GUIDEBOOK

ON

EFFECTIVE MEDICATION INSTRUCTION DELIVERY TO

DEAF AND HARD-OF HEARING PATIENTS

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PREFACE

According to the World Health Organization (WHO) in 2017, over 5 percent of the world's population has disabling hearing loss. This percentage translates to a massive 466 million people composed of 432 million adults and 34 million children. In the next 32 years or by the year 2050, it is estimated that over 900 million people will be affected by hearing loss. It means that one in ten individuals will be struggling to overcome different barriers of communication. One of the identified concerns by the members of Deaf community related to access to healthcare is the difficulty in understanding medication related instructions. Communication barriers between Deaf patient and the healthcare provider might affect the sufficiency and accuracy of information being provided positing serious detrimental effect on individual's health if not properly recognized and addressed.

In the Philippines, the law provides protection to the rights of disabled persons and ensures their integration into the mainstream of society. The Republic Act No. 9442 otherwise known as the "Magna Carta for Disabled Persons" amended the RA 7277. This act states all the rights and privileges of disabled persons. Disabled persons are those who are suffering from restriction or different abilities, as a result of a mental, physical or sensory impairment, to perform an activity in the manner or within the range considered normal for a human being. Deaf people are among the members of the group of PWDs and are therefore part of the concern of everyone not just the government in fostering their capacity to attain a more meaningful, productive and satisfying life. It is clearly stated in the act specifically at section 2b that PWDs have the same rights as other people to take

their proper place in society. This must be the concern of everyone — the family, community and all government and non-governmental organizations. Chapter 3 of RA 7277 discusses the national health program for PWDs. Section 20 on health services stated that *"state shall protect and promote the right to health of disabled persons and shall adopt an integrated and comprehensive approach to their health development which shall make essential health services available to them at affordable cost."* As such, healthcare providers like physicians and pharmacists are part of the team that must ascertain the delivery of appropriate medical care to everyone including the PWDs.

With the recent Senate approval of the 3rd and final reading of House Bill (HB) 7503 otherwise known as the Filipino Sign Language (FSL) Bill, Filipino deaf can now exercise the right to expression and opinion by requiring the use of FSL in schools, broadcast media, and workplaces when communicating with Deaf. Under Senate Bill number 145, FSL the official medium of instruction and communication will be used in all government transactions for the deaf community. Furthermore, the different sectors of education such as the Department of Education (DepEd), the Commission on Higher and Technical Education (CHED), the Technical Educational Education and Skills Development Authority (TESDA) are tasked to use FSL as the medium of instruction in deaf education. Furthermore, the bill also states that the health system including hospitals and all health facilities shall ensure access of the Filipino deaf to health services, including the free provision of FSL interpreters and accessible materials upon the request of deaf patients or individuals who have deaf family members.

This instructional manual was developed to help Pharmacists and other healthcare providers in providing medication related instructions to Deaf and hard-of-hearing patients. Specifically, this manual present topic in understanding deafness, addressing myths and misconceptions about Deaf community, mitigating communication barriers, and the various means of communicating medication related instructions with Deaf and hard-of-hearing (HOH) patients. Complementary to this manual is an Instructional Sign Language video presenting the basic signs used in conversation, timing and frequency of drug administration, common side effects of drugs, and other special instructions during patient medication counseling.

The objective of having materials that can help mitigate communication barriers between healthcare providers and Deaf patients and improve patient care as well as the health literacy of Deaf and HOH patients was greatly inspired by people who selflessly share their time and resources by helping the Deaf community. Completion of this instructional manual will not be possible without the contribution of individuals both from the academe and members of various Deaf organizations. Hence, I would like to express my sincere gratitude to the people who have shared their time, expertise, and for assisting me in the effort of bringing this project into completion.

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TABLE OF CONTENTS

OBJECTIVES

Presented in this guidebook are topics that will enable learners to gain knowledge and understanding about the deaf world. It discusses the different communication barriers that hinders effective delivery of medication related instructions to Deaf and HOH patients. It also aims to address the myths and misconceptions about deaf people and also offers various strategies in communicating drug related information. Infographics of common dosage formulations, timing and frequency of drug administration, and common side effects associated with drugs were developed to facilitate effective patient counseling services to Deaf and HOH patients (Appendix A-F). Adjunct to this guidebook is a Filipino Sign Language instructional video produced to demonstrate common conversational signs. The instructional video aims to help pharmacists and other healthcare providers in learning common Filipino sign language and utilize appropriate signs in providing important medication related instructions to Deaf and HOH patients (Appendix J).

THE FILIPINO DEAF CULTURE: AN OVERVIEW

Culture is a socially transmitted behavior patterns, arts, beliefs, institutions, and all other products of human works and thought (Appiah, 1993). It has systems of meaning associated with arts, language, values and belief. Deaf Culture appears to be an integration of all these perspectives including social organizations, norms, as well as cultural objects (Filipino Deaf Culture for FSL2, SDEAS, DLS-CSD, 2018). The Deaf community in the country has its unique way of living. There are behavioral rules, communication methodologies, individual and collective identities, and social norms being observed by the members. The *Filipino Sign Language (FSL)* having its own grammar, syntax, and morphology is the national deaf sign language in the Philippines. This visual language has linguistic hierarchy structure based on manual signal adjunct by additional linguistic information from non-manual signals of face and body. FSL embodies the cultural identity of the Filipino community signers and reflects rich regional diversity in its vocabulary bearing historical imprint of heavy language pressure from contact with American Sign Language since the start of the century as well as with Manually Coded English since the 1970s (Martinez, 2012). There are also other language options that are used by Filipino Deaf, although, not as extensively used as the FSL. It includes Manually Coded English (MCE) like *Signing Exact English (SEE)* and *Listening and Spoken Language (LSL)*. Manual Coded English otherwise known as "Signed English", are group of systems that uses hand shapes and signs to express sign through English grammatical structures. Signing Exact English represents literal English making everything that is not heard visible. Developed

in 1972 by Gerilee Gustason, SEE uses ASL signs and additional items including pronouns, plurals, possession, and the verb "to be". ASL is a language with its own grammar including gestures and facial expressions while SEE is not a language. It is a way to sign the English language. A fundamental difference between the two methods which also becomes a source of controversy (Hoffman, 2008). The other method called Listening and Spoken Language is most often used to describe the communication mode that focuses on the development of spoken language without the use of sign language. It is based on the premise that when deaf and HOH children are identified early, provided with appropriate hearing technology, and learn to listen through LSL techniques, they learn spoken language in a similar way to hearing person. This approach is developmental and follows milestones for skills at ages when children are most primed to learn (Gardiner-Walsh & Lenihan, 2017).

Filipino Deaf Culture reflects much about the Filipino values in general such as close family ties, respect for elders, loyal friendships, marriage customs, traditions and mutual support to each other. Deaf people are very sociable. Contrary to other hearing people's belief that deaf people are shy and timid, they are actually very fond of socializing. They like to join in parties and other occasions to celebrate and even spend longer hours chatting with friends and family members compared to hearing people. They do not want the feeling of being left behind or any form of discrimination. A negative emotion that most deaf people experience because of their disability.

To show their support with the deaf community and participation in various endeavors of Persons with Disability (PWD), there are various active Deaf

Organizations in country. It is not also surprising to see deaf people being a member of multiple organizations. Most organizations are not exclusive for deaf and HOH people. Organizations are established to be inclusive for both deaf and hearing people with mutual values and advocacies. They come together and the organizations serve as venue for them to find support, socialization, and information.

Deaf etiquette in communication is also quite different with the hearing world. It can be described as direct and expressive. Eye contact and expressions are two very important elements is deaf communication. This aspect of communication together with other means of establishing effective communication with deaf people are discussed in detail in the succeeding topics in this guidebook.

UNDERSTANDING THE NATURE OF DEAFNESS

What is Deafness?

WHO defines ***deafness*** as the complete loss of the ability to hear from one or both ears; this is profound hearing impairment, 81 dB or greater hearing threshold, averaged at frequencies 0.5, 1, 2, 4 kHz. While ***hearing impairment*** means complete or partial loss of the ability to hear from one or both ears; this is mild or worse hearing impairment, 26 dB or greater hearing threshold, averaged at frequencies 0.5, 1, 2, 4 kHz. ***Disabling hearing impairment*** on the other hand means moderate or worse hearing impairment in the better ear; that is the permanent unaided hearing threshold level for the better ear of 41 or 31 dB or greater in age over 14 or under 15 years respectively, averaged at frequencies 0.5, 1, 2, 4 kHz.

Hard-of-hearing (HOH) is the term used by audiologist to identify those individuals who exhibit a slight to moderate hearing loss (Scheetz, 2012). HOH individual may benefit from the use different amplification forms such as hearing aids and assistive listening devices. Although some HOH people are able to access the mainstream of the hearing society, other individuals who are identified with the same condition find in extremely challenging to interact with hearing people. HOH is a broad term and encompasses a wide range of limitations and abilities depending on the hearing loss the individual possess.

Etiology of Hearing Loss

Hearing loss can be categorized according to the age of onset and the anatomical location of the dysfunction. ***Congenital losses*** are those dysfunctions that are present at birth. ***Acquired losses*** are those that occurred after birth. There are also different types of hearing loss based on the area of the ear where the impairment occurs. They are ***conductive***, ***sensorineural***, *and* ***mixed hearing loss***. In **conductive hearing loss**, vibrations are not passing through from the outer ear and the inner ear, specially the cochlea. Causes of this type of hearing loss are "obstructions" like infections of the ear canal or middle ear resulting in fluid or pus buildup, perforation or scarring of the eardrum, excessive earwax buildup, glue ear, abnormal bone growth, tumor, and ossicles malfunction. One of the most leading cause of this type of hearing loss is otitis media. Prescribed treatment for conductive hearing loss may be medical or surgical. Antibiotic can be prescribed for those who have otitis media. While removal of the obstruction for those who have ear canal blockade. Compared with conductive hearing loss, **sensorineural hearing loss** may occur as a result of congenital deformities, ear infection, or head trauma. Other causes include aging, excessive noise exposure, viral infections such as measles, mumps, shingles, ototoxic drugs, meningitis, diabetes, and stroke. The dysfunction is located in the cochlea, or along the nerve pathway from the inner ear to the brainstem. This type of hearing losses cannot benefit from prescription drugs and by medical interventions. The condition is typically permanent and progressive in some cases. **Mixed hearing loss** is a combination of the two type of deafness mentioned.

Grades of Hearing Impairment

There are four levels of deafness or hearing impairment:

A. Slight/Mild Deafness

A person with this level of hearing loss find it hard to understand soft speech, speech from a distance, or speech against a lot of background noises. Person can only detect sounds between 26 to 40 decibels (dB).

B. Moderate Deafness

A person will have trouble hearing regular speech even at close distances. During conversation, hearing alone will be very difficult without a hearing aid. The person can only detect sounds between 41 to 60dB.

C. Severe Deafness

Only very loud speech or sounds (between 61-80dB) in the environment like fire truck siren or a door slamming can be heard by person in this level of deafness. A severely deaf person must either use sign language or lip-reading in order to communicate.

D. Profound Deafness

A person with profound deafness cannot hear anything at all. Loud sounds are perceived as vibrations. Communications are done with use of sign language, lip-reading, reading and writing.

Deafness and Speech

Hearing loss can affect the ability of a person to speak. However, many deaf people can speak well and are not physically mute. The ability depends on when the hearing loss occurred. They maybe **prelingually or postlingually** deaf. Educational background also plays a role in their speech ability.

Pre-lingual deafness

An individual born with congenital deformity or have lost hearing during the period of infancy resulting to the inability to fully or partially hear before learning how to utter or understand speech is said to be prelingually deaf. Children with prelingual deafness are said to acquire oral language if given cochlear implants before the age of 4. Majority of the cases of prelingual deafs are born with hearing parents and families who did not know sign language. This situation might contribute to the delay in language acquisition of the child since oral language and the use of social cues are very closely related. Prelingually deaf children are also at risk of social isolation. Parents and family members of children with hearing loss should also learn sign language to be able to interact and communicate with them. Sending children to attend a special needs school with other children who have the same condition can help mitigate social interaction challenges.

Post-lingual deafness

Post-lingually deaf are those who have acquired spoken language before

their hearing was diminished. Various reasons such as side effect of medication, trauma, infection, or disease may have caused it. Family members and other people who usually interact with them may have noticed the problem before they acknowledged the disability. People with this type of hearing loss may have used hearing aids, received cochlear implant, or learned sign language and lip-reading for communication. As with pre-lingual deafness, isolation is the common concern for people with post-lingual deafness. This can sometimes lead to depression and loneliness not only by the person experiencing hearing loss but to his/her family members, loved ones, and friends who also need to adapt to the condition.

REVIEW QUESTIONS NUMBER 1

TRUE OR FALSE

1. Filipino Sign Language is the national deaf sign language in the Philippines.
2. Deaf people are generally shy and timid.
3. Deaf organizations are exclusive for people who are deaf and hard of hearing.
4. Hearing loss cannot affect the ability of a person to speak.
5. Acquired losses are those that occurred after birth.
6. One the most leading cause of conductive hearing loss is otitis media.
7. Sensorineural hearing loss can benefit from prescription drugs and by medical interventions.
8. A person with moderate deafness have trouble hearing regular speech even at close distances.
9. A person with profound deafness cannot hear anything at all.
10. An individual who have lost hearing during the period of infancy resulting to the inability to fully or partially hear before learning how to utter or understand speech is said to be postlingually deaf.

MYTH & MISCONCEPTIONS ABOUT DEAF PEOPLE

The lack of interaction among hearing and Deaf people have led to the skewed perception of the Deaf individual and the community. These perceptions are formed from what hearing people observe, read, or heard from other people outside the Deaf community. Deafness is considered a low-incidence disability. However, it is common for an adult hearing person to have encountered a culturally Deaf person at sometime in his life. Series of misconceptions and misunderstanding on Deaf people have been shared, believed and spread leading to the breakdown of communication between hearing and Deaf people.

Presented here are the common inaccurate information associated with Deaf people. The goal is to allay the myths, address the misconceptions, and replace them with more accurate information.

MYTH: Deaf people cannot hear anything

There are various types and severity of hearing loss that dictates the extent of the disability to hear. Hearing loss may vary from mild to profound. The person with mild grade of hearing loss usually can hear sounds louder than 40 dB but may have trouble hearing sounds below 40 dB and find it hard to understand speech especially with a lot of background noises. A person with profound deafness on the other end cannot hear anything at all. Loud sounds are perceived as vibrations. Communications are done with use of sign language, lip-reading, reading and writing.

MYTH: Deaf people cannot talk

Many Deaf people have the ability to speak and are not physically mute. They do not want to be labeled "deaf-mute" and "deaf and dumb". Hearing person often associate speech with language, so without it, person may surmise that Deaf people lack the ability to develop thought process, language and use oral expressions. This notion is far from being accurate. People have the capability to produce sounds unless the problem or abnormality occurs in the larynx, vocal cords, and other structure involve in articulations. It was also mentioned in the earlier part of this manual that the ability of Deaf people to speak depend on when the hearing loss occurred. They maybe prelingually or postlingually deaf. Post-lingually deaf have acquired spoken language before their hearing diminished. Therefore, some of them may be able to communicate with the use of spoken language. However, Deaf of this type may just choose not to talk because of the difficulty regulating the volume, pitch, and sound of their voices. Deaf people also creates natural sound when they communicate using sign particularly when emphasizing a point or expressing intense emotions such as excitement, happiness, and disappointment.

MYTH: Deaf People are not as intelligent as their hearing counterpart

It has long been established that the intellectual functioning abilities of deaf people were inferior to that of the hearing people. A falsehood that persisted in the twentieth century through the biased research of many psychologist (Pollard, 2005). A study of Vernon (1965) entitled *Fifty Years of Research on the Intelligence of Deaf and Hard-of-Hearing Children: A Review of Literature and*

Discussion of Implications published in Oxford Journal of Deaf Studies in 2005 presented the major findings of 50 years' research on the comparative studies of the intelligence level of the Deaf and Hard-of-hearing people. An important data revealing the truth on the unfortunate common misconception of hearing persons that deafness is associated with the lack if intelligence. It succinctly spotlights biases in IQ assessment of deaf children. These resulted from improper testing methods, research participant sampling, and even experience level of the evaluators themselves. The paper had enormous impact not only on future researches regarding cognition and deaf people but also on the clinical practice.

Communication skills is often used by hearing people as a baseline in determining intelligence. Word choice, grammar and presentation are often used by hearing population to ascertain who has high intelligence (Sheetz, 2004). The first study contradicting the series of findings of below-average intelligence among the deaf was that of Drever and Collins (1928). This study included 200 Deaf and 200 hearing children. In the published result of their performance test, it revealed that when language was not a factor, deaf and hearing children were approximately equal in mental ability. Further researches also indicated that individuals who are deaf perform at similar levels of intellectual functioning as their hearing counterpart. It was concluded in the study conducted by Braden (1985) that the average IQ score on the Wechsler Intelligence Scale for Children-Revised (WISC-R) was 96.89, only very slightly lower than the hearing children's norm of 100. In addition, Smiley, D., Thelin. J., Lance. D., & Muenchen, R. (2009) presented their study on the *Problem-Solving Ability in Elementary School-Aged*

Children with Hearing Impairment revealing that there were no significant differences between the HI Group and NH Group in the ability to solve mathematical equations involving the use of language and mathematical computation. Moreover, it was also found that problem-solving ability was related to language ability, but not to hearing ability in the children with hearing impairment.

MYTH: It is OK or acceptable for Deaf people to be defined as "hearing impaired"

The term "hearing impaired" is actually offensive to most deafs and hard-of hearing individuals because this may imply that the person is deficient, flawed, or imperfect. Their hearing may not be perfect, but they prefer not to labeled as "impaired". Deaf and hard-of-hearing are considered to be more positive to them.

MYTH: Most Deaf people can communicate in Sign Language.

Some deaf people were not born deaf, they have already acquired spoken language before they have lost their hearing from various reasons such as illness, trauma, or side effect of medication. They are said to be post-lingually deaf and some of them prefer to speak and/or lipread when communicating. Others, specially those who were born deaf learn sign language in school or thought by their family members who know sign language. Hence they prefer to use signs in communicating.

MYTH: All Deaf people can speeachread/lipread

Speech reading or lipreading is a skill that is difficult to acquire because 40-60 percent of words look similar on lips when spoken. In addition to this, speech sounds encountered in English are not visible in the lips. Sounds of *a, e, g, h, i,* and *k* remains hidden when vocalized. Even hearing people may have trouble deciphering the correct word though lipreading alone. Hard-of-hearing people can also read lips but it requires intense concentration to understand the word being said and will eventually become a tiring process. Deaf people most especially pre-lingual deaf may not be able to discern the words being said as they have not heard the word and understand its meaning.

There are also several factors that can influence one's ability to fully grasp speakers message when relying on speechreading (Sheetz, 2012), these include the following:

1. **Placement of speaker**. Ideal situations require that the speaker directly face the Deaf person and must refrain from turning his head from side to side while speaking.

2. **Lighting.** Conversations should be done in a well lit place. The speaker must avoid standing with their back against the light source to prevent eye strain to the lip reader and who is trying to focus of mouth movement and facial expressions.

3. **Obstructions while speaking**. Any obstruction in the mouth of the speaker like hands, pens, pencil, cigarette, etc. can interfere with Deaf

person's ability to comprehend the message through lipreading. Thus, must be avoided.

4. **Volume, inflection, and prosody**. Tone, stress, and rhythm should be delivered by the speaker with appropriate volume for a given situation. Exaggerated facial expressions and shouting can distort the face and minimize effectiveness of message comprehension. Speakers can be instrumental in assisting the Deaf person in understanding the message by paying attention to pace, phrasing, and choice of words. Attempting to use simpler words or rephrasing ambiguous sentences for the Deaf person is also more effective.

Speechreading for people who cannot hear sounds clearly and distinguish one word from another are faced with daily struggle to understand what hearing people were saying. To overcome the breakdown of communication, one should also examine the ability of the Deaf person to lipread.

MYTH: DEAF PEOPLE CANNOT DRIVE

Hearing people rely heavily on both vision and hearing to drive. They incorporate the use of their eyes and ears to be alerted to their surroundings when driving. Sounds of sirens, honking of horns, and screeching tires serves as important signals to hearing people. These are the reasons why most hearing people assume that Deaf and HOH people have impaired driving abilities. It is rather surprising for the members of general public to discover that there are Deaf people who can drive and maintain a safe driving record. Section 26 of Republic

Act No. 7277, Providing for the Rehabilitation, Self-development and Self-reliance of Disabled Person and their Integration states that "*disabled persons shall be allowed to drive motor vehicles, subject to the rules and regulations issued by the Land Transportation Office (LTO) pertinent to the nature of their disability and the appropriate adaptations or modifications made on such vehicles.*" According to the National Council for the Welfare of Disabled Persons (NCWDP), there were more than 3,500 disabled people, including visually and hearing-impaired persons in the country have licenses to drive motor vehicles (Ronda, 2002).

Without being able to hear audible signals, Deaf people use their eyes as primary information resource. Driving is primarily a visual activity, making Deaf drivers able to effectively operate vehicles. Research suggests that being deaf enhances the peripheral vision of individuals. Furthermore, some Deaf also use electronic devices in their cars that alert them, using a lighted panel, to sounds coming from outside the vehicle. They also pay attention to the visual cues on the road and flashing of lights from other drivers.

MYTH: HEARING AIDS ENABLE DEAF PEOPLE TO HEAR

Hearing aids serve the purpose of sound amplification. Sounds and speech reach the range of individual's hearing and become loud enough to heard. The type of hearing loss will determine the extend of benefit a hearing aid can provide to Deaf or HOH person. Hearing aids cannot replace a damage in the inner ear nerve fibers. Such in the case of people with sensorineural hearing loss. Therefore, even with the assistance of hearing aid, amplified speech may still be distorted and will

never be completely clear and understandable. On the other hand, if the hearing loss is mild, amplification brought about by hearing aid may enhance the level of hearing and permit excellent clarity of spoken language.

REVIEW QUESTIONS NUMBER 2

TRUE OR FALSE

1. Many deaf people have the ability to speak and are not physically mute.
2. When language is not a factor, deaf and hearing individuals have approximately equal mental ability.
3. It is not offensive for most deaf people to be regarded as "hearing impaired".
4. Prelingually deaf people prefer lipreading when communicating.
5. Standing against the light source must be avoided when communicating with deaf person.
6. Use of simpler words and rephrasing ambiguous sentences are make communication more effective.
7. Deaf people are not allowed to drive.
8. Amplification brought about by hearing aid may enhance the level of hearing of person with profound hearing loss.

LEARNING THE BASICS OF DEAF COMMUNICATION

Communication Barriers between Pharmacist and Deaf Patients

It is a vital task for pharmacists to provide proper counseling to patients whenever medication is dispensed. Relaying medication related instructions is challenging because of the different barriers of communication. It is therefore important for pharmacists to recognize these barriers so that he/she can utilize various methods of delivering the instructions to patients. Barriers to communication can be *personal or pharmacist-centered, patient-centered, and environmental* (Ellis & Sherman, 2013).

1. **Pharmacist-centered barrier**. Include poor body positioning and distracting body movements. This might lead a patient to feel that the pharmacist is not being attentive. To resolve this, pharmacist should stay within 1 and 1/2 to 4 feet from the patient who is being counseled. Not too far nor too close to invade "personal space" of the patient. Any movement that can send an antagonistic message to the patient such as folding arms across the chest or tapping a foot should also be avoided.

2. **Patient-centered barrier**. Include age, language, and literacy level of patients. Special means of providing counseling to patients with visual, hearing, and other physical challenges should also be considered.

3. **Environmental barrier**. The ergonomic design of the patient counseling area can be a source of an environmental barrier. The counseling area requires regular reappraisal in order to determine whether it is meeting the needs of patients. Accessibility, proximity to the crowded area, and privacy concerns should be considered in assigning space dedicated for patient counseling services.

Providing medication related instructions to patients with profound hearing loss is even more challenging considering the above mentioned barriers. In the case of deaf and hard-of-hearing patients wherein spoken words are very hard to discern, healthcare providers' must have the ability to utilize various tools to mitigate the identified communication barriers in giving medication instructions.

Patient Counseling Services Provided by Pharmacists

Originally, patient counseling standards were set in the Omnibus Budget Reconciliation Act of 1990 (OBRA 1990) and the Indian Health Service Model. A law that mandates pharmacists to offer patient counseling on their prescription medications. Different states have adopted the rules and made the counseling applicable to all other patients not only on prescribed medications but also to over-the-counter (OTC) drugs as well.

If the patient agreed to be counselled on the medications being dispensed, the pharmacist discuss the following information and other related instructions:

1. name of medication
2. intended use and expected action
3. route of administration, dosage form, and dosage

4. administration schedule
5. proper storage
6. common adverse effects that may be encountered
7. techniques for self-monitoring and drug therapy
8. prescription refill information

The above mentioned information are generally provided by the pharmacist in a one-way, provider-centered manner. The entire process is time consuming both for the patient and pharmacist. One way to mitigate the concern in the length of time spent per patient requiring counseling is to determine the patient's baseline understanding on the medication. These are the information that the patient already knows about the medication. The Indian Health Service Model recommends "three prime questions" to streamline the process:

1. What did your prescriber tell you this medication is for?
2. How did your prescriber tell you to take the medication?
3. What did your prescriber tell you to expect?

These questions can stimulate discussion regarding the purpose of the medication, directions for use, all aspects of dosing and administering, and the desired outcomes of the therapy. The pharmacist can then supplement the information required by the patient to attain thorough understanding of the drug being dispensed.

Communicating Drug Related Information to Deaf and HOH Patients

There are various methods that healthcare providers can employ to deliver important medication related instructions to Deaf and Hard-of-hearing patients. Very often, healthcare providers rely on the hearing companions of Deaf patients like family members or volunteers from Deaf Organizations serving as the interpreter during the counseling sessions. However, there are instances particularly on adult Deaf and HOH patients wherein they are not accompanied by a hearing family member or an interpreter. Healthcare provider is then compelled by his/her responsibility to deliver correct information despite being faced with different barriers of communication.

Deaf people communicate with hearing people in different ways. Several factors might influence their preferred means of communicating such as the type and level of deafness, language skills, educational level, speech abilities, and even personality. Some Deaf use combination of speechreading and sign language. While others depend on writing, finger spelling, body language and facial expressions. Healthcare providers can also utilize combination of these techniques in conveying information to Deaf patients. Patient counseling is usually being done in a one-to-one situation.

Here are some of the tips introduced by Rochester National Technical Institute for the Deaf, (2012) when communicating with Deaf person in one-to-one situation:

1. **Get the Deaf person's attention**. There are several ways to do this. A gentle tap on the shoulder can get the attention. If beyond reach, a wave

in the air until eye contact is established. Switching lights on and off can also catch attention.

2. **Key the Deaf person into the topic of discussion.** They must be made aware of the subject matter to be discussed in order to pick up words that can help them follow the conversation. This is particular important for Deaf people who do speechreading.
3. **Speak slowly and clearly, do not shout, exaggerate, or over pronounce.** Exaggeration can distort lip movements making speech reading more difficult. Try to enunciate each word without force or tension. Simpler words in shorter sentences are easier to understand than long and ambiguous ones.
4. **Look directly at the deaf person when speaking.** Avoid turning away from the receiver or doing other things like operating computers, gadgets, or pulling a file while speaking. This can distract the person trying to understand the message being conveyed. Maintain eye contact with the deaf person. It conveys the feeling of direct communication. Even with the presence on an interpreter, continue to speak directly to the deaf person. He/she will turn to the interpreter as needed.
5. **Repeat, then try to rephrase a thought if there is a problem being understood rather than repeating the same words again.** Don't hesitate to communicate by writing if necessary because there are some lip movements combinations that are difficult to speechread. Getting the message across is more important than the medium used.

6. **Use appropriate non verbal cues such as postural, gestural, and facial expression to supplement communication.** Gestures can perform many functions in communication such as regulating the flow and rhythm of interaction, maintains attention, add emphasis, and characterize content. A lively speaker always is more interesting to watch.
7. **Use open-ended questions that must be answered by more than 'yes' or 'no.'** Refrain from assuming that Deaf person have understood the message entirely because he/she nodded. Ensure that accurate information has been conveyed by getting a coherent response to an open-ended question.

Other Tips in Communicating with Deaf People

Below are more tips for communicating with persons who are Deaf or Hard of Hearing (Sheetz, 2004).

1. Ask the Deaf or HOH person what will be of help in the communication process.
2. Select a quite environment for communicating exchanges.
3. Remain within 3 to 5 feet from the person.
4. When using visual aids, give the person the time to look at the aid before attempting to speech read.
5. If more than one person is engaged in the conversation, identify or make reference of who is about to speak before he/she begins. Make sure that only one person at a time talks.
6. Do not be afraid to incorporate gestures and employ natural facial expressions.

7. If you know some basic signs, do not be afraid to use them.
8. Continue to sign even if a hearing person comes up. Do not leave the Deaf person out of the conversation.
9. When using an interpreter, speak directly to the Deaf person; the interpreter will respond in the first person.
10. Rely on writing if you reach a communication impasse.

COMMUNICATION MODALITIES

Here are some of the ways in which important information can be commutated to Deaf and Hard-of-hearing patients.

- **Sign Language.** Sign languages have been demonstrated to be true languages at par with spoken languages. While spoken languages are based on classes of sound, sign languages are built from visual units (Martinez, 2012). It has no written system and are purely driven by grammatical devices in the nonmanual signals of face and body. In the Philippines, with the recent Senate approval of the 3rd and final reading of House Bill (HB) 7503 under Senate Bill No. 145, Filipino Sign Language (FSL) becomes official medium of instruction and communication to be used in all government transactions for the deaf community.
- **Fingerspelling.** Also known as dactylology is the representation of the letters of a writing system, and sometimes numeral systems, using only the hands. There are different handshapes representing each letter in the alphabet. In fingerspelling, letters and are formed one after another to spell out words. (Refer to the instructional video for the handshapes for specific letters and numbers). Fingerspelling can be comprehended visually of tactually. Tracing the shape of letters in the air like the shape of letter Z is the simplest visual from of fingerspelling. There are also various types of fingerspelling. The one-handed such as the American Sign Language (ASL) and the Irish Sign Language, or it can be a two-handed such as in British Sign Language

- **Oral communication.** This is done through speaking, listening, and speechreading, without the use of sign language. Again in using this technique, several factors must be considered that might influence the comprehension of Deaf person with the spoken messages.
- **Simultaneous communication.** A mode of communication employing sign language and spoken words simultaneously.
- **Total communication.** Communication through any and all means that were mentioned. Include but not limited to speechreading or lipreading, sign language, fingerspelling, pantomime, postural and gestural communication, visual cards, and writing.

VISUAL FACILITATION FOR IMPROVED COMMUNICATION

"*A* picture *is worth a thousand word*" is a phrase that refers to the notion that a story or complex idea can be conveyed by a single picture, if not better than, a lot of written words. It also speaks with the value of and efficiency of visual communication. According to an author, visual thinker, and strategist Mark Smiciklas, "pictures are easy on the mind". The brain processes visual data all at once as compared to textual data being processed in a linear manner. Thus, making pictures easier to process than words. In addition, graphic images can affect emotions, engage imaginations, and heighten creative thinking. Dr. Lynell Burmark, an award-winning educator whose specialties include strategies for successful presentation strategies, resources for early literacy, creativity and connectivity, and power of visual teaching and learning stated that "…unless our words, concepts and ideas are hooked onto an image, they will go in one ear, sail through the brain, and go out the other ear. Words are processed by our short-term memory. Images, on the other hand, go directly into long-term memory where they are indelibly etched." Pictured ruled as a way to communicate ideas. Humans have been communicating with each other for approximately 30,000 years, compared to written word which is for only about 3,700 years. Profound evidence date back in ancient time as early as 35,000 BC are remarkable pictures carved on rocks or clay tablet by early civilizations to communicate with each other. Because of this long, long history of communicating without text, our brains are simply hard-wired to process visual information better and faster than we process text (Parsons, 2018). Now in the contemporary world, images and other

visual aids are still extensively being utilized and improved as an effective means of conveying information and facilitate communication. People like to see the visualization of information in the books, news, signs such as road signs, and business presentations. Being more accustomed in processing images, ninety percent of the information sent to the brain is visual, and 93% of all human communication is visual (Pant, 2015).

Visual materials are also effective in conveying information and memory retention to people with special communication requirements such as Deaf, HOH and even people with low level of literacy. Images are said to lock in the information in our memory bank (Mills, 2016). Such in the examples of road signs, people react quicker in infographic symbols that in texts. Processing of symbols is fast. It takes just 150 milliseconds for a symbol to be processed and a further 100 milliseconds to attach meaning to it. It is also stated by countless digital and visual story tellers particularly in business that the brain processes images 60,000 times faster than it does text. Although there is still lack of scientific evidence to back this figure, this widely known trend unsurprisingly is still being extensively exploited in business and marketing. The use of visual materials in exchanging ideas and information changes the dynamics between people involve in the communication process. It helps to ease tension and remove hierarchy between individuals as their points are viewed alongside with others. Furthermore, visual facilitation is said to strengthen communication by improving understanding, anchoring communication memory, saves time, and stimulates creativity.

INFOGRAPHICS IN PATIENT COUNSELING

An infographic (short for information graphic) is a type of picture that blends data with design, helping individuals communicate messages to their audience. A more formal definition of infographics states as "*a visualization of data or ideas that tries to convey complex information to an audience in a manner that can be quickly consumed and easily understood*. The process of developing and publishing infographics is called data visualization, information design, or information architecture (Smiciklas, 2012).

In this manual, data visualization was done (Appendix A-F) on some of the common information and instructions being delivered to patient whenever certain medication is dispensed. These infographics were developed in collaboration with a Deaf graphic artist. It includes dosage formulations, timing and frequency of administration, and common side effects associated with the use of drugs. The infographics were developed to assist the pharmacists and other healthcare provider in relaying basic information to Deaf and HOH patients particularly when sign language and other modes of communication are limited. Moreover, the Filipino sign language of many medical terminologies are still in the process of development. Thus, limiting the existing signs to be executed in communicating with the use of sign language. The images included in this guidebook were developed with the help of consultants from various Deaf organizations and a Deaf graphic artist.

ACTIVITY 1

Communication without Spoken Language

This activity requires at least two people involved in the communication process and a facilitator who will evaluate the appropriateness of actions and accuracy of the executed messages. Learners must employ various means of communication without the use of spoken language such as postural and gestural communication, the use of infographics or visual communication, and the use of sign language to convey messages. Start conveying simple words then proceed to more complex phases and sentences.

ACTIVITY 2

Simulation and Counseling of Deaf Patient

This activity requires a simulated community pharmacy setting. The learner (pharmacists or student) will have to assist a Deaf patient in acquiring the prescribed medication through the process of dispensing. A facilitator who will evaluate the appropriateness of actions and accuracy of information must be present. Patient counseling shall be performed by employing various means of communication in order to provide appropriate information about the medication being dispensed to the Deaf or HOH patient.

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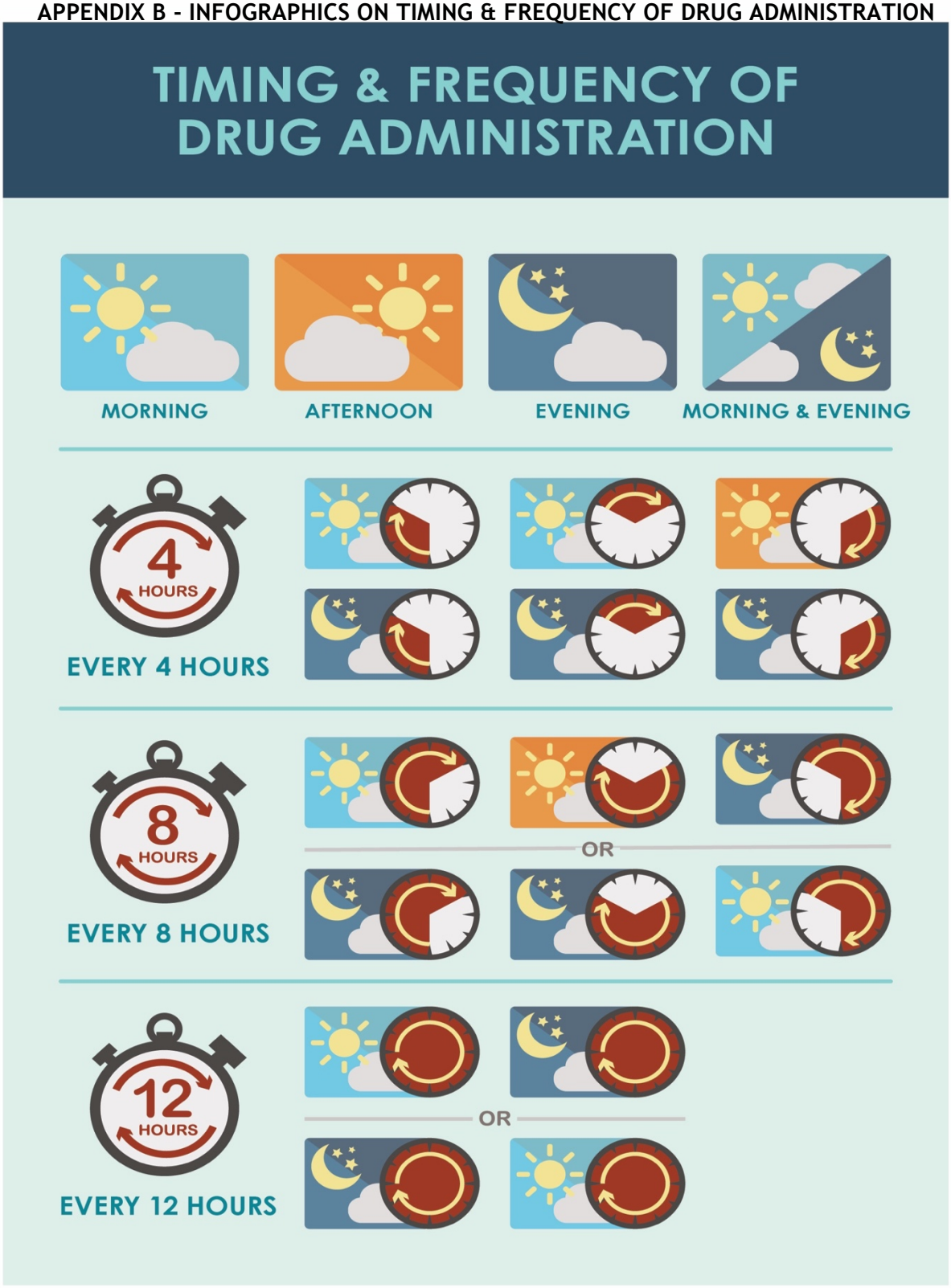
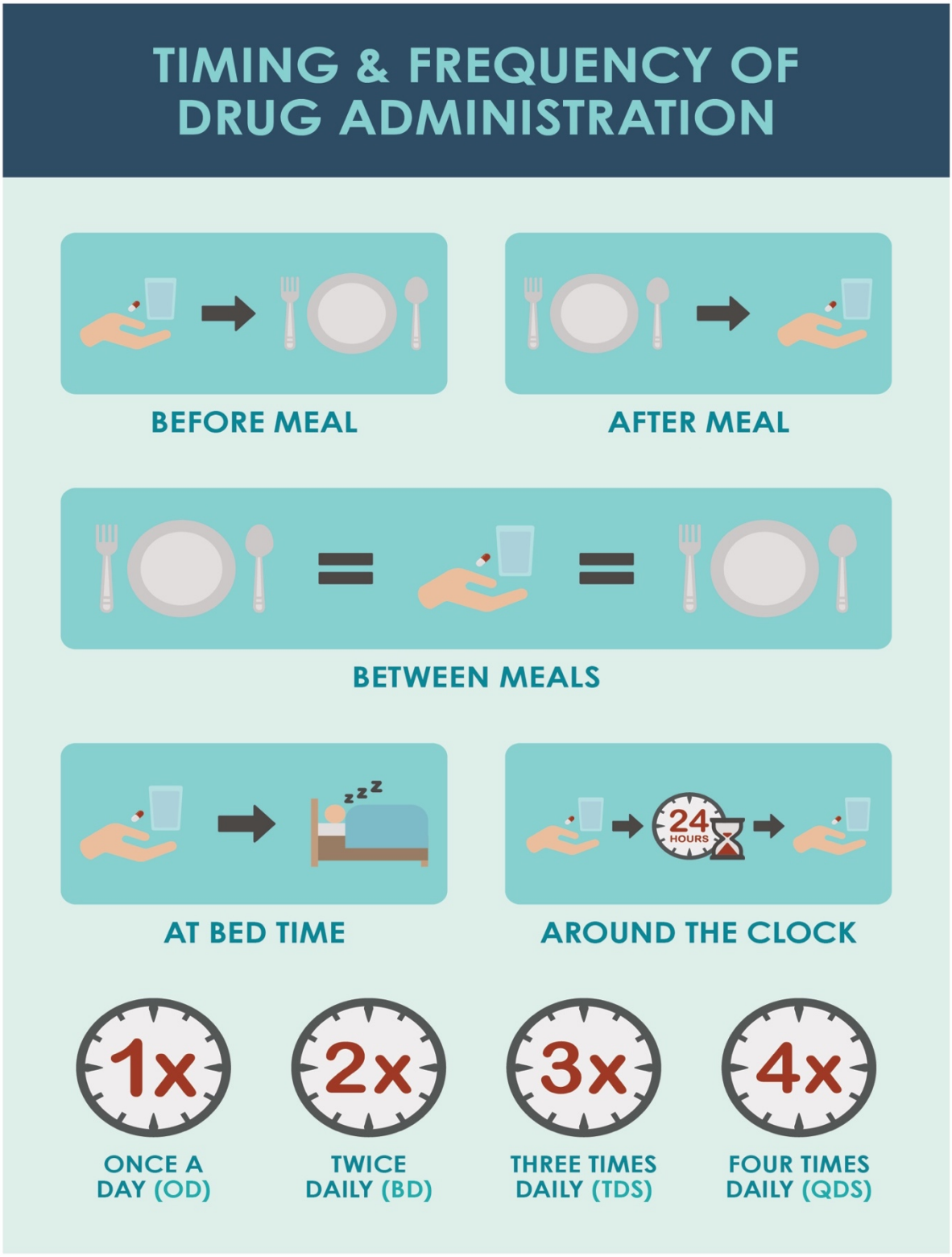
APPENDICES

APPENDIX A - INFOGRAPHICS ON DRUG DOSAGE FORMS

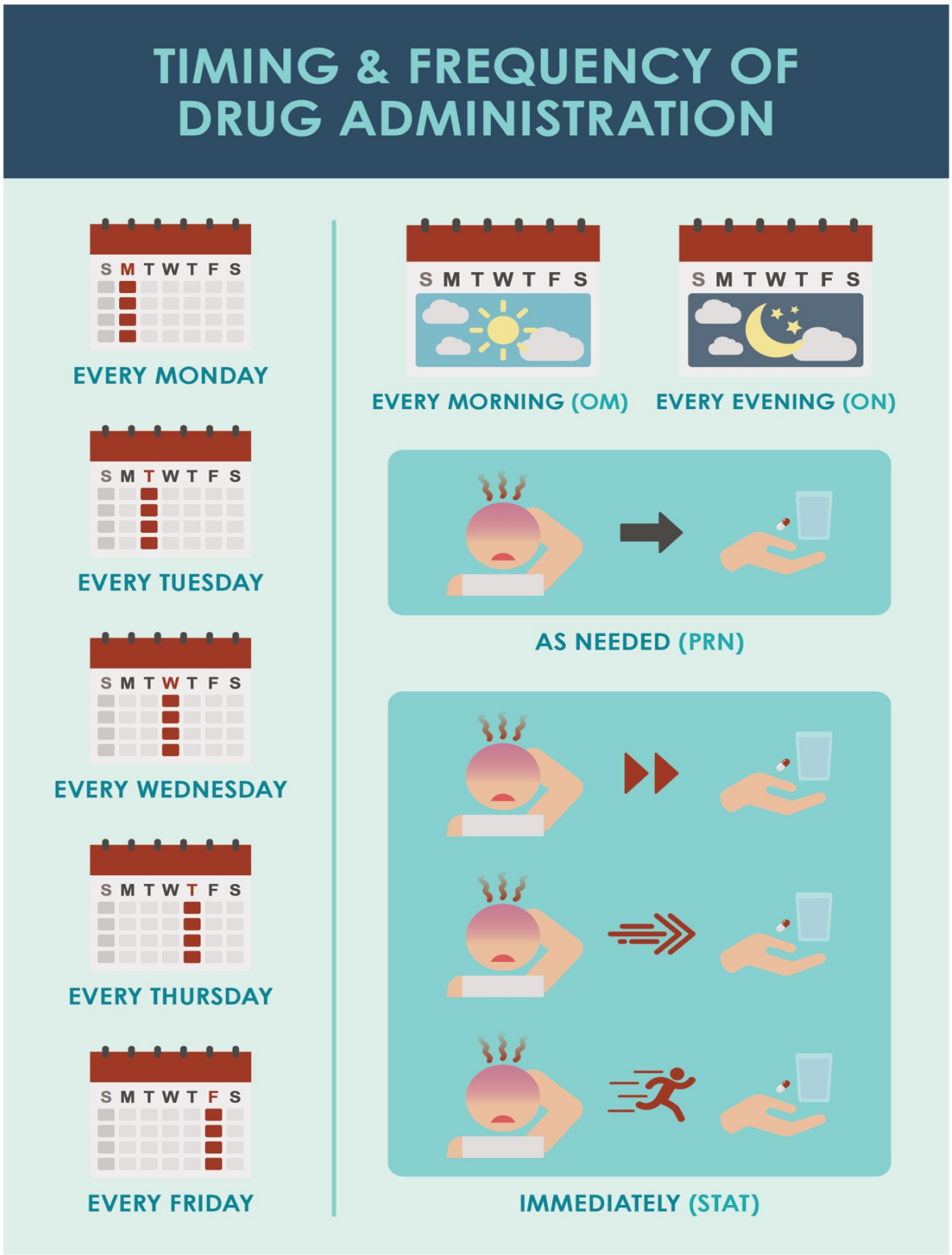
APPENDIX B - INFOGRAPHICS ON TIMING & FREQUENCY OF DRUG ADMINISTRATION



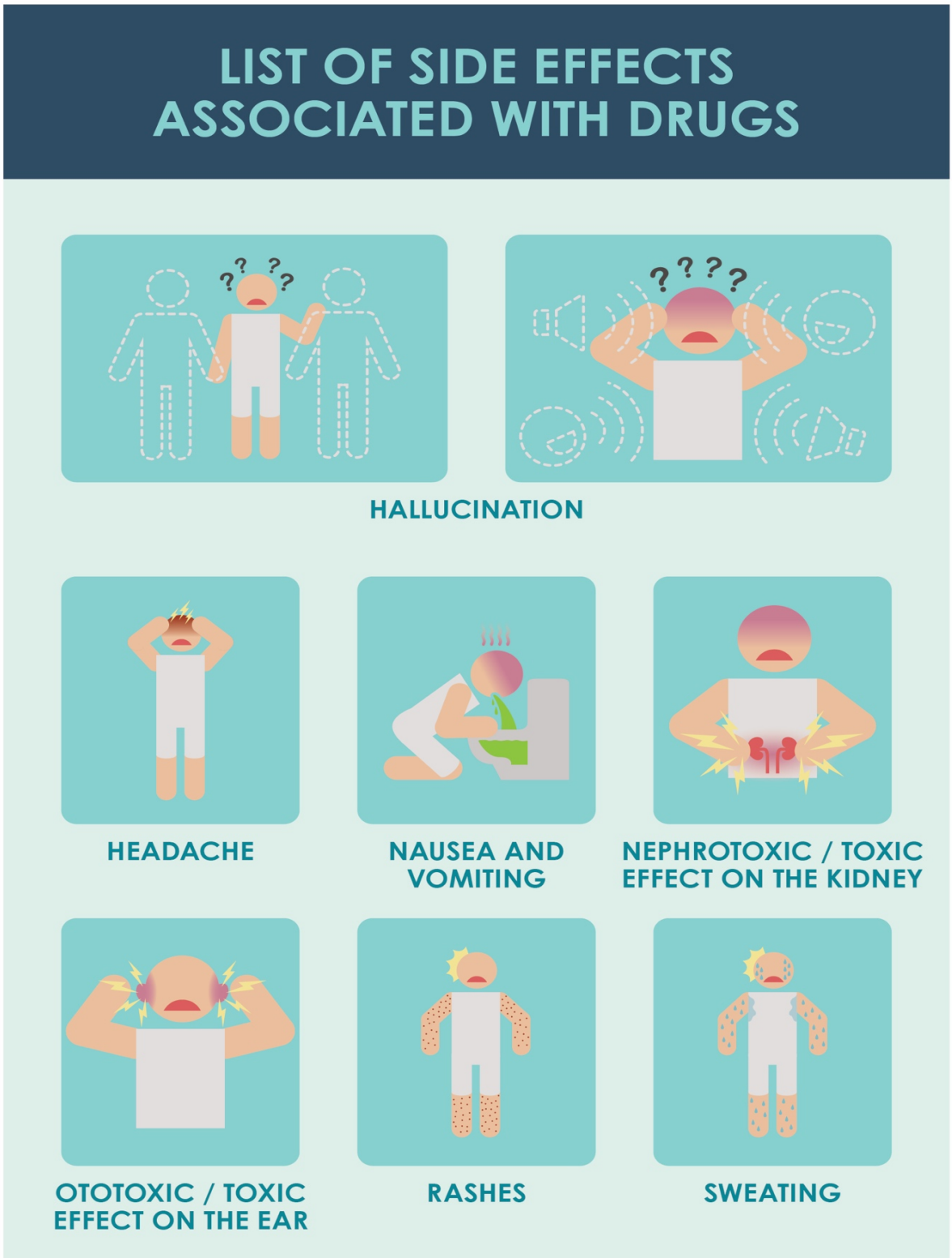
APPENDIX C - INFOGRAPHICS ON TIMING & FREQUENCY OF DRUG ADMINISTRATION



APPENDIX D - INFOGRAPHICS ON TIMING & FREQUENCY OF DRUG ADMINISTRATION



APPENDIX E - INFOGRAPHICS ON DRUGS SIDE EFFECTS



APPENDIX F - INFOGRAPHICS ON DRUGS SIDE EFFECTS

APPENDIX G

ABBREVIATION AND ACRONYMS USED IN PRESCRIPTIONS SIGNA/PATIENT INSTRUCTIONS

ABBREVIATION (LATIN ORIGIN)	MEANING
a.c (ante cinos)	before meals
ad lib (ad libitum)	at pleasure, freely
admin	administer
A.M. (ante meridiem)	morning
aq. (aqua)	water
ATC	around the clock
b.i.d (bis in die)	twice a day
c or (cum)	with
d (die)	day
et	and
h. ot hr. (hora)	hour
h.s. (hora somni)	at bedtime
i.c. (inter cibos)	between meals
min (minutum)	minute
m&n	morning and night
N&V	nausea and vomiting
noct. (nocte)	night
NPO (non per os)	nothing by mouth
p.c. (pos cibos)	after meals
P.M. (post meridiem)	afternoon; evening
p.o. (per os)	by mouth (orally)
p.r.n. (pro re nata)	as needed
q (quaque)	every
qAM	every morning
qah, q8h, etc	every ___ hours
q.i.d (quater in die)	four times a day
rep. (repetatur)	repeat
s (sine)	without
s.i.d. (semel in die)	once a day
s.o.s. (si opus sit)	if there is need, as needed
stat (stamin)	immediately
t.i.d. (ter in die)	three times a day
ut dict. (ut dictum)	as directed
wk.	week

APPENDIX H

DEFINITION OF TERMS

bleeding - also known as hemorrhage is used to describe blood loss.

blurred vision - is the loss of sharpness of eyesight, making objects appear out of focus and hazy.

capsule - solid dosage forms in which medicinal agents and/or inert substances are enclosed in small shell of gelatin

constipation **-** condition in which bowel movements are infrequent or incomplete. The stool can be hard and dry.

cream **-** semisolid preparations containing one or more medicinal agents dissolved or dispersed in either a water-in-oil (W/O) emulsion or an oil-in-water (O/W) emulsion or in another type of water-washable bases.

diarrhea **-** loose, watery stools or bowel movements. An abnormally frequent discharge of semisolid or fluid fecal matter from the bowel.

dizziness **-** imprecise term commonly used to describe various symptoms such as faintness, giddiness, imbalance, lightheadedness, unsteadiness, or vertigo.

dry mouth **-** also known as *xerostomia,* refers to a condition in which the salivary glands in the mouth do not make enough saliva to keep the mouth wet.

fatigue **-** characterized by a lessened capacity for work and reduced efficiency of accomplishment usually accompanied by a feeling of weariness, sleepiness, irritability and may also supervene when, from any cause, energy expenditure outstrips restorative processes and may be confined to a single organ.

***gastrointestinal disturbance* - c**ommonly include symptoms of stomach pain, heartburn, diarrhea, constipation, nausea, and vomiting.

***gels* -** also called jellies are semisolid systems consisting of dispersions of small or large molecules in an aqueous liquid vehicle rendered jellylike by the addition of a gelling agent.

***granule* -** dosage form composed of dry aggregates of powder particles that may contain one or more APIs, with or without the other ingredients.

***hallucination* -** apparent, often strong subjective perception of an external object or event when no such stimulus or situation is present; may be visual, auditory, olfactory, gustatory, or tactile.

***headache* -** Pain in various parts of the head, not confined to the area of distribution of any nerve.

***hematological abnormalities*-** also known as blood disorders, common blood disorders include anemia, bleeding disorders such as hemophilia, blood clots, and blood cancers such as leukemia, lymphoma, and myeloma.

***hypersensitivity*-** an abnormal sensitivity, a condition in which there is an exaggerated response by the body to the stimulus of a foreign agent.

***inhalation* -** a route of administration for aerosoles characterized by dispersion of the API into the airways during inspiration.

***injections* -** are sterile, pyrogen free (endotoxin units (EU) limited) preparations intended to be administered parenterally. A route of administration of a liquid or semisolid deposited into a body cavity, fluid, or tissue by a use of a needle.

liniment **-** an alcoholic or oleaginous solution or emulsion applied by rubbing on the skin for treating pain and stiffness of underlying musculature.

mouthwash **-** an aqueous solution used to rinse the oral cavity.

nausea - an inclination to vomit

nephrotoxic **-** toxic to renal cells or toxicity in the kidneys.

ointment **-** are semisolid preparations intended for external application to the skin or mucous membrane. Maybe medicated or not.

ototoxic **-** ear poisoning which results from exposure to drugs or chemicals that damage the inner ear or the vestibulocochlear nerve.

parenteral **-** refers to the injectable routes of administration. Derived from the Greek words *para* (outside) and *enteron* (intestine) and denotes routes of administration other than the oral route.

photosensitivity **-** abnormal sensitivity to light.

powder **-** a dosage form composed of a solid or mixture of solids reduced to a finely divided state and intended for internal or external use.

rash **-** colloquial term for a cutaneous eruption. An area of irritated swollen skin.

solutions **-** are liquid preparations that contain one or more chemical substance dissolved in a suitable solvent or mixture of mutually miscible solvents.

spray **-** a liquid minutely divided as by a jet of air or steam; used to facilitate application to the intended area.

suppository **-** solid dosage form in which one or more APIs are dispersed in a suitable base and molded or otherwise formed in to a suitable shape for insertion

into body orifices where they melt, soften, or dissolve and exert local or systemic effects.

sweating **-** also called perspiration, the release of salt-based fluid from the sweat glands

syrup **-** are concentrated aqueous preparations of a sugar or sugar substitute with or without flavoring agents and medicinal substances.

tablet **-** solid dosage forms usually prepared with the aid of suitable pharmaceutical excipients. They may vary in size, shape, weight, hardness, thickness, disintegration, and dissolution characteristics and in other aspects, depending on their intended use and method of manufacture. Most tablets are used in the oral administration of drugs.

vomiting **-** throwing up, is a forceful discharge of stomach contents.

APPENDIX I

ANSWERS TO REVIEW QUESTIONS

REVIEW QUESTIONS NUMBER 1

TRUE OR FALSE

1. TRUE
2. FALSE
3. FALSE
4. FALSE
5. TRUE
6. TRUE
7. FALSE
8. TRUE
9. TRUE
10. FALSE

REVIEW QUESTIONS NUMBER 2

TRUE OR FALSE

1. TRUE
2. TRUE
3. FALSE
4. FALSE
5. TRUE
6. TRUE
7. FALSE
8. FALSE

APPENDIX J

OVERVIEW OF THE INSTRUCTIONAL VIDEO

Adjunct to this guidebook is a Filipino Sign Language instructional video produced to demonstrate the signs that are commonly used in conversation and during patient counseling when dispensing medications.

Below are the list of topics and terms covered in the instructional video.

PART I. BASIC FILIPINO SIGN LANGUAGE USED IN CONVERSATIONS

1. Alphabet Sign (A to Z)
2. Number Sign (1 to 20, ordinal numbers)
3. Time Sign
4. WH questions
5. Basic Color Signs
6. Greetings & Common Conversational Phrases
7. Different People and Healthcare Providers

PART II. COMMON MEDICATION INSTRUCTIONS

1. Timing & Frequency of Drug Administration
2. List of Side Effects Associated with Drugs
3. Special Instruction for Some Medications