disease and individuals with high risk of certain cancers (ie breast cancer).¹⁸ Though screening might be done here in Malaysia in the primary care of the government service, the waiting time is simply just too long and it might result in not detecting diseases in the nick of time. When looking at screening in Sweden- they have a healthcare system that allows for TPAs to cover for basic disease screening but a fixed price is charged to patients for the visits.¹⁸ This is fair for all parties as it will prevent abuse by the patient, fair to the TPA

as to not be over-burdened by healthcare visit costs and it is also an opportunity for TPAs to consider an increase in the consultation fees for doctors (with the savings made). In this instance- it provides a wholesome financial sense for all and it must be considered by Malaysian TPAs. After all, the Malaysian government does offer tax incentives up to RM 1,000 per year for individuals for money spent on healthcare screenings. In Germany, TPAs organise health screenings every year for individuals aged more than 35 and those attending these screenings are given a rebate on their health insurance premiums- as an incentive to cultivate the habit for chronic comorbid screening.¹⁸ This is another way that we can foster the community to lead a healthier lifestyle and creating a reward system for doing so. Amongst ways promoted to move the healthcare systems forward is to identify the current barriers within a system and to get expert opinions for solutions.⁵

Why is screening important and not considered over-treatment? It is because non-communicable diseases are becoming the major cause of morbidity and end organ damage not to mention causing an increase in healthcare expenditure.^{13,19,20} Many countries have aimed at early detection to prevent further complications from non-communicable diseases.^{19,21} Amongst the many reasons making this possible is if there is reduction in stringent requirements or practices of investigations (ie for end organ damages) which are dictated by unreasonable terms- making primary prevention the modality of aim to prevent non-communicable diseases.^{7,15,19-21}

In South East Asia, non-communicable diseases remain one of the greatest causes of mortality before the COVID-19 pandemic era.²² Even so, we know that non-communicable diseases heavily affect the severity of the COVID-19 infection faced by patients- making a difference in severity, survival and mortality.²³ Thus, controlling non communicable diseases and preventing end-organ damage becomes even more important after COVID-19. In Malaysia- the control of our non-communicable diseases is becoming a concern.^{24, 25} Not only must chronic comorbidities be handled better, but prevention is very much needed. In order for this to happen, we will need to screen more patients for chronic comorbidities to pick them up in the early stages- pre hypertension, pre diabetes etc.^{16,24} This can only take place if we allow physicians the freedom to investigate and conduct screening on their patients when they see fit.²⁶ This has to be supported by the TPAs because it will end up saving patients from chronic comorbidities and indirectly reducing the expenditure on healthcare in the long run.

In the context of Malaysia, we must get the TPAs to understand that the sustainability of healthcare includes looking after the welfare of doctors and ensuring that patient medical management is not compromised due to unreasonable dictations- including the duration of medications dispensed, the type and number of medications given to a patient. This is also another way of empowering primary care to towards creating a holistic patient care leading to a healthier Malaysia. In order to ensure that patients receive the best of healthcare services, the inclusion of certain services like physiotherapy services, weight-loss

management, cessation of smoking and newer modalities of treatment like shockwave therapy and laser therapies must find their way into primary care services covered by TPAs.¹⁸

For much of the recommendations to happen, we must understand that physicians have to lead change in healthcare or it might result in the loss of control over the practice of ethical and holistic medicine with unreasonable administrative control.¹¹ The more physicians lead the way to reorganise healthcare, the less administrators and insurers will be driven to intervene in the practice of medicine.¹¹ Patients need to receive wholesome care and this requires physicians to be at liberty to practice ethical medicine without being dictated especially when it concerns the management of chronic comorbidities.¹¹

Strengths, Limitation and Future research

This study would be one of the few if not the only publication on the opinion of General Practitioners based on their TPAs. In order to get more responses, the researchers collected few demographic details of the participants which might have differed according to year of practice, age etc. We also did not attempt to collect data based on different TPAs. Thus, for future research, not only should these demographic details be included, but opinion on each existing TPA can be studied to identify if GPs have different opinions based on different TPAs.

CONCLUSIONS

In conclusion, Malaysian GPs generally disagreed with many new policies imposed by the TPAs especially those that dictated unreasonable financial constraints in the practice of medicine. The GPs were also of a common opinion in agreeing that a boycott would be needed if these unreasonable demands continue to govern the way medicine is practiced towards policy holders. With Malaysia already known for having one of the best healthcare systems in the world, why are the TPAs trying to fix something which is not broken? These newly introduced TPA policies might hinder the screening, management and early detection of chronic non-communicable diseases here in Malaysia. This might cause a distress in the access to healthcare services in future and subsequently lead to an increase in the incidences of chronic diseases (ie End Stage Renal Failure, Cerebral-Vascular Accidents etc).

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REFERENCES

1. The-Daily-Star. Malaysia ranks 1st in world's best healthcare. The Daily Star. 2019.
2. Quek D, editor The Malaysian Health Care System: A Review. Intensive workshop on health systems in transition; 2014 07/05.
3. A-Concerned-Medical-Practitioner. Losing The NCD Battle With Companies Making A Quick Buck 2020 . [cited March 2022] Available from: <https://codeblue.galencentre.org/2020/12/28/losing-the-ncd-battle-with-companies-making-a-quick-buck-a-concerned-medical-practitioner/>.
4. Association MM. Medical Procedures and Services Nomenclature (MPSN). In: Association MM, editor. Malaysia: Malaysian Medical Association; 2020.
5. Schoen C, Osborn R, Doty MM, Squires D, Peugh J, Applebaum S. A survey of primary care physicians in eleven countries, 2009: perspectives on care, costs, and experiences. *Health Aff (Millwood)*. 2009;28(6):w1171-83.
6. MalaysiaKini. Medical association: 7000 GPs being sidelined by indecisive gov't2019 [cited March 2022]. Available from: <https://www.malaysiakini.com/news/499961>.
7. McCorry D. Direct primary care: an innovative alternative to conventional health insurance. *Background*. 2014;2939:1-13.
8. Zainuddin A. Medicine Price Controls May Erase RM206 Bil From Economy CodeBlue: CodeBlue; 2022 [cited March 2022] Available from: <https://codeblue.galencentre.org/2022/01/28/medicine-price-controls-may-erase-rm206bil-from-economy/>.
9. Lum M. GP Fees – Gazette Amended Schedule 7 - CodeBlue Codeblue- Health is a Human Right Website: Codeblue; 2019 [cited March 2022] Available from: <https://codeblue.galencentre.org/2019/06/04/gp-fees-gazette-amended-schedule-7/>.
10. Malaysia MoH. PRIVATE HEALTHCARE FACILITIES AND SERVICES (PRIVATE HOSPITALS AND OTHER PRIVATE HEALTHCARE FACILITIES) (AMENDMENT) ORDER 2013. In: Malaysia MoH, editor. Malaysia: Government of Malaysia; 2013. p. 174.
11. Porter ME, Teisberg EO. How physicians can change the future of health care. *Jama*. 2007;297(10):1103-11.
12. Atcheson SG, Brunner RL, Greenwald EJ, Rivera VG, Cox JC, Bigos SJ. Paying Doctors More: Use of Musculoskeletal Specialists and Increased Physician Pay to Decrease Workers' Compensation Costs. *Journal of Occupational and Environmental Medicine*. 2001;43(8).
13. Heller O, Somerville C, Suggs LS, Lachat S, Piper J, Aya Pastrana N, et al. The process of prioritization of non-communicable diseases in the global health policy arena. *Health Policy Plan*. 2019;34(5):370-83.
14. Schoen C, Osborn R, Squires D, Doty M, Rasmussen P, Pierson R, et al. A survey of primary care doctors in ten countries shows progress in use of health information technology, less in other areas. *Health Aff (Millwood)*. 2012;31(12):2805-16.
15. Moes FB, Houwaart ES, Delnoij DMJ, Horstman K. "Strangers in the ER": Quality indicators and third party interference in Dutch emergency care. *J Eval Clin Pract*. 2019;25(3):390-7.
16. Then KL, Rankin JA, Fofonoff DA. Atypical presentation of acute myocardial infarction in 3 age groups. *Heart Lung*. 2001;30(4):285-93.
17. Alhassan RK, Nketiah-Amponsah E, Arhinful DK. A Review of the National Health Insurance Scheme in Ghana: What Are the Sustainability Threats and Prospects? *PLoS One*. 2016;11(11):e0165151.
18. Fenger M, Qaran W. New Welfare in Health Insurances? Trends in Risk-Coverage and Self-Responsibility in Four European Countries. *Social Policy and Society*. 2013;12(4):597-609.
19. Beaglehole R, Yach D. Globalisation and the prevention and control of non-communicable disease: the neglected chronic diseases of adults. *The Lancet*. 2003;362(9387):903-8.

20. Beaglehole R, Bonita R, Horton R, Adams C, Alleyne G, Asaria P, et al. Priority actions for the non-communicable disease crisis. *The Lancet*. 2011;377(9775):1438-47.
21. Boutayeb A, Boutayeb S. The burden of non communicable diseases in developing countries. *Int J Equity Health*. 2005;4(1):2.
22. Ghaffar A, Reddy KS, Singhi M. Burden of non-communicable diseases in South Asia. *Bmj*. 2004;328(7443):807-10.
23. Abdul Taib NA, Baha Raja D, Teo AKJ, Kamarulzaman A, William T, Arvinder-Singh H-S, et al. Characterisation of COVID-19 deaths by vaccination types and status in Malaysia between February and September 2021. *Lancet Reg Health West Pac*. 2022;18:100354.
24. Keng ZY, Saw YM, Thung SC, Chong WW, Albert A, Kariya I, et al. Rate of achievement of therapeutic outcomes and factors associated with control of non-communicable diseases in rural east Malaysia: implications for policy and practice. *Sci Rep*. 2021;11(1):3812.
25. Mok WKH, Hairi NN, Chan CMH, Mustapha FI, Saminathan TA, Low WY. The Implementation of Childhood Obesity Related Policy Interventions in Malaysia—A Non Communicable Diseases Scorecard Project. *International journal of environmental research and public health*. 2021;18(11):5950.
26. Daar AS, Singer PA, Persad DL, Pramming SK, Matthews DR, Beaglehole R, et al. Grand challenges in chronic non-communicable diseases. *Nature*. 2007;450(7169):494-6.