INA-RESPOND

INDONESIA RESEARCH PARTNERSHIP ON INFECTIOUS DISEASE

KEMENTERIAN KESEHATAN REPUBLIK INDONESIA

NEWSLETTER

December 2022

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Physical Activity for Health in People with Disabilities

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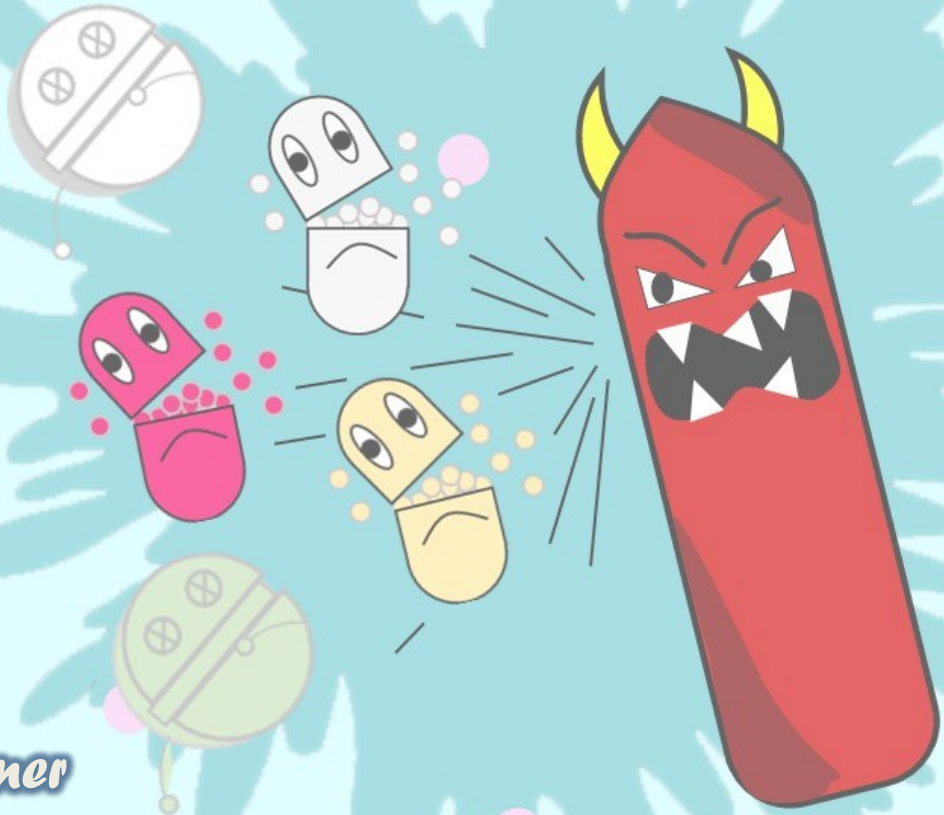

Science Corner

Anti-Tuberculosis Drugs Resistance Patterns in Pulmonary TB Patients from Seven Referral TB Hospitals: An Imperative, Descriptive Publication from The INA-RESPOND TB Study

HEALTH POLICY AGENCY
MINISTRY OF HEALTH REPUBLIC OF INDONESIA
2022

MASTHEAD

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INA-RESPOND Newsletter

TRIPOD and PROACTIVE Study Updates

By: Eka Windari R., I Wayan Adi Pranata, Lois E. Bang, Melinda Setiyaningrum, Nur Latifa Hanum, Retna Mustika Indah, Riza Danu Dewantara

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The submitted manuscript of TRIPOD titled "The Characteristics of Drug Sensitive and Drug-Resistant Tuberculosis Cases in Indonesia" was accepted by the American Journal of Tropical Medicine and Hygiene on 18 August 2022, and it has been available online since 17 October 2022 www.ajtmh.org/view/journals/tpmd/aop/article-10.4269-ajtmh.22-0142/article-10.4269-ajtmh.22-0142.xml?rskey=NOzYfd&result=1) This manuscript article will be scheduled to appear in volume 107 issue 5 of AJTMH.

The second paper, "Performance of Xpert TB/RIF and Sputum Microscopy Compared to Sputum Culture for Diagnosis of Tuberculosis in Seven Indonesian Hospitals," was accepted in the Frontiers in Medicine - Infectious Diseases - Surveillance, Prevention on 8 December 2022. The journal production team is now processing it before it is published.

In collaboration with the Division of AIDS (DAIDS), NIAID, and NIH, CRDF Global will be coordinating a two-and-a-half-day grantsmanship workshop, in conjunction with the RePORT India annual meeting in India on 5-10 February 2023. dr. Adhela Menur Naysilla from the INA-RESPOND Secretariat has won the opportunity to join as a participant in the RePORT international junior investigator grantsmanship workshop.

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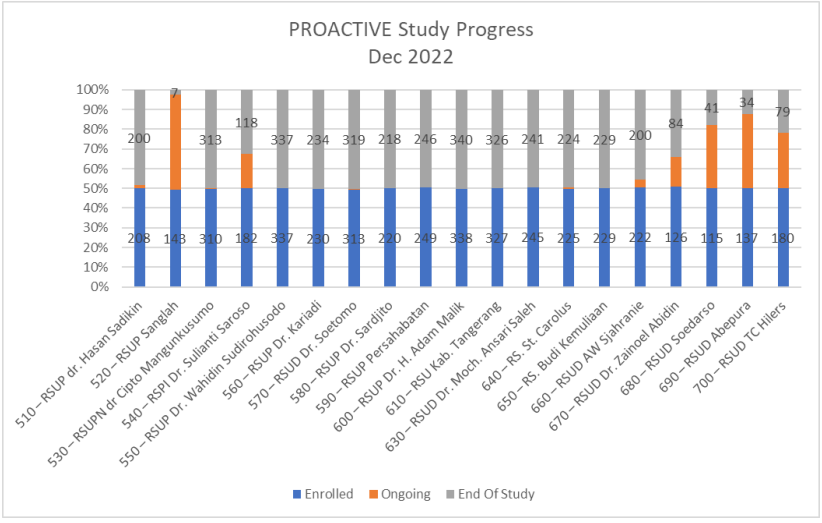
As of 2 December 2022, out of 4,336 subjects enrolled, 3,958 (91.28 %) subjects have ended their study, and 377 (8.71 %) are still ongoing. For the End-of-Study, 3,248 subjects had already completed the study until the Follow-up Visit Month 36, 359 subjects were lost to follow-up, 247 subjects died, 34 subjects moved to the city without a PROACTIVE Site, 32 subjects withdrew consent, five subjects were HIV negative, and two subjects were suspended (imprisoned). The study progress from each site is described in Figure 1, while detailed information on the End-of-Study participants is available in Table 1.



After the completion of the follow-up at site 610 - RSU Kabupaten Tangerang in September 2022, sites 510, 550, 560, 580, 590, 600, 630, 640, 650, and 660 also completed the follow-up for all their subjects. The previously mentioned sites will have a site monitoring visit by appointment and site close-out visits within six months from the last follow-up before archiving the documents the following month. For the monitoring activity, two on-site monitoring visits are scheduled for early 2023, namely site 600 – RS. Adam Malik on 25-27 Jan 23; site 590 – RS. Persahabatan, Site 560 – RS. Kariadi, and Site 670 – RS. Zainoel Abidin in Feb 2023; and Site 540 – RSPI Sulianti Saroso in Mar 2023.

No	Site	End of Study Duration/ Complete	Withdrew Consent	Participants with HIV negative	Moved	Death	Investigator Discretion	Lost to Follow Up	Other	Total
1.	510 – RSUP Dr. Hasan Sadikin	188	1	0	2	5	0	4	0	200
2.	520 - RSUP Sanglah	4	0	0	0	3	0	0	0	7
3.	530 – RSUPN Dr. Cipto Mangunkusumo	283	0	0	0	17	0	13	0	313
4.	540 – RSPI Dr. Sulianti Saroso	98	0	0	2	8	0	10	0	118
5.	550 – RSUP Dr. Wahidin Sudirohusodo	240	0	0	5	25	0	67	0	337
6.	560 – RSUP Dr. Kariadi	199	1	3	0	15	0	16	0	234
7.	570 – RSUD Dr. Soetomo	261	13	0	4	21	0	20	0	319
8.	580 – RSUP Dr. Sardjito	168	1	0	5	6	0	38	0	218
9.	590 – RSUP Persahabatan	186	0	1	0	37	0	22	0	246
10.	600 – RSUP Dr. H. Adam Malik	253	3	0	2	21	0	61	0	340
11.	610 – RSU Kabupaten Tangerang	272	6	0	4	20	0	22	2	326
12.	630 – RSUD Dr. M. Ansari Saleh	215	1	0	1	7	0	17	0	241
13.	640 – RS St. Carolus	210	0	0	0	1	0	13	0	224
14.	650 – RSU Budi Kemuliaan Batam	179	3	0	5	9	0	33	0	229
15.	660 – RSU A. Wahab Sjahranie	177	0	0	2	6	0	15	0	200
16.	670 – RSUD Zainoel Abidin	68	0	0	0	11	0	5	0	84
17.	680 – RSUD Soedarso	29	0	0	0	11	0	0	1	41
18.	690 – RSUD Abepura	22	2	1	1	7	0	1	0	34
19.	700 – RSUD TC Hillers	60	1	0	0	16	0	2	0	79
	Total	3112	32	5	33	246	0	359	3	3790

INA-RESPOND Newsletter

ANTI-TUBERCULOSIS DRUGS RESISTANCE PATTERNS IN PULMONARY TB PATIENTS FROM SEVEN REFERRAL TB HOSPITALS: AN IMPERATIVE, DESCRIPTIVE PUBLICATION FROM THE INA-RESPOND TB STUDY

By: Nur Latifah Hanum, Adhella Menur

Before the COVID-19 pandemic, tuberculosis (TB) disease was the leading cause of death from a single infectious agent, *Mycobacterium tuberculosis* (MTB), ranking above HIV/AIDS. Almost one-third of the global population is infected with MTB, of which 1 in 10 will develop active TB, and the rest will define as latent TB. This high proportion of latent infections implies long co-evolution between MTB and its human hosts. The latency can last for decades, only flaring into active disease when the person is weakened by hunger, old age, or other immunocompromised states. Even though Robert Koch first introduced MTB on March 24, 1882, genetic analyses of this airborne bacteria worldwide suggest that it evolved tens of thousands of years ago. An astonishing discovery in 2008 confirmed the theory, which revealed a successful MTB DNA extraction from the bones of a mother and baby buried 9000 years ago, found at Atlit-Yam, Israel, a prehistoric village that now lies beneath the waters of the Mediterranean Sea. That made us wonder, decades after decades with numerous scientific breakthroughs, why can't we combat this curable ancient pathogen? (1, 2)

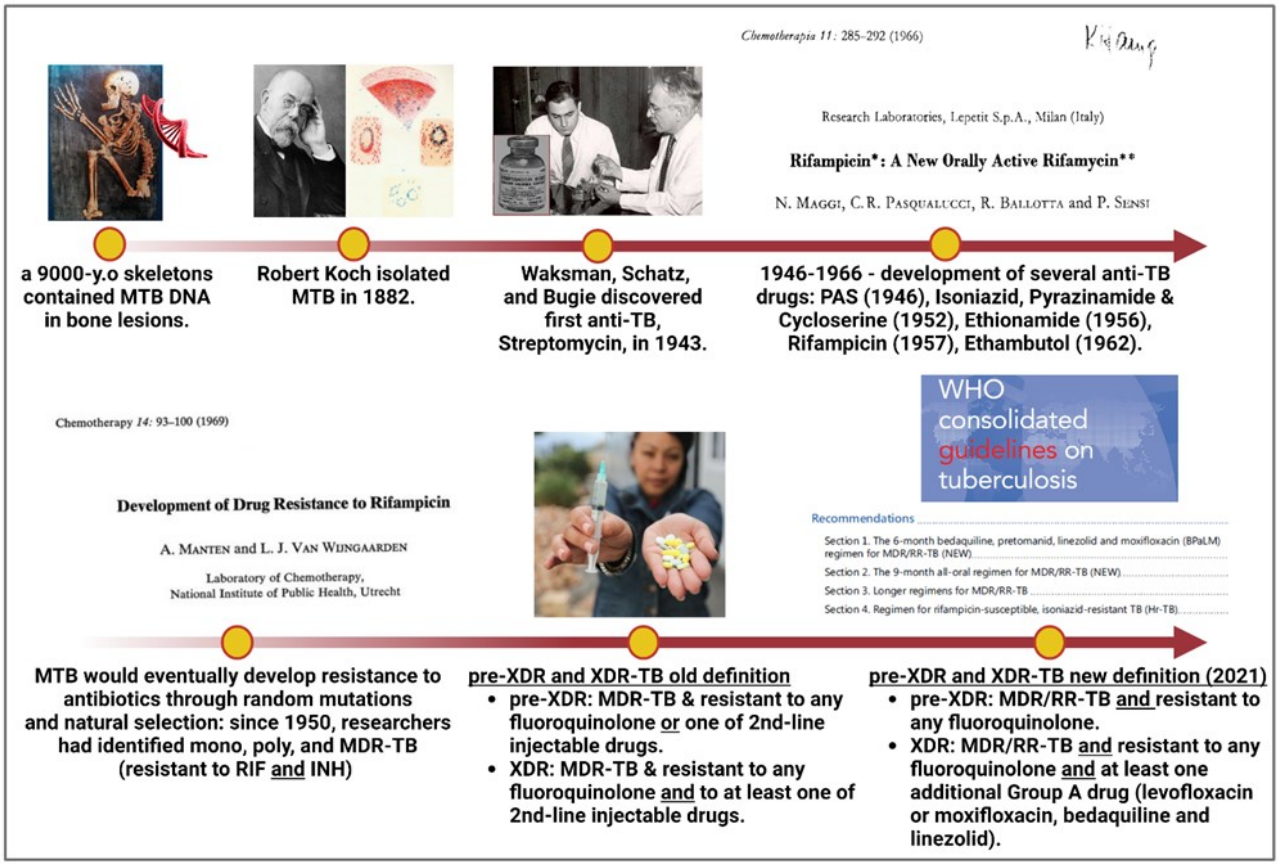


Figure 1. Timeline of drug-resistance tuberculosis (2-4).

MTB has unique biological features, such as a thick and lipid-rich cell envelope, very slow asymmetrical division, and antibiotic-degrading and modifying enzymes that lead to anti-TB drug resistance. The general hypothesis that resistance always conferred a loss of bacterial fitness and hence led to lower case fatality rates and decreased transmission had been disputed by MTB. Since the first anti-TB drug discovery, Streptomycin, in 1943 and followed by other drugs, resistance always has escorted it. The incidence of drug-resistant (DR) TB has increased yearly and continues to be a public health threat due to high morbidity, mortality, and devastating socioeconomic impacts. Rifampicin (RIF) resistance (RR) – the most effective first-line drug – is of greatest concern. Resistance to RIF and isoniazid (INH) is defined as multidrug-resistant TB (MDR-TB). MDR/RR-TB requires treatment with second -line drugs, which are long and disturbing. In 2021, there were an estimated 450,000 incident of MDR/RR-TB cases worldwide; 3.6% among new cases and 18% among those previously treated. Indonesia is listed as the second highest TB burden country in the world and amongst the seven countries that accounted for two-thirds of global MDR/RR -TB cases. Worryingly, only 35% of 24,000 estimated MDR/RR-TB cases were laboratory confirmed, of which 60% of patients were initiating treatment, and <50% were successfully treated (1, 3, 5-7).

In 2017-2020, INA-RESPOND conducted a prospective cohort study of adult pulmonary TB patients at seven DR-TB referral hospitals in seven large cities in Indonesia (Dr. Soetomo, Surabaya; Sanglah, Denpasar; Dr. Sardjito, Yogyakarta; Dr. Kariadi, Semarang; Persahabatan, Jakarta; H. Adam Malik, Medan; and Dr. Wahidin Sudirohusodo, Makassar) namely TRIPOD (Tuberculosis Research of INA-RESPOND On Drug Resistance, NCT02758236) study, with dr. Erlina Burhan, Sp.P(K) as the national principal investigator. At that time, Indonesia's anti-TB drugs resistance testing rates are lower than global testing rates and there was lacking data for DR-TB, particularly amongst newly diagnosed TB cases. The TRIPOD primary objective was to estimate the proportion of MDR-TB amongst newly diagnosed and previously treated pulmonary TB cases. During study baseline period, before 7 days of anti-TB treatment, sputa from participants were collected to be tested for acid fast bacilli (AFB) smear, Xpert MTB/RIF, MTB culture, and drug susceptibility test (DST) at appointed National TB Program (NTP) reference laboratories. Among those with positive MTB culture and had DST results, participants were further categorized as having drug-sensitive/ susceptible TB (DS-TB), mono-resistance TB, poly-resistance TB, MDR-TB, pre-extensively (pre-XDR-TB), and XDR-TB based on updated WHO 2021 criteria. Two years after the study ended**, the first manuscript of the TRIPOD study was published on October 17, 2022, in the American Society of Tropical Medicine and Hygiene journal, entitled *"Characteristics of drug-sensitive and drug-resistant tuberculosis cases among adults at tuberculosis referral hospitals in Indonesia"*** [doi: 10.4269/ajtmh.22-0142] (8).

Among 447 participants with complete AFB, GeneXpert MTB/RIF, and sputum culture results, 260 (58.2%) were classified as newly diagnosed TB and 187 (41.8%) as previously treated TB cases. Sputum culture was positive in 173 (66.5%) newly diagnosed TB and in 139 (74.3%) previously treated TB cases. Based on DST results of 312 participants, 158 (50.6%) were still classified as DS-TB; 66.5% (115/173) in newly diagnosed TB and 30.9% (43/139) in previously treated TB cases. Mono resistance was more frequent in newly diagnosed TB versus previously treated TB cases (32.8% versus 14.6%). MTB resistant to either RIF or INH dominated the mono- and poly-resistant subgroups for both newly diagnosed TB (73.7% and 61.5%) and previously treated TB (64.3% and 88.9%) cases. **The proportion of MDR and pre-XDR was 46% (64/139) and 6.5% (9/139) in previously treated TB and 13.3% (23/173) and 1.7% (3/173) in newly diagnosed TB cases.** Only one of the newly diagnosed DR-TB cases had prior contact with DR-TB patients. **Thus, most of newly diagnosed DR-TB cases did not have a clearly identifiable source of resistance.** Cavities in the chest X-ray and diabetes mellitus were common in DR-TB participants (8).

In the TRIPOD study, the proportion of MDR-TB among newly diagnosed TB and previously treated TB cases was much higher than reported in the WHO Global TB Report.

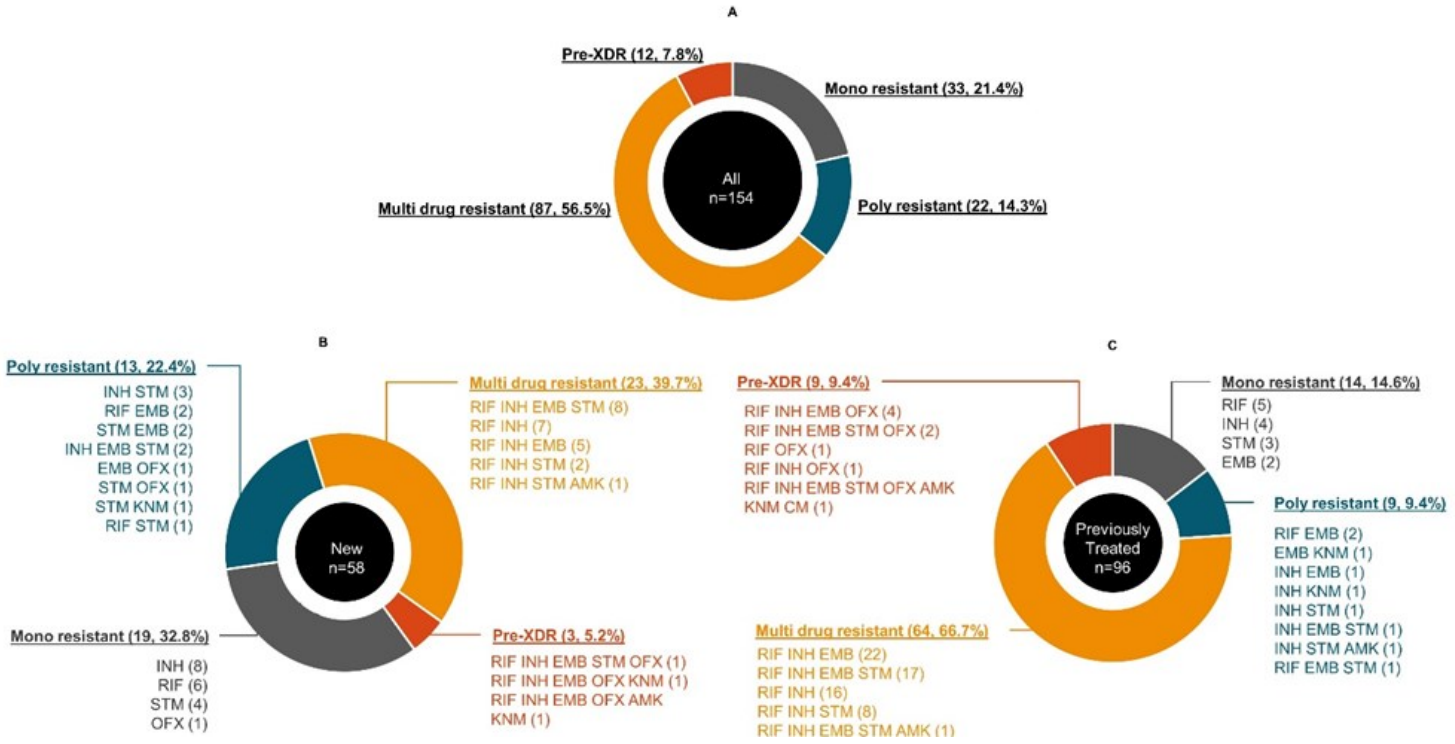


Figure 2. Distribution of drug resistance patterns among newly diagnosed and previously treated TB cases in the TRIPOD study. AMK=amikacin; EMB=ethambutol; INH=isoniazid; KNM=kanamycin; OFX=ofloxacin; RIF=rifampicin; STM=streptomycin

This large discrepancy may be attributable to lack of recent TB surveillance in Indonesia, which was last conducted in 2013–2014. Additionally, TRIPOD participants were recruited from referral hospitals, whereas previous surveys recruited from community health centers. Most participants had sought treatment both in public and

private facilities before being sent to the referral hospitals, suggesting the population represented more difficult cases. Further characterization of Indonesia's TB epidemiology in the general population is needed (8).

Identification of 58 (33.5%) participants with DR (32 mono/poly-resistant, 23 MDR, and three pre-XDR) among those without previous exposure to anti-TB drugs supports reports that primary DR-TB has increased up to 80% in some settings. However, the study cannot exclude the possibility that patients were incorrectly categorized as treatment naive because prior anti-TB drug use may not have been accurately reported. The high incidence of DS- and DR-TB cases in previously treated individuals underlines the high risk of recurrent TB in this population and contributes substantially to disease burden. Post-treatment follow-up that anticipates TB relapse and secondary preventive therapy may accelerate reduction of TB incidence and save resources for TB control (8, 9).

Mandatory DST to first-line drugs in the TRIPOD study enabled detection of a high proportion of MTB isolates resistant to INH in non-MDR/XDR groups (22 of 213 patients (10.3%)). Access to DST remains low particularly for newly diagnosed TB patients, consequently INH resistance is often undetected in daily practice because the more readily available rapid diagnostic test (Xpert MTB/RIF) detects only RR. If INH resistance is not seen, patients will receive drugs for DS-TB, which is suboptimal for DR-TB and increases the risk of treatment failure, relapse, or acquiring RR. In the TRIPOD study, among 167 patients with RIF sensitive by Xpert, 15 (9%) were INH resistant by DST. A recent large whole genome sequencing (WGS) study revealed that INH resistance may predate RR. In the current WHO guidelines for DR-TB treatment, patients with confirmed RIF-susceptible, INH-resistant TB (Hr-TB) are recommended to be treated with rifampicin, ethambutol, pyrazinamide, and levofloxacin for six months (4, 8).

This manuscript highlights the need to improve current public health approaches to TB in Indonesia. Because primary DR-TB was relatively high, community transmission must be addressed by screening programs and tracking of case contacts followed by more liberal use of DST, for which Indonesia has low uptake. Comprehensive drug-resistant data will allow patients to be treated with effective drugs, reduce development of drug resistance and toxicity, and inform public health program treatment algorithms. Early detection and adequate treatment will reduce transmission, morbidity, and mortality. In addition, strengthening public–private partnerships and improving coordination between the national health insurance scheme and the NTP will reduce diagnostic delays and minimize costs.

The TRIPOD findings offered crucial data to the TB community on the serious threat of DR-TB transmission in Indonesia. The threat is worsening after the damaging impact on access to TB diagnosis and treatment during the COVID-19 pandemic. Notwithstanding, there are silver linings in every circumstance. The COVID-19 pandemic increases government and public awareness regarding the importance of pathogen surveillance, health protocols, transmission control, and healthcare equity. It also accelerates the deployment of rapid molecular testing, WGS, and resources training. In 2022, the country owned 21 national TB laboratories qualified for MTB culture; 12 can perform DST for rifampicin, isoniazid, moxifloxacin, levofloxacin, amikacin, bedaquilin, linezolid, clofazimine, and pyrazinamide, and seven can perform line probe assay (LPA). 1819 Xpert MTB/RIF available in 34 provinces, with a plan to expand Xpert MDR/XDR, which provides rapid detection of isoniazid, fluoroquinolones, and second-line injectables resistances (7). Eighteen sequencer machines, as a part of the COVID-19 response mechanism, will distribute to enhance genomic surveillance and drug resistance for various pathogens, including MTB (10).

Finally, we need to embrace a powerful message of the opening remark from the WHO director in the global TB report 2022. Quoted, ***"If the COVID-19 pandemic has taught us anything, it's that with solidarity, determination, innovation and the equitable use of tools, we can overcome severe health threats. Let's apply those lessons to TB. It is time to put a stop to this long-time killer. Working together, we can end TB."***(1)

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INA-RESPOND Newsletter

PHYSICAL ACTIVITY FOR HEALTH IN PEOPLE WITH DISABILITIES

By: Edrick Purnomo Putra

December 3rd is celebrated as International Day of People with Disabilities (IDPD) every year. This annual observance was proclaimed in 1992 by the United Nations. It aims to promote the inclusivity of people with disabilities in aspects of society by affirming their rights and well-being.1 According to WHO, when individuals with a health condition interact with personal and environmental factors, a barrier called disability is created as a result. Health conditions may vary, such as Down syndrome, cerebral palsy, depression, Parkinson's disease, other physical impairments, mental and intellectual impairment, and visual and hearing impairment. Personal and environmental factors include negative attitudes, inaccessible transportation, inaccessible building, and limited social support. This barrier hinders the full and effective participation of individuals in society on an equal basis.2 The United Nations Disability Inclusion Strategy provides that the full and complete realization of the human rights of all persons with disabilities is an inalienable, integral, and indivisible part of all human rights and fundamental freedoms. This strategy is in accordance with one of the UN's Sustainable Development Goals, which is to reduce inequalities for humanity.1

Talking about well-being and its relation to health, physical activity is an inseparable aspect. However, reality shows the opposite. For example, a study of 706 adults aged 70 years or greater showed that individuals with moderate or greater hearing impairment had greater odds of having a low physical activity level compared to those with normal hearing.3 People with disabilities are less likely to participate in physical activity regularly compared to people without disabilities, yet they still have to promote health and prevent non-communicable diseases just like people without disabilities.4 A WHO report shows that people with disabilities face the risk of dying much earlier, even up to 20 years earlier, compared to people without disabilities due to systemic and persistent health inequities. The risk of developing chronic conditions is increased up to double for asthma, depression, diabetes, obesity, oral disease, and stroke.5 Physical activity, on the other hand, provides benefits to prevent those diseases. Physical activity confers benefits for health outcomes, such as improved all-cause mortality, cardiovascular disease mortality, hypertension, site-specific cancers, type 2 diabetes, mental health, cognitive health, sleep, and measures of adiposity.6 For people with disability, exercise can also give therapeutical benefits, such as improved physical function, cognition, and quality of life in individuals with cognitive impairment, improved physical function in individuals with intellectual disability, improved physical function and physical, mental, and social domains of health-related quality of life for adults with multiple sclerosis, improved walk function, muscular strength and upper extremity function for individuals with spinal cord injury.6

Sport as a form of physical activity is a good example of a sector where development and innovation for a disability-inclusive environment are created.1 Paralympic Games or Paralympics is an international multi-sport event organized in parallel and in a similar way to the Olympics. It gives the opportunity for athletes with a range of disabilities, or para-athletes, to compete for their country at the elite level. There are classifications to determine if an athlete has an eligible impairment. Each sport has a different and specific classification, but overall, there are ten categories, with eight categories of physical impairment, as well as vision impairment and intellectual impairment.7 Meanwhile, athletes with hearing impairment will join in a different game called Deaflympics.8

The Paralympics is supposed to empower disabled people and acts as a catalyst to remove discrimination faced by disabled people. It is hoped to create more opportunities and greater accessibility for people with impairments. However, people criticized that Paralympians are not representative of the everyday disabled person. Only those that are eligible by the classification system are able to compete, and scholars criticized this process as disempowering. For many disabled people, this diminished the representative potential of the Paralympics, and they are unable to see role models to whom they can relate among the Paralympian ranks.9 Paralympics tries to give equal treatment to para-athletes, but there is still a large funding gap between the Olympics and the Paralympics. This is because the Olympics is more known compared to the Paralympics.10 Para-athletes also get less attention than non-disabled athletes, especially in the media.11 This is an ongoing struggle, but the Paralympics have now been getting more attention than before.

While disabled individuals can participate in competitive sports, not all are into it. Besides sports, exercise is also an important part of physical activity for health. In 2020, the WHO issued Guidelines for Physical Activity and Sedentary Behavior, and disabled individuals are also included here. Generally, the recommendation for individuals living with a disability is not too different from non-disabled individuals. Children and adolescents aged 5-17 years living with a disability should do at least an average of 60 minutes of moderate to vigorous intensity of physical activity across the week with a bigger emphasis on aerobic exercise. Vigorous intensity activities that strengthen muscle and bone should be incorporated at least three days a week. Meanwhile, adults aged 18 years and above living with a disability should do at least 150-300 minutes of moderate-intensity aerobic physical activity, or at least 75-150 minutes of vigorous aerobic physical activity, or an equivalent combination of both throughout a week. Muscle strengthening exercises should also be included at least two days a week. Older adults with a disability should also do varied multicomponent moderate or greater intensity of physical activity that emphasizes functional balance and strength training on three or more days a week to improve functional capacity and prevent falls.6

As stated above, there are many types of disabilities, and each type has its limitations. The main idea is to optimize physical activity regardless of the limitations and avoid sedentary behavior. Exercise should be personalized to each health condition, and consultation with health professionals in the field of sports and exercise medicine is crucial. Adjustments in the types of exercise, exercise tools, and methods should be made to accommodate each condition. Supervision by professionals may also be needed in certain cases of disability. People around these individuals should become a supportive, inclusive, and non-discriminative environment for these people so that no one gets left behind. In a systematic review study of physical activity in visually impaired individuals, physical activity intervention incorporating activities such as tai chi, yoga, and dance can have a positive impact, especially in physical measures such as mobility and balance.12 A study of 22 adults with Down syndrome showed that a 24-week basketball training program improved body composition and functional fitness.13 Another study with a different approach by using a web-based training program, showed improvement in health parameters in adults with intellectual disabilities.14 A pre-post exercise intervention study in 2022 with 244 people with a mobility disability for 12 weeks shows that an accessible community-based exercise program, with a transitional component supported by trained professionals, can increase strength and decrease pain. Although there was no significant change in body weight, BMI, or speed and distance in endurance testing, 76% of partici-

pants had intentions to continue exercising regularly by enrolling in monthly membership at the facility. This study shows that an accessible exercise facility and professional personnel may promote regular exercise adoption for individuals with a disability.15

While the recommendation may seem hard to implement, the studies above showed a possible approach and positive results. There are some important keys for daily practice that need to be understood. Start low and go slow. Start with lower intensity and shorter duration, with gradual progression and continuous adjustment. Doing some physical activity is better than none; even if it is not meeting the recommendation, it will still bring benefits to health. Limiting sedentary time and replacing it with more physical activity of any intensity is also recommended. Again, some are better than none. When the recommendation is met, the gradual increase may be done for additional health benefits by doing a greater amount of exercise, which is more than 300 minutes of moderate intensity, or more than 150 minutes of vigorous-intensity, or equivalent combination of both in a week.6 There are also some guidelines/recommendations of exercise established already for a specific type of disabilities that can also be implemented, including cerebral palsy16, multiple sclerosis17, etc.

In the end, physical activity will bring health benefits for all, even for disabled individuals, as long as the right exercise prescription and adjustment are made. Empowerment and social support are also important to encourage physical activity for people living with a disability. Government should take part by creating a disabled-friendly public environment. Public access to sports and exercise centers should also be provided because it is everyone's right. By working together, disability is not a barrier anymore. Disabled but still able.

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INA-RESPOND Newsletter

BUILDING YOUR VOCABULARY: LEARN, REMEMBER, AND USE NEW VOCABULARY IN ENGLISH

By: Dedy Hidayat

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The year-end holidays have arrived, and that means the new year is just around the corner. Many people have started preparing plans and resolutions for 2023. One often written as a new year's resolution is "I need to improve my skills." Maybe some of us are thinking of improving our English skills. Since vocabulary is the most important part of a language, let's look at one of the best ways to improve our vocabulary so that we become more proficient in English.

Many non-native English speakers desire a larger English vocabulary and the ability to correctly apply it in their daily lives, at work, and in school. However, English language learners frequently complain that they are unable to read or comprehend an article because there are too many unfamiliar words, and they lack the time to look them up in a dictionary. In addition, despite their best efforts, they are unable to remember the new words they have written down. Does that ring a bell? Sometimes we don't know how to acquire vocabulary properly, and as a result, we frequently lose track of the words we are attempting to recall. Here, we'll look at some easy, doable suggestions for expanding our English vocabulary and helping us to retain what we've learned.

Here's a fact about our brain. Our brain is very good at throwing away things it doesn't need. Vocabulary learning starts when we choose which words and phrases to learn or not to learn. This is where many English learners go wrong by making one of these mistakes: trying to learn too many words, trying to learn words you don't need, trying to learn big lists of words, or trying to learn words you don't know how to use. To avoid these mistakes, you must carefully choose the vocabulary you study. Most importantly, if we want to remember new words and new English vocabulary, we need to learn things that are useful and meaningful to us. Remember, our brains don't like boring; boring gets forgotten best.

Some situations include 1.) Your teacher keeps using a word you don't know. You hear it several times, but you can't work out what it means, then you hear other people use the same word. You're curious what is this word you keep hearing. 2.) You're reading an interesting article. You don't know every word, but you can understand the general ideas. In one paragraph, there's a word you don't know, making it difficult for you to understand the idea of the paragraph. You think the paragraph is important to the article, and you're interested to know what it means. 3.) You're on holiday in a country where English is widely

spoken. There's one kind of food you really want to order, but you don't know the word in English.

These are situations where a new word will have meaning to you. If you look up words in situations like these, you're more likely to remember them. Firstly, you remember them because these are words you need to use. Secondly, you'll remember them because these are all situations involving your feelings somehow. In the first example, you're curious about something. In the second, you're interested in the article you're reading. In the third, you're having fun on holiday. So, this is the first and most important point… learn words and phrases which are helpful and meaningful for you! This gives you the best chance to remember and use what you have learned.

Learning a new word could mean one of these two things: it could mean that we learn to understand it in our language, or it could mean that we learn to use the new word. Those two things are different. Let's talk about that. You might have heard of the terms "passive vocabulary" and "active vocabulary." Our passive vocabulary means words we can understand but don't use. Our active vocabulary means words we can use in our speech or writing. Normally, your passive vocabulary is larger than your active vocabulary in any language, including your native language. Many English learners say they can understand words but can't use them to some extent. This is normal. However, what can you do if you want to develop your active vocabulary in English? There are two important points here. First, you must use different techniques to build passive or active vocabulary. Many English learners have problems building their active vocabularies because the methods they use to learn vocabulary only increase their passive vocabulary. Secondly, creating an active vocabulary takes a lot more time and work. To build your active vocabulary, you must spend much more time studying and practicing each word or phrase you wish to learn.

Let's look at the first point. Here are some excellent techniques for building passive vocabulary: looking up a translation of a word in your language, guessing the meaning of a word from the context, looking up a definition of a word in a monolingual dictionary, finding example sentences in reading and listening. So, if your vocabulary learning consists of translating everything into your language, don't be surprised if you can't use what you've learned. This is an OK technique for building your passive vocabulary, but it won't help you to use the words and phrases you study.

What about building an active vocabulary? Here are some excellent techniques for building your active vocabulary: writing stories or other things personal to you, using a new word several times and in several different conversations, and making example sentences that are personal to you. You can see that these things are not necessarily complicated, but they do require more effort. It's much harder to write an example sentence that is personal to you than it is to read someone else's example sentence. It's much harder to write a story that means something to you than to read something that someone else wrote. But if you want to build your active vocabulary, this is how. Most English learners are more interested in developing their active vocabulary, so we will focus on specific techniques you can use to build your active vocabulary in English.

Let's start with a very important and powerful idea. Here's a question… what is vocabulary? Did you say "words"? Many people think that vocabulary equals words. Of course, words are part of the vocabulary, but they're only a part. Vocabulary also includes collocations, phrases, and even full sentences. Even when you're learning words, you rarely need single words. When you're speaking, you need to combine the words into phrases and sentences if you want to use them, so it makes sense to learn vocabulary in the same way. Learn phrase combinations and sentences because this is what you need when you're speaking and writing. Let's do an example. Imagine that you see the word "challenge," and you want to know what it means, so you look it up and find the meaning. Next, your goal is to write five sentences using the word "challenge." Each sentence should be different, and each sentence should mean something to you. Try to write things that relate to your life, feelings, and thoughts. You can and should also try to use different word forms like the adjective "challenging." It would help if you also research other examples before you write yours. Look for common collo-

cations - word combinations with the word you want to learn. For instance, what additives are commonly used with the word "challenge"? Think about it. What phrases or sentences could you write with this word?

I'll give you some examples but remember that you should make your examples because they should be personal to you. Here are five possible sentences:

1. "I'm bored at work. I need a new challenge".
2. "Working on that project is fun, but it can be very challenging."
3. "Completing the assignment was one of the biggest challenges I've ever faced."
4. "I set myself a challenge last year to learn Mandarin to a native equivalent level."
5. "My sister is a really determined person. She's not someone who runs away from a challenge".

I'll repeat it because it's the most important point here... whatever you write should be personal to you. Don't write a sentence about your sister if you don't have a sister. Don't say something about your sister which isn't true. Make it true and make it personal. If it's unique to you, you'll remember it. If it isn't, you'll forget it.

At this point, there's one more important thing. It would be best if you asked a teacher, a native speaker, or a friend who is very good at English to check the sentences. You want to make sure you're learning your new vocabulary correctly, and you need feedback to do that.

If you're trying to learn a lot of vocabulary, reviewing what you've learned regularly is also important. The regular review helps you keep your vocabulary fresh in your mind, which will help you remember the words and phrases you need when speaking or writing in English. Let's look at the most effective ways to review your vocabulary. If you have a lot of English vocabulary to reveal and remember, there are several free tools and apps which can make this easy. You need a digital flashcard app. These apps are designed to help you memorize and review large amounts of information. Two of the most popular are Anki and Quizlet. Quizlet is a little easier to use, while Anki is more powerful, has more options, and is more complex. Try both or find another program and see what works for you.

All these programs work in the same way. They allow you to set questions for yourself. You can create a card with a question and an answer. You can write whatever you want for the question and the answer. After you see a question and the answer, you decide if the question was easy or difficult for you. If the question is easy, the app will ask you again after a more extended period. If the question is difficult, the app will ask you the same question again after a shorter period, maybe even on the same day. This is very effective because it allows you to focus more on the things you don't know and doesn't waste time reviewing things you already know well. You can often download packs of questions that others have made, but you should make your own questions using your personalized example sentences.

You can review vocabulary when you have nothing else to do, for example, on the subway or during your lunch break. Use your app and review vocabulary daily, but don't overload yourself. Limit the number of new questions or cards you see each day. Five new questions per day is a good target. Again this takes quite a lot of work, time, and effort, but it also works.

Let's review the steps you need to take:

- Choose words that are useful and meaningful to you personally. Don't learn extensive lists of words, and don't learn words that you won't use.
- Decide if you only want to understand the word or if you want to use it. Use different vocabulary learning techniques depending on what you want.
- Get feedback on your example sentences from a teacher or friend to ensure you're using your new vocabulary correctly.
- Add your example sentences to a digital flashcard app like Quizlet or Anki. Make collections of different difficulties so that some questions are easier and some are harder.
- Use your digital flashcard app daily or as often as possible.

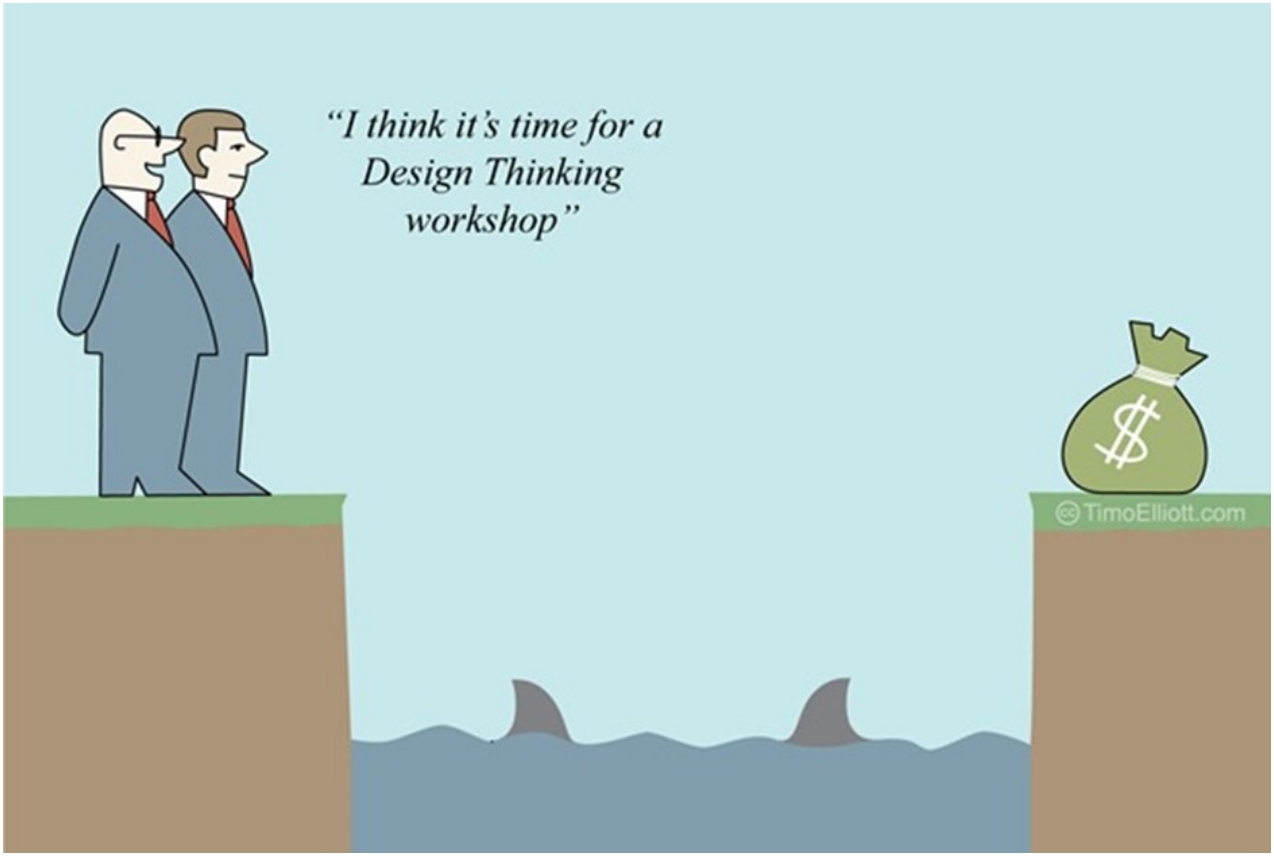
Follow these steps, and your English vocabulary will increase. You'll remember new words in English, and you'll be able to use the new English words you learn!

INA-RESPOND Newsletter

COMIC CORNER

DESIGN THINKING: DO WE HAVE IT IN OUR TOOLBOX?

By: Aly Diana



Source: https://timoelliott.com/blog/2014/02/cartoon-design-thinking.html

Design thinking is a collaborative method of inquiry that produces innovative, team-generated solutions to complex scenarios or wicked problems that are extraordinarily difficult to solve. It is powered by team-based creativity that adaptively responds to a need of the users for creating new approaches and products in an innovative and practically applicable way. The need for design thinking in healthcare is steadily increasing as the healthcare system and its care environments continue to grow in complexity. Having "Design Thinking" in our Toolbox will considerably improve our strategy for solving health issues.

One of the famous frameworks of Design Thinking follows five iterative steps: 1) Empathize – understand the user experience and perspective; 2) Define – frame the problem, the constraints, and the desired outcome; 3) Ideate – generate as many possible solutions that could address the problem; 4) Prototype – potential solutions are crafted and made tangible for testing; and 5) Test – solutions are evaluated for how well they address the problem and revised. Empathize can be considered the foundation of a human-centered design process as we need to understand the people for whom we are designing. Observe (view users and their behavior in the

context of their lives); engage (interact with and interview users through both scheduled and short 'intercept' encounters); and immerse (experience what our user experiences) are "keywords" to create products that will be useful for our users.

As suggested by Tim Brown, one of the parents of Design Thinking, a Design Thinker's Personality Profile should include empathy, integrative thinking, optimism, experimentalism, and collaboration. Empathy. They can imagine the world from multiple perspectives—those of colleagues, clients, end users, and customers (current and prospective). By taking a "people first" approach, design thinkers can imagine solutions that are inherently desirable and meet explicit or latent needs. Great design thinkers observe the world in minute detail. They notice things others do not and use their insights to inspire innovation. Integrative thinking. They not only rely on analytical processes (those that produce either/or choices) but also exhibit the ability to see all of the salient—and sometimes contradictory— aspects of a confounding problem and create novel solutions that go beyond and dramatically improve on existing alternatives. Optimism. They assume that no matter how challenging the constraints of a given problem, at least one potential solution is better than the existing alternatives. Experimentalism. Significant innovations don't come from incremental tweaks. Design thinkers pose questions and explore constraints in creative ways that proceed in entirely new directions. Collaboration. The increasing complexity of products, services, and experiences has replaced the myth of the lone creative genius with the reality of the enthusiastic interdisciplinary collaborator. The best design thinkers don't simply work alongside other disciplines; many of them have significant experience in more than one.

Some authors offer tips to stimulate creative problem-solving with design thinking which include: 1) Gather resources, examples, and materials to build your design thinking knowledge and capabilities; 2) Commit to design-thinking mindsets: optimism, embrace ambiguity, iterate iterate iterate, make it, empathy, creative confidence, learn of failure; 3) Start with a warm-up; 4) Connect with the user and be observant; 5) Question whether you are solving the right problem and do not be afraid to reframe it: 6) Seek inspiration from other disciplines, especially those that seem disconnected; 7) Prototyping and collect feedback for improvements; 8) Disrupt patterned thinking by separating thought processes; 9) Utilize different mediums to tell stories and visualize ideas; 10) Promote effective teamwork by establishing trust and psychological safety, while normalizing failure; 11) Integrate play and rest into the process; and 12) Model and teach others about design thinking.

These are only the surface of the concepts of Design Thinking; hopefully, it would spark our curiosity to learn more and then exercise the concepts.

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