

IMPROVING NUTRITIONAL STATUS AMONG BEDRIDDEN PATIENTS ON ENTERAL FEEDING IN DOMICILIARY SERVICES: PERLIS INITIATIVE

**PERKHIDMATAN PERAWATAN DOMISILIARI
PEJABAT KESIHATAN DAERAH KANGAR**



SIMPLYSEVEN



ADVISOR

DR. HAMIZAR IQBAL BIN ABDUL HALIM
PEJABAT KESIHATAN DAERAH KANGAR



FACILITATOR

DR. JUNAIDAH BINTI ISHAK
PEJABAT KESIHATAN DAERAH KANGAR



MEDICAL OFFICER

DR. SYADWAN
RUWAIDIYAH BINTI
AHMAD HUSNI
PKD KANGAR



DIETITIAN

NOORHAYATI BINTI
MOHAMAD YUSOF
KLINIK KESIHATAN
KG GIAL



PHYSIOTHERAPIST

PN. SYAMIMI IZATI
BINTI SHARIDAN
KLINIK KESIHATAN
PAUH



**OCCUPATIONAL
THERAPIST**

PN. NURSAMILLA BINTI
MD NOOR
KLINIK KESIHATAN ARAU



STAFF NURSE

PN. AFIDAYATI BINTI
AHMAD
PERKHIDMATAN
PERAWATAN DOMISILIARI
PERLIS



STAFF NURSE

PN. SOFEAH ABD RAHMAN
PERKHIDMATAN PERAWATAN
DOMISILIARI PERLIS



MEDICAL ASSISTANT

EN. JASMANI MOERSHIDI BIN
JAAFAR
PERKHIDMATAN PERAWATAN
DOMISILIARI PERLIS

PROBLEM PRIORITIZATION

NO.	PROBLEMS	S	M	A	R	T	€
1.	Prominent joint stiffness due to prolonged immobilization	7	12	9	8	9	45
2.	Substandard MBI after 3 months of receiving Domiciliary treatment	11	12	9	7	10	49
3.	Malnutrition among bedridden patient with Enteral Feeding	18	15	19	18	17	87
4.	Low percentage of caregivers taking charge patient post-treatment	9	9	10	8	7	43
5.	Poor pressure sores healing among bedridden patients	7	12	8	8	7	42

PROBLEM TO BE STUDIED

“ Malnutrition among
bedridden patient on
Enteral Feeding ”

INTRODUCTION

01

WHAT IS DOMICILIARY HEALTH CARE SERVICES ?

- Health care services provided at home
- Improve health access to the stable bedridden patient

02

WHO ARE DHCS MEMBERS ?

- Medical members
- Rehabilitation members
- Dietitian
- Medical Social Worker
- Counsellor

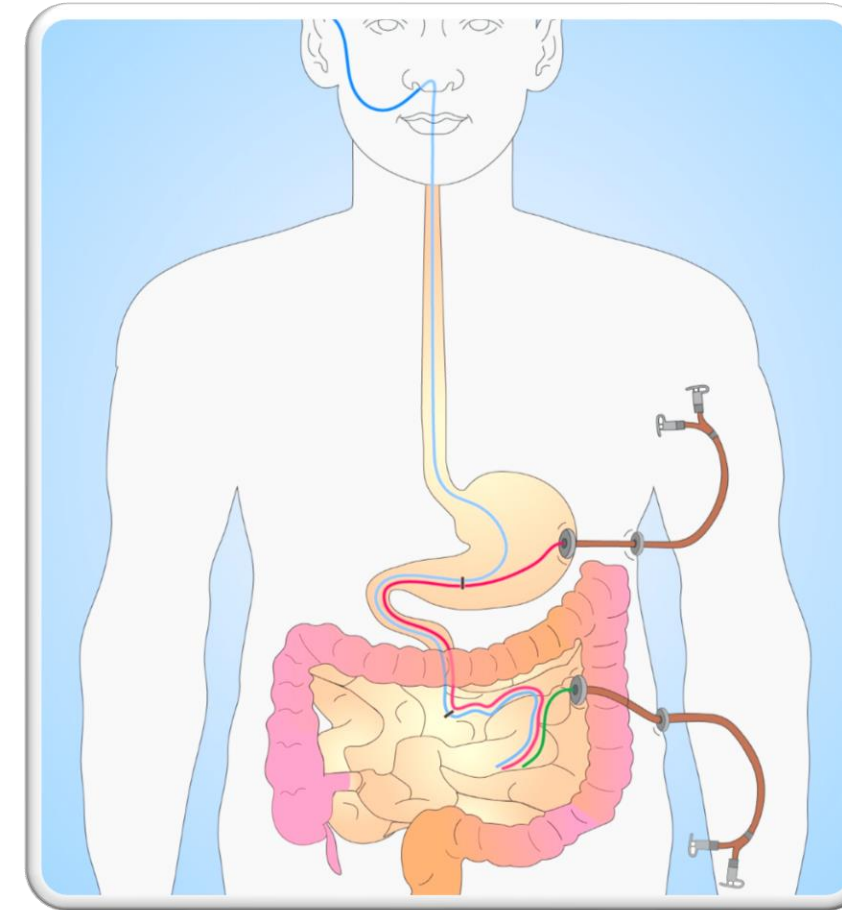


INTRODUCTION

03

Enteral Feeding

- 78% of Domiciliary patients on enteral feeding(2022)
- Nutrition feeding delivered via tube in form of partially liquid and blenderized food
- Tube placed into the stomach or small intestine
- Indicator for patient with swallowing problem



Enteral Nutritional Formula (ENF)

04

- Specialized liquid nutritional product for enteral feeding prescribed by dietitian
- Contain a balanced combination of macronutrients, vitamins, minerals
- Purchased by caretaker

INTRODUCTION

05

MALNUTRITION

- Body does not get the right amount of nutrition including micronutrient and macronutrient
- Commonly occurred among bedridden
- Malnourished patient identified using nutritional assessment tools. Example: MNA-SF

Malnourished	At risk of malnutrition	Normal Nutritional Status
< 7	8 - 11	12 - 14



REASON FOR SELECTION

S

In 2022, study of domiciliary cases shows 68% of bedridden enteral feeding patients in Perlis was malnourished leading to deterioration of health and well-being. Malnutrition may positively associated with numerous adverse impacts, including higher infection and complication rates, increased muscle loss, impaired wound healing thus increased morbidity and mortality.

M

Based on observation during domiciliary home visit and Domiciliary Care Report Card Pd004(b), 2015

A

Most of domiciliary cases are bedridden patients on enteral feeding (78% in 2022). Appropriate enteral feeding administration help patient in achieving calorie and nutrition requirement and prevent further malnutrition.

R

Malnutrition can be minimized by interventional strategies with great cooperation from caretakers and multi-disciplinary healthcare worker

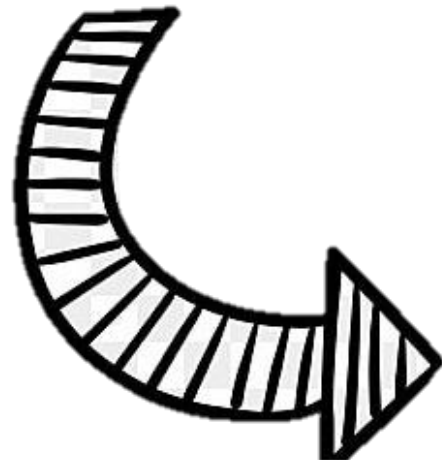
T

Overall study and interventions can be done within a reasonable time without any issues arise that may affect the success of the study.

LITERATURE REVIEW

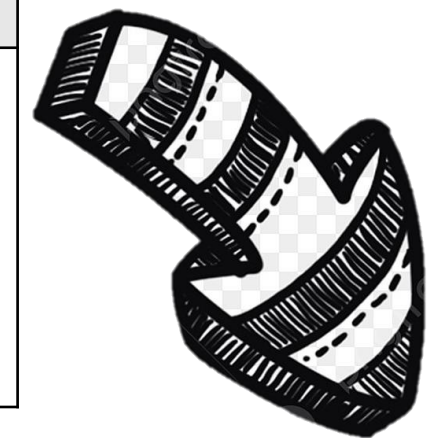
PREVALENCE

Nishioka S Wakabayashi H and Yoshida T., 2016	National Health and Morbidity Survey 2018	Stratton RJ et al., 2007
In Japan, 42% of older stroke patients in the convalescent stage experienced malnutrition	30% among elderly in Malaysia	17.4% among elderly people in Northern Peninsular Malaysia



COMPLICATIONS

Lisa et al., 2017	Stratton RJ et al., 2007
The risk of death was nearly four times higher for malnourished older persons than for well-nourished ones	Provision of nutritional supplements to malnourished patients reduces complications such as infections and wound breakdown by 70% and mortality by 40%



CAUSAL FACTOR

Altomare R et al., 2015
Patients that were diagnosed with malnutrition, 66% underwent enteral nutrition therapy and that the treatment adherence rate was 59%

PROBLEM ANALYSIS

WHAT

Malnutrition among bedridden patient on Enteral Feeding

WHERE

Home of bedridden patients in Perlis

WHEN

Along domiciliary care in 2023

WHO

Patient, caretaker and domiciliary team

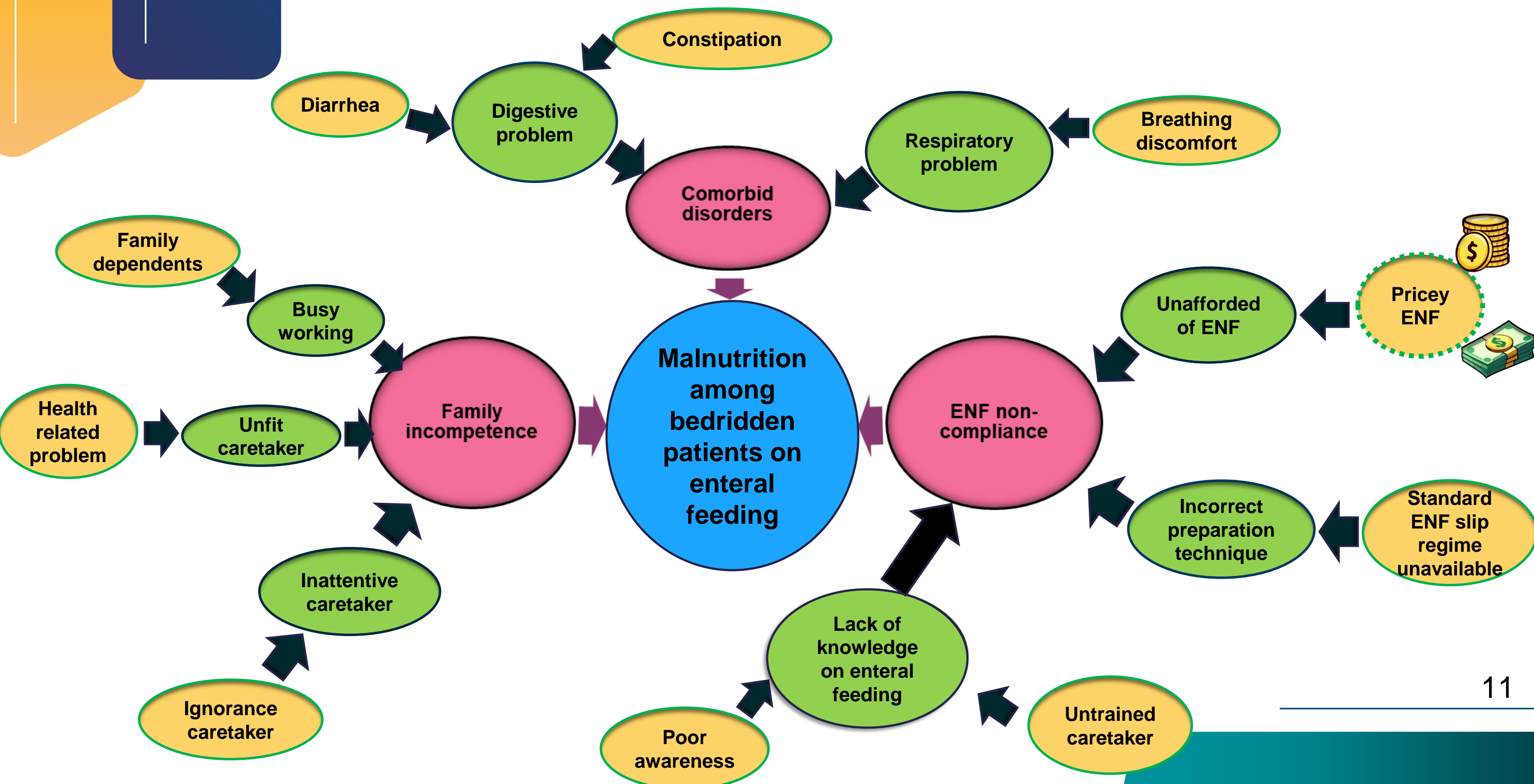
WHY

Patients not received enough nutrition most probably due to: ENF non-compliance, family incompetence and comorbid disorders

HOW

Patients not received total nutrition according to actual calorie and protein requirements

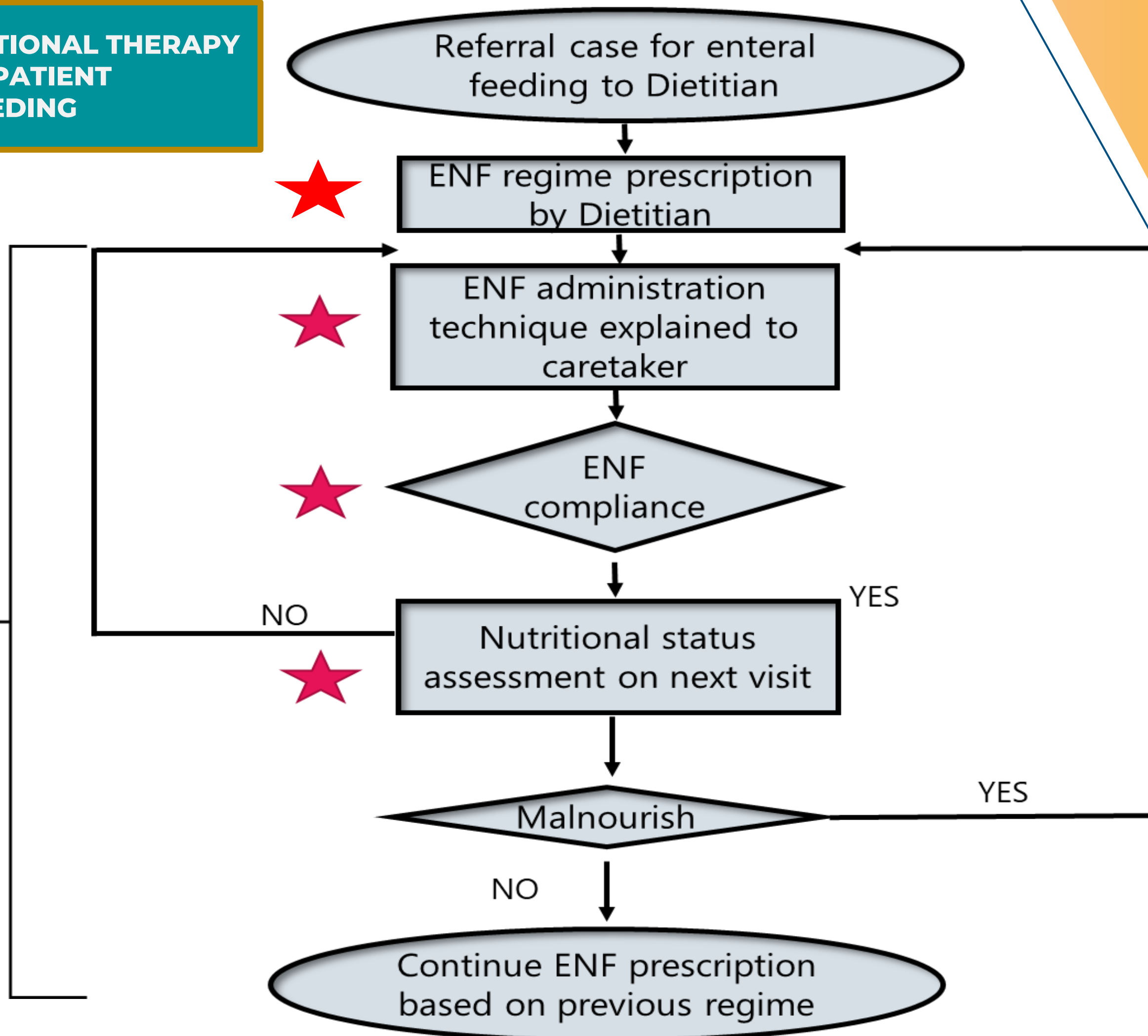
PROBLEM ANALYSIS CHART



**PROCESS OF CARE FOR NUTRITIONAL THERAPY
AMONG BEDRIDDEN PATIENT
WITH ENTERAL FEEDING**

LOCATION

Patient's resident



MODEL OF GOOD CARE

PROCESS	CRITERIA	STANDARD
ENF regime prescribed by Dietitian	Dietitian must provide ENF prescription regime to caretaker during first visit	100%
ENF preparation method explained to caretaker	Training and education: <ul style="list-style-type: none"> - Explain - Infographic provided with demonstration 	100% 100%
ENF compliances by caretaker	Observation on routine visit: <ul style="list-style-type: none"> - Compliances to prepare ENF formula or concentration according to regime prescribed - Compliances to administered ENF to patient using correct technique with proper apparatus. - Compliances to provide ENF according to correct feeding time 	100% 100% 100%
Patient's nutritional status re-assessed	Dietitian conduct nutritional re-assessment one month after first prescription regime provided <ul style="list-style-type: none"> - Subjective Global Assessment (SGA) form - Anthropometry measurement 	100% 100%

GENERAL OBJECTIVE

To improve nutrition status among bedridden patients on enteral feeding in domiciliary care in Perlis

SPECIFIC OBJECTIVE

- 1. To verify the prevalence of malnutrition among bedridden patients on enteral feeding in domiciliary care**
- 2. To identify the contributing factors of malnutrition among bedridden patients on enteral feeding in domiciliary care.**
- 3. To formulate and implement proper remedial action**
- 4. To evaluate the effectiveness of remedial action**

PROBLEM STATEMENT

PROBLEM

In 2022, 68% of bedridden patient on enteral feeding in Domiciliary services in Perlis were malnourished.

EFFECT

Malnutrition may positively associated with numerous adverse impacts, including higher infection and complication rates, increased muscle loss, impaired wound healing thus increased morbidity and mortality.

POSSIBLE CAUSE

Malnutrition can be due to ENF non-compliance, family incompetence and comorbid disorders.

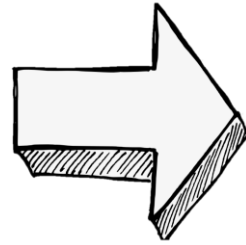
AIM OF STUDY

This study will improve nutrition status among bedridden patients on enteral feeding in domiciliary services.



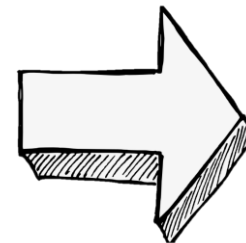
INDICATOR AND STANDARD

INDICATOR



Percentage of malnutrition among bedridden patient with enteral feeding in Domiciliary care

FORMULA

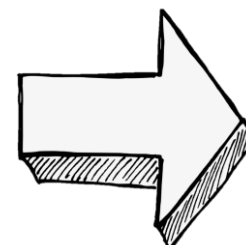


Number of malnutrition cases among bedridden patient on enteral feeding in Domiciliary care

× 100 %

Total number of bedridden patient on enteral feeding in Domiciliary care

STANDARD

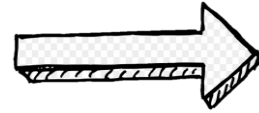


≤ 30%
(National Health Morbidity Study, 2018)

PROCESS OF GATHERING INFORMATION

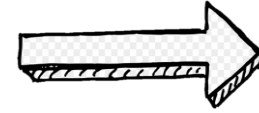
METHODOLOGY

STUDY DESIGN



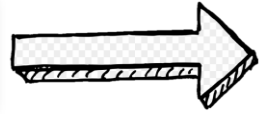
Cross - Sectional Study

SAMPLING METHOD



Universal Sampling

SAMPLE SIZE



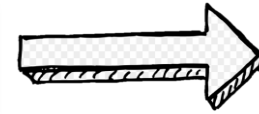
N= 101

TARGET SAMPLING



Total bedridden patients on enteral feeding in domiciliary services in year 2022

INCLUSION



Bedridden patients on enteral feeding prescribed with enteral nutrition formulas by dietitians

EXCLUSION



- 1. Renal problem**
- 2. Refusal caretakers**
- 3. Transitional feeding (oral + enteral feeding)**

STUDY PLAN



DATA COLLECTION

STUDY INSTRUMENT

OBJECTIVE

1. To identify nutritional status category
2. To identify prevalence of malnutrition

TARGET SAMPLING


All bedridden patients on enteral feeding prescribed with enteral nutrition formulas (ENF) by dietitians

SAMPLE SIZE

N= 101

1.0 MINI NUTRITIONAL ASSESSMENT (MNA) FORM

Mini Nutritional Assessment MNA[®]



Last name: _____ First name: _____

Sex: _____ Age: _____ Weight, kg: _____ Height, cm: _____ Date: _____

Complete the screen by filling in the boxes with the appropriate numbers.
Add the numbers for the screen. If score is 11 or less, continue with the assessment to gain a Malnutrition Indicator Score.

Screening		
A Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties? 0 = severe decrease in food intake 1 = moderate decrease in food intake 2 = no decrease in food intake	<input type="checkbox"/>	
B Weight loss during the last 3 months 0 = weight loss greater than 3kg (6.6lbs) 1 = does not know 2 = weight loss between 1 and 3kg (2.2 and 6.6 lbs) 3 = no weight loss	<input type="checkbox"/>	
C Mobility 0 = bed or chair bound 1 = able to get out of bed / chair but does not go out 2 = goes out	<input type="checkbox"/>	
D Has suffered psychological stress or acute disease in the past 3 months? 0 = yes 2 = no	<input type="checkbox"/>	
E Neuropsychological problems 0 = severe dementia or depression 1 = mild dementia 2 = no psychological problems	<input type="checkbox"/>	
F Body Mass Index (BMI) (weight in kg) / (height in m ²) 0 = BMI less than 19 1 = BMI 19 to less than 21 2 = BMI 21 to less than 23 3 = BMI 23 or greater	<input type="checkbox"/>	
Screening score (subtotal max. 14 points) 12-14 points: Normal nutritional status 8-11 points: At risk of malnutrition 0-7 points: Malnourished For a more in-depth assessment, continue with questions G-R	<input type="checkbox"/> <input type="checkbox"/>	
Assessment		
G Lives independently (not in nursing home or hospital) 1 = yes 0 = no	<input type="checkbox"/>	
H Takes more than 3 prescription drugs per day 0 = yes 1 = no	<input type="checkbox"/>	
I Pressure sores or skin ulcers 0 = yes 1 = no	<input type="checkbox"/>	
J How many full meals does the patient eat daily? 0 = 1 meal 1 = 2 meals 2 = 3 meals	<input type="checkbox"/>	
K Selected consumption markers for protein intake • At least one serving of dairy products (milk, cheese, yoghurt) per day yes <input type="checkbox"/> no <input type="checkbox"/> • Two or more servings of legumes or eggs per week yes <input type="checkbox"/> no <input type="checkbox"/> • Meat, fish or poultry every day yes <input type="checkbox"/> no <input type="checkbox"/> 0.0 = if 0 or 1 yes 0.5 = if 2 yes 1.0 = if 3 yes	<input type="checkbox"/> <input type="checkbox"/>	
L Consumes two or more servings of fruit or vegetables per day? 0 = no 1 = yes	<input type="checkbox"/>	
M How much fluid (water, juice, coffee, tea, milk...) is consumed per day? 0.0 = less than 3 cups 0.5 = 3 to 5 cups 1.0 = more than 5 cups	<input type="checkbox"/> <input type="checkbox"/>	
N Mode of feeding 0 = unable to eat without assistance 1 = self-fed with some difficulty 2 = self-fed without any problem	<input type="checkbox"/>	
O Self view of nutritional status 0 = views self as being malnourished 1 = is uncertain of nutritional state 2 = views self as having no nutritional problem	<input type="checkbox"/>	
P In comparison with other people of the same age, how does the patient consider his / her health status? 0.0 = not as good 0.5 = does not know 1.0 = as good 2.0 = better	<input type="checkbox"/> <input type="checkbox"/>	
Q Mid-arm circumference (MAC) in cm 0.0 = MAC less than 21 0.5 = MAC 21 to 22 1.0 = MAC 22 or greater	<input type="checkbox"/> <input type="checkbox"/>	
R Calf circumference (CC) in cm 0 = CC less than 31 1 = CC 31 or greater	<input type="checkbox"/>	
Assessment (max. 16 points)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Screening score	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Total Assessment (max. 30 points)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Malnutrition Indicator Score		
24 to 30 points	<input type="checkbox"/>	Normal nutritional status
17 to 23.5 points	<input type="checkbox"/>	At risk of malnutrition
Less than 17 points	<input type="checkbox"/>	Malnourished

References
 1. Vellas B, Villars H, Abellan G, et al. Overview of the MNA[®] - Its History and Challenges. *J Nutr Health Aging*. 2006; **10**:456-465.
 2. Rubenstein LZ, Harker JO, Salva A, Guigoz Y, Vellas B. Screening for Undernutrition in Geriatric Practice: Developing the Short-Form Mini Nutritional Assessment (MNA-SF). *J Gerontol*. 2001; **56A**: M366-377
 3. Guigoz Y. The Mini-Nutritional Assessment (MNA[®]) Review of the Literature - What does it tell us? *J Nutr Health Aging*. 2006; **10**:466-487.
 © Société des Produits Nestlé, S.A., Vevey, Switzerland, Trademark Owners
 © Nestlé, 1994, Revision 2009. N67200 12/99 10M
 For more information: www.mna-elderly.com

STUDY INSTRUMENT

OBJECTIVE

To determine the factors contributing

TARGET SAMPLING

All bedridden patients on enteral feeding prescribed with enteral nutrition formulas (ENF) by dietitians

SAMPLE SIZE

N= 101


2.0 DOMICILIARY CARE REPORT CARD PD004(B), 2015

20/9/22 PBAA

PPD004 (b) 2015

NO. PENDAFTARAN: 61/2022

MY KID NO./NO. K/P: [REDACTED]



REKOD PENILAIAN KES PERKHIDMATAN PERAWATAN DOMISILIARI
(SIMPANAN KLINIK KESIHATAN)

NAMA PESAKIT	[REDACTED]
NO. KAD PENGENALAN PESAKIT	[REDACTED]
NAMA PENJAGA	[REDACTED]
NO. KAD PENGENALAN PENJAGA	[REDACTED]
NO. TEL	1. Telefon Bimbit: [REDACTED]
	2. Rumah: [REDACTED]
ALAMAT SEMASA MENJALANKAN RAWATAN	LOT 35 FELCA GUGUSAN LUBUK SIREH, 02100 KAKI BUKIT, PERLIS.
NAMA KAKITANGAN BERTANGGUNGJAWAB (PERSONALIZE CARE)	1. OT/PT:
	2. PPPJK:

STUDY INSTRUMENT

OBJECTIVE

To determine the factors contributing

TARGET SAMPLING

Caretakers of **malnourished** bedridden patients on enteral feeding prescribed with enteral nutrition formulas (ENF) by dietitians

SAMPLE SIZE

N= 69

3.0 OBSERVATIONAL CHECKLIST OF ENTERAL FEEDING

SENARAI SEMAK PENILAIAN PEMBERIAN REGIM SUSU PELENGKAP BERNUTRISI ATAU BLENDERIZED TUBE FEEDING (BTF) KEPADA PESAKIT DOMISILIARI DI NEGERI PERLIS

NAMA	
NO. KAD PENGENALAN	
TARIKH	

Untuk diisi oleh petugas kesihatan Domisiliari yang membuat lawatan susulan

1. PEMBERIAN SUSU PELENGKAP BERNUTRISI

i. Adakah anda memberi susu (atau BTF) mengikut keperluan pesakit berdasarkan panduan yang telah diberi? [sukatan yang betul]

YA
TIDAK

Jika TIDAK, nyatakan sebab:.....

ii. Adakah anda memberi susu (atau BTF) mengikut masa yang ditetapkan iaitu setiap 3 jam?

YA
TIDAK

Jika TIDAK, nyatakan sebab:.....

iii. Adakah anda membeli dan memberi produk susu yang tepat kepada pesakit berdasarkan panduan yang telah dicadangkan?

YA
TIDAK

Jika TIDAK, nyatakan sebab:.....

iv. Adakah cara pemberian susu (atau BTF) mengikut teknik yang betul berdasarkan panduan yang telah diberi?

YA
TIDAK

Jika TIDAK, nyatakan sebab:.....

2. KERJASAMA PENJAGA

i. Sila nyatakan bilangan penjaga yang menguruskan pesakit:.....

ii. Adakah penjaga berpengetahuan dalam teknik penyediaan dan pemberian susu kepada pesakit?

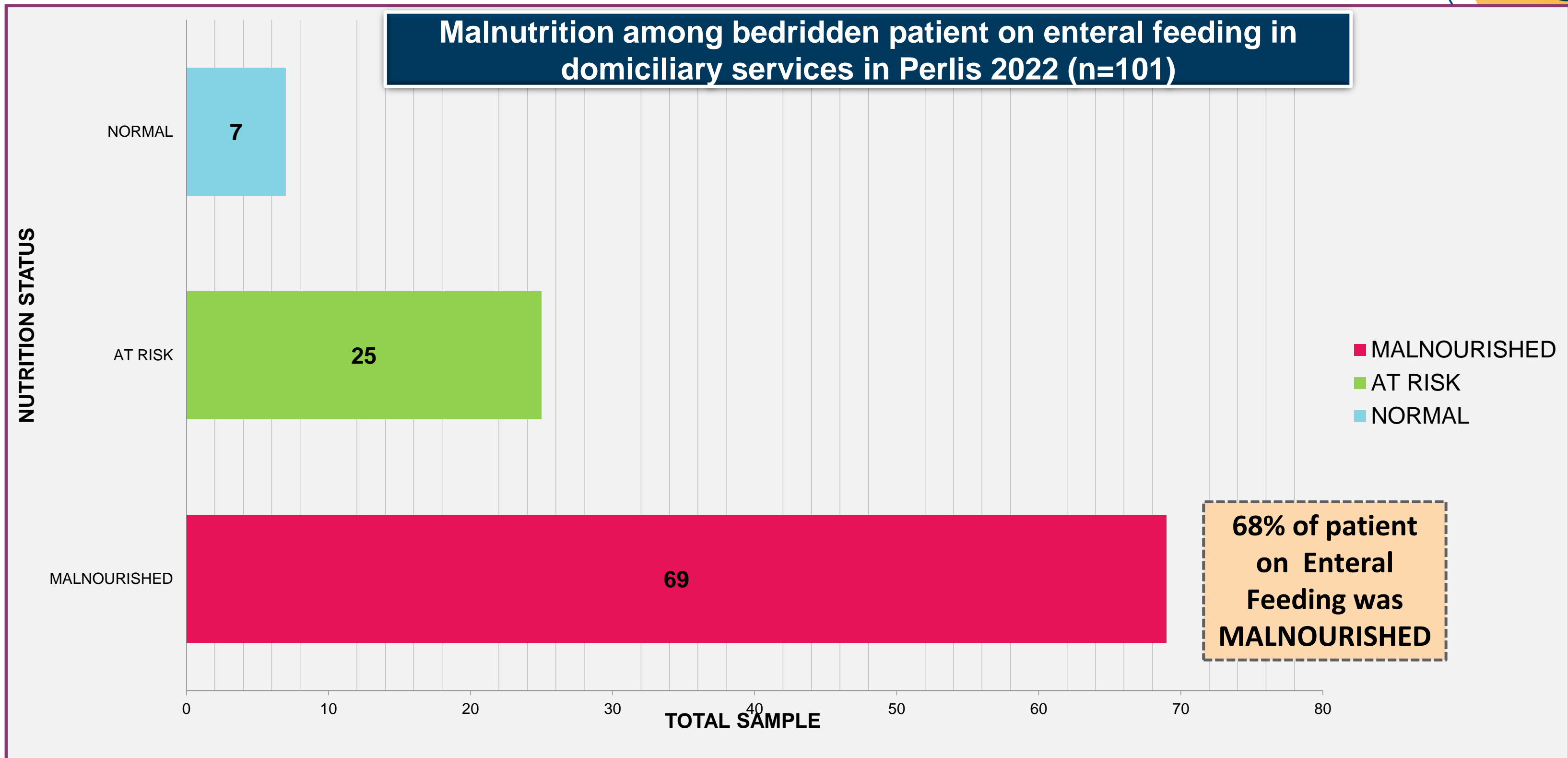
YA
TIDAK

ANALYSIS & INTERPRETATION

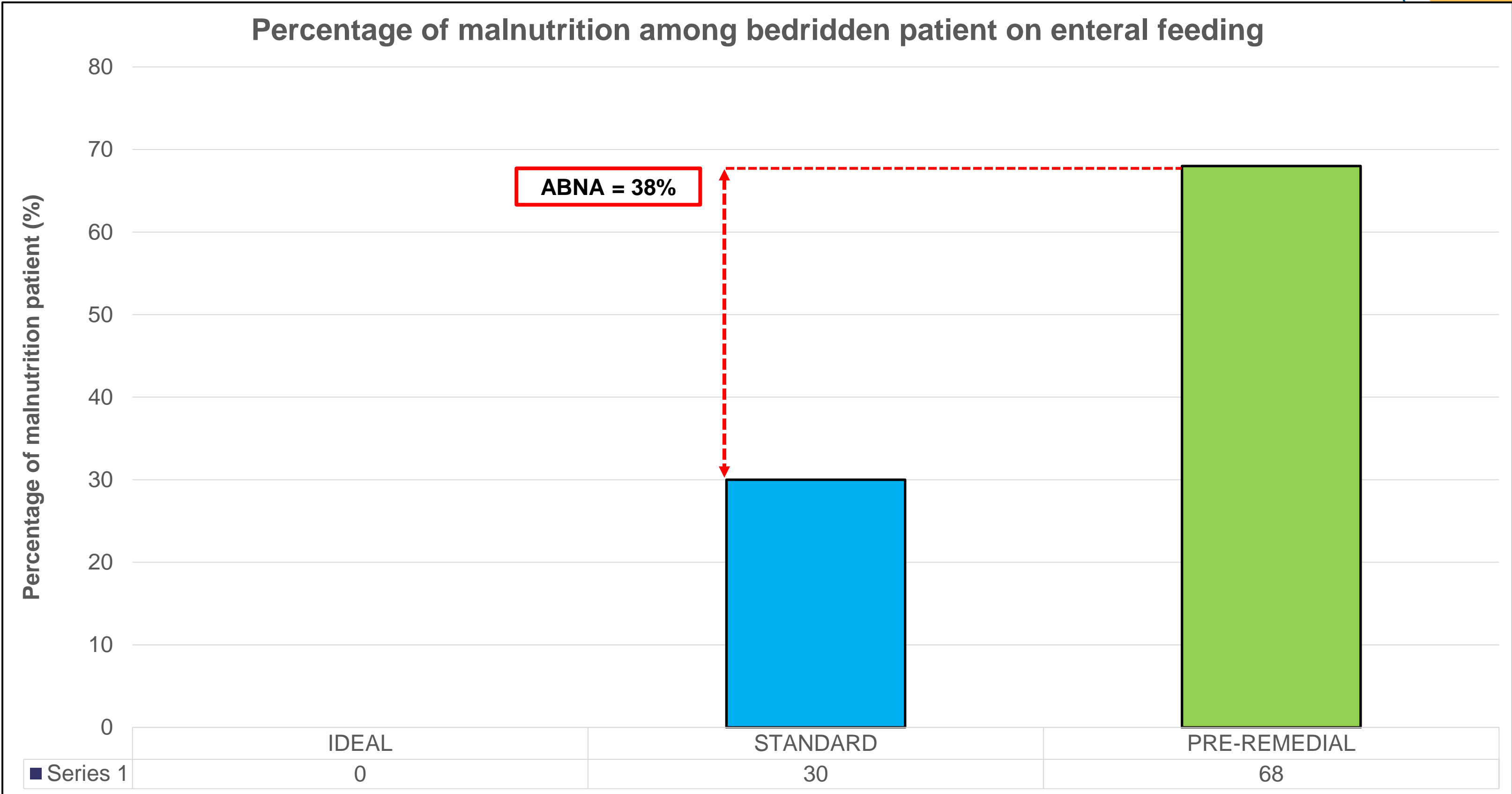
VERIFICATION STUDY

NUTRITION STATUS ANALYSIS

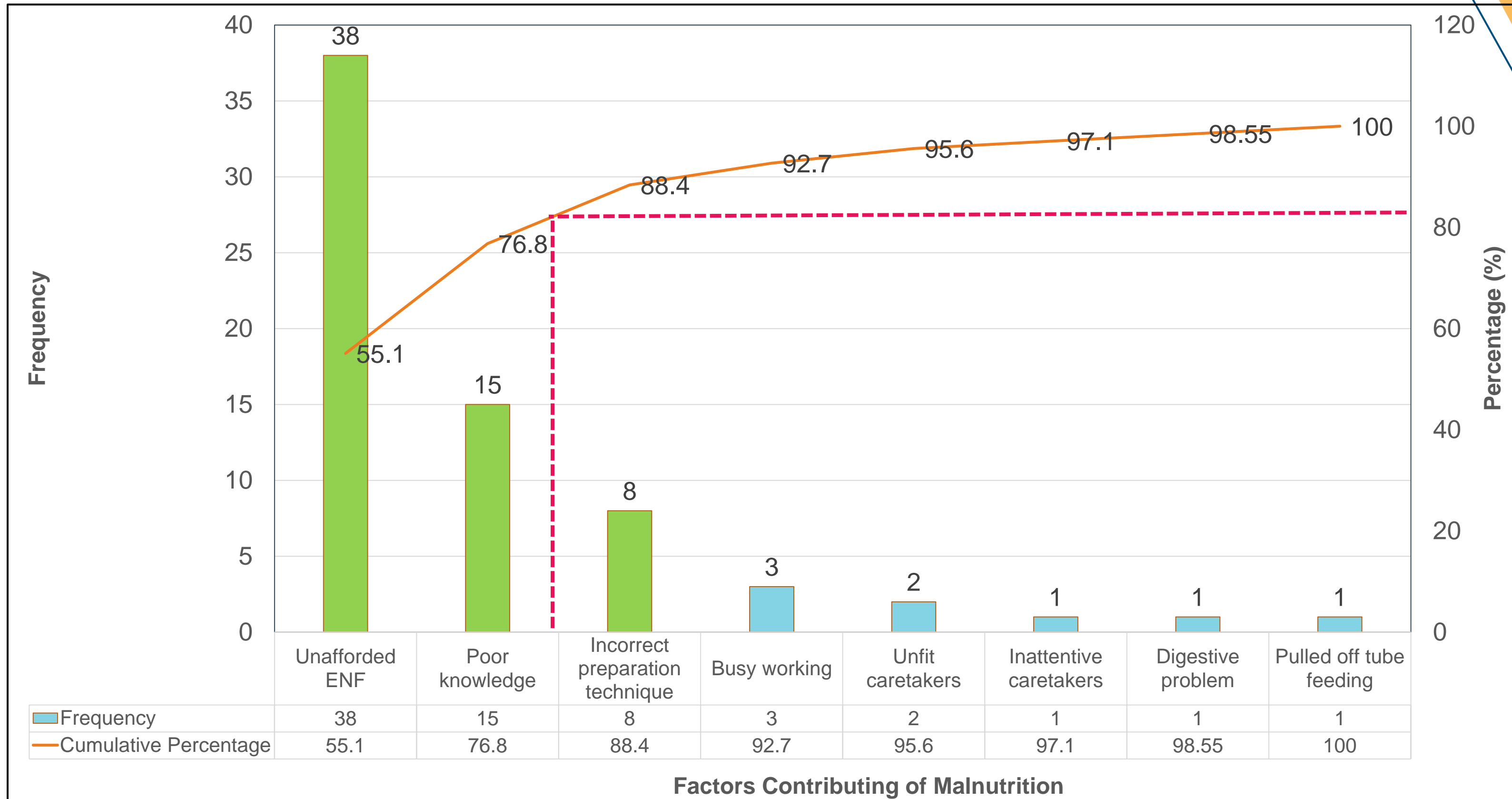
Malnutrition among bedridden patient on enteral feeding in domiciliary services in Perlis 2022 (n=101)



ACHIEVABLE BENEFIT NOT ACHIEVED (ABNA)



PERCENTAGE OF FACTORS CAUSING MALNUTRITION (n= 69)

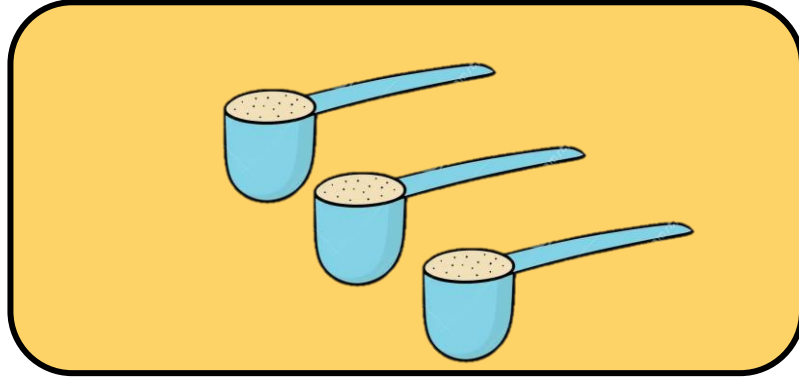


MODEL OF GOOD CARE

PROCESS	CRITERIA	STANDARD	VERIFICATION
ENF regime prescribed by Dietitian	Dietitian must provide ENF prescription regime to caretaker during first visit	100%	90%
ENF preparation method explained to caretaker	Training and education: <ul style="list-style-type: none"> - Explain using standardised protocol - Infographic provided with demonstration 	100% 100%	80% 80%
ENF compliances by caretaker	Observation on routine visit based on 3R: <ul style="list-style-type: none"> - Compliances to prepare ENF formula according to right regime prescribed - Compliances to administered ENF to patient using right technique with proper apparatus. - Compliances to provide ENF according to right frequency feeding 	100% 100% 100%	20% 35% 25%
Patient's nutritional status re-assessed	Dietitian conduct nutritional re-assessment one month after first prescription regime provided <ul style="list-style-type: none"> - Subjective Global Assessment (SGA) form - Anthropometry measurement 	100% 100%	75% 75%

ENF COMPLIANCE CRITERIA

1. QUANTITY



- Follow correct ENF scoop as stated by dietitian
- Determined by Total Energy Requirement (TER) and Total Protein Requirement (TPR)

2. FREQUENCY



- Administer ENF according to correct feeding time
- Regular regime for bolus feeding: 3 hourly, 6 to 7 times a day

3. PRECISE

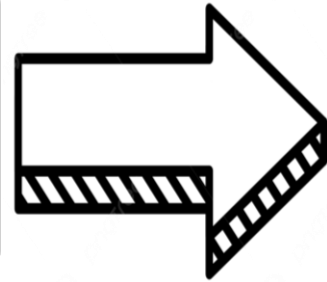
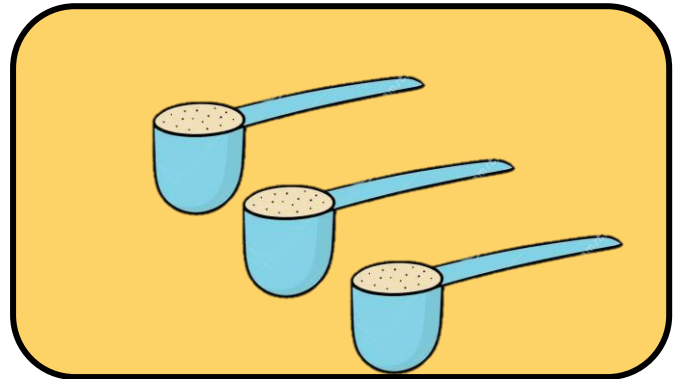


- Use correct ENF product as prescribed by dietitian in slip regime
- Osmolar formula often prescribed
- Complete and balance nutrition

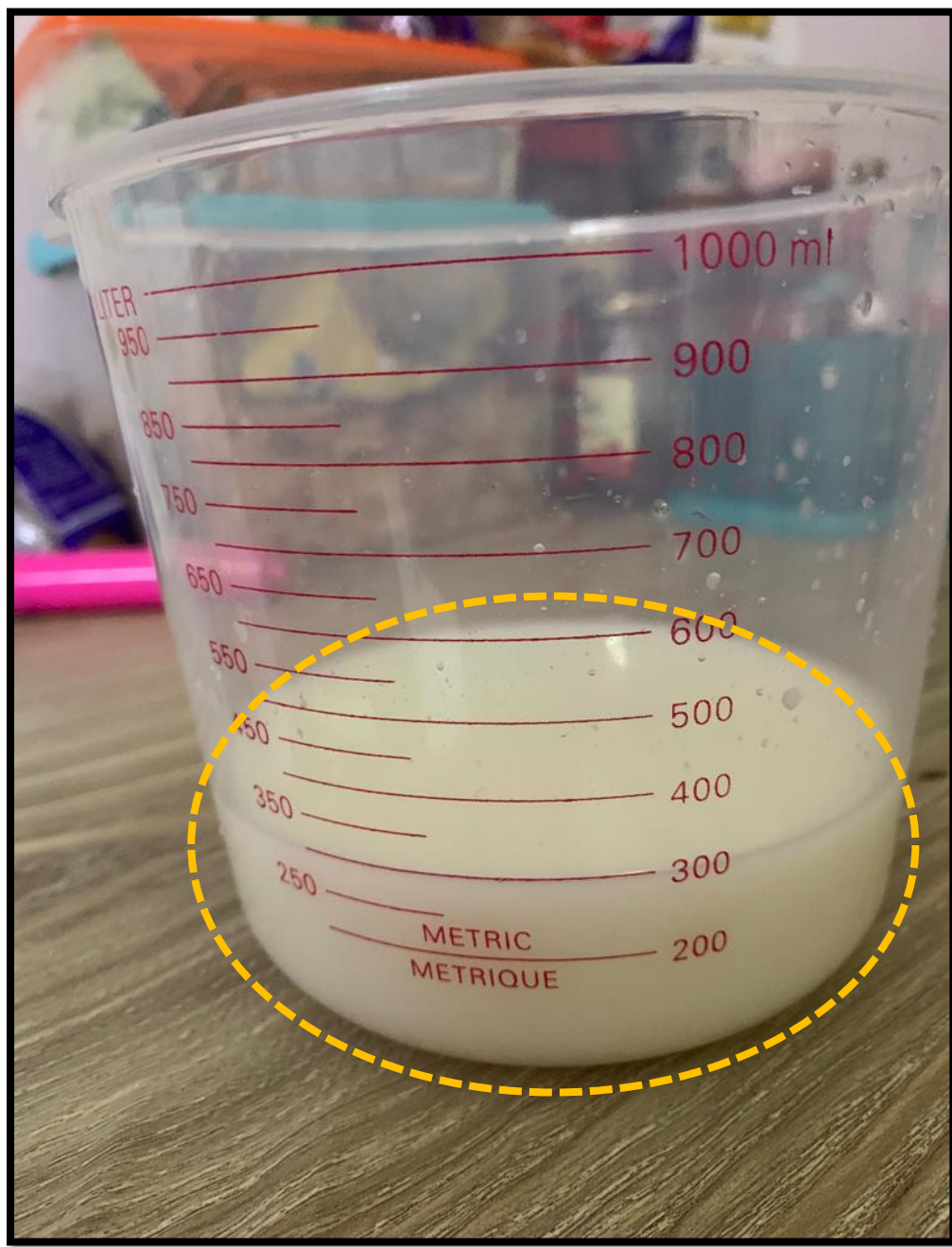
VERIFICATION STUDY (HOW ITS LOOK LIKE?)

ENF NON-COMPLIANCE ISSUE

QUANTITY ISSUE



DILUTED ENF



ENF NON-COMPLIANCES: Dilution Aspect

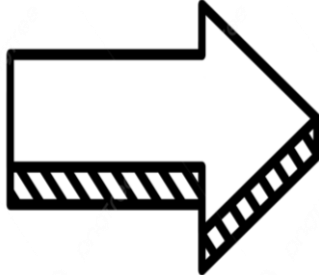
Regime Prescription:
5 scoops ENF + 250 ml water

Caretakers Practice:
Diluted ENF with 1 to 2 scoops per
300 ml water

Indicator:
1 scoop to 50ml water ratio = 1kcal/ml

ENF NON-COMPLIANCE ISSUE

PRECISE ISSUE



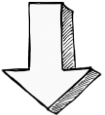
PRECISION



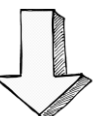
ENF NON-COMPLIANCES: Incorrect ENF Products



Caretakers does not follow prescribed ENF product:



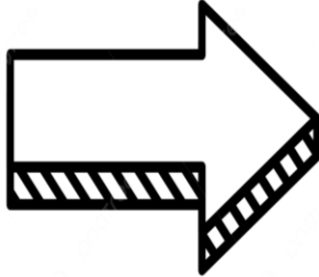
1. Blended cereal was added on ENF via feeding tube without proper guideline



2. Caretakers often purchased other ENF product despite actual product as in prescription

ENF NON-COMPLIANCE ISSUE

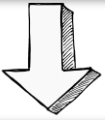
FREQUENCY ISSUE



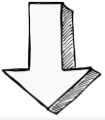
FEEDING TIME



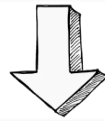
ENF NON-COMPLIANCES: Feeding Frequency



Regime Frequency:
3 hourly, 5 to 6 times a day



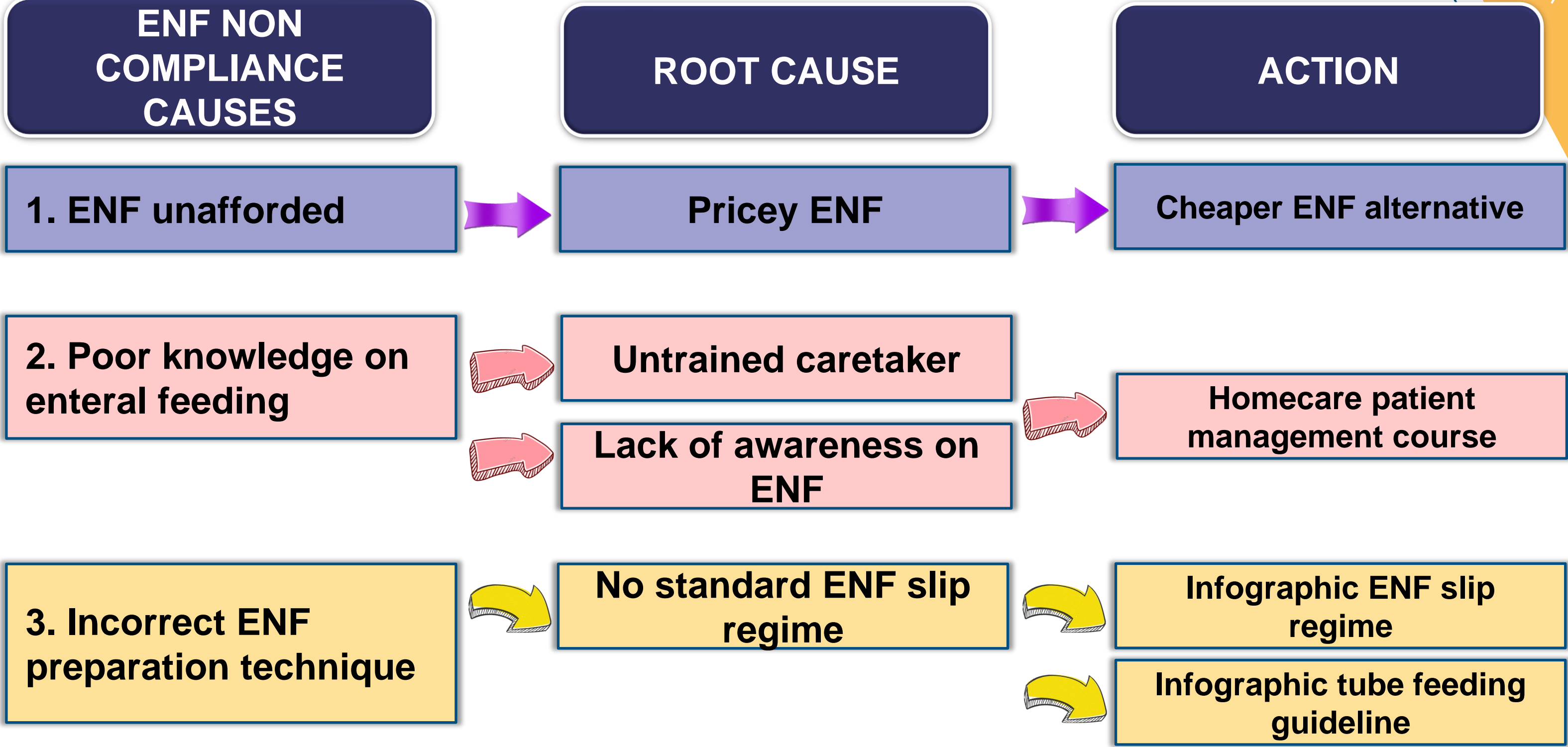
Caretakers Practice:
5 to 6 hourly, 3 times a day



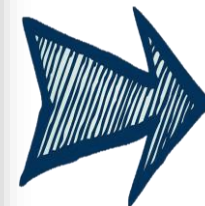
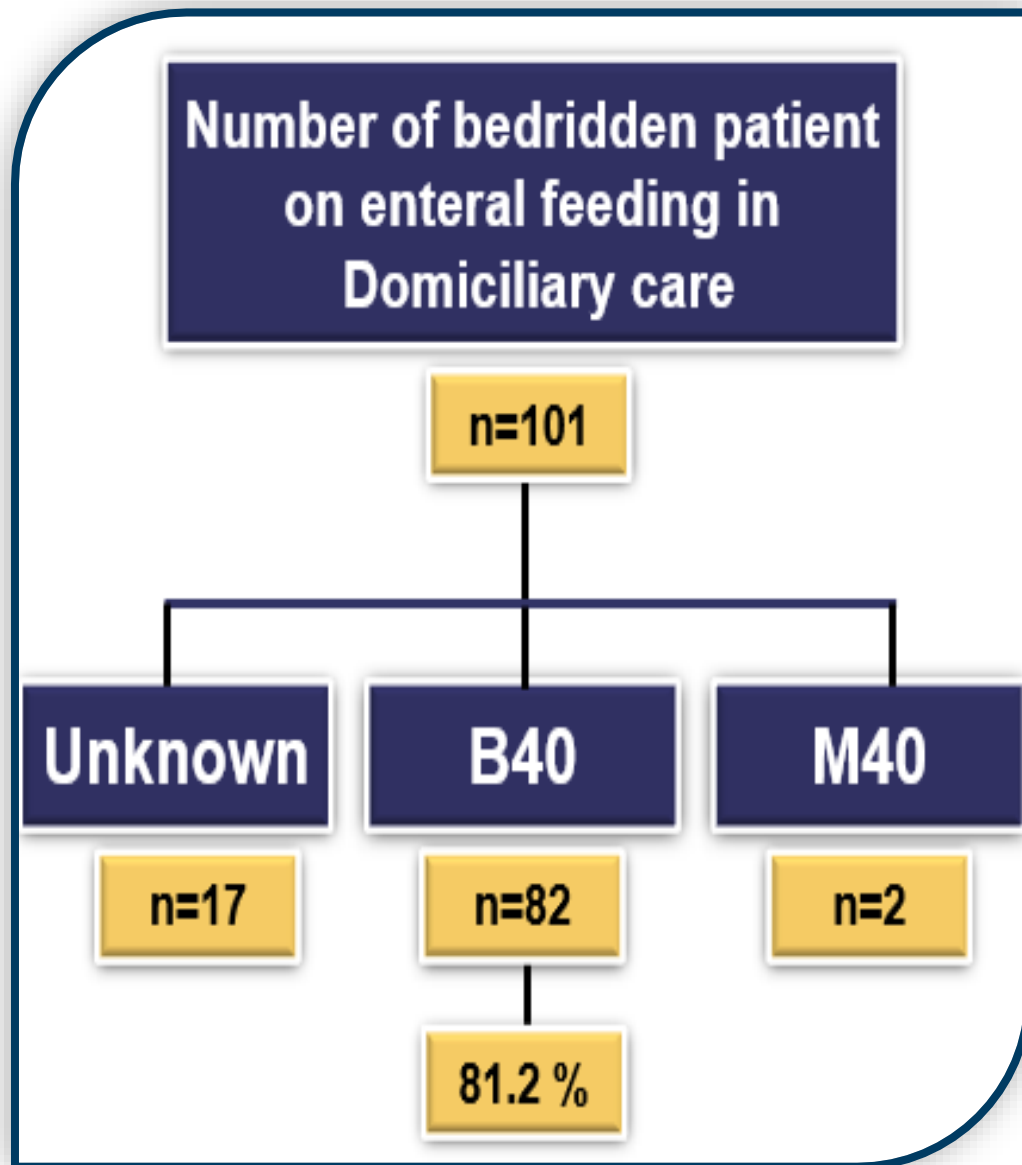
Indicator:
3 hourly, 5 to 6 times a day to achieve optimal nutrition



STRATEGIES FOR CHANGE
(CYCLE-1 INTERVENTION)

STRATEGIES FOR CHANGE CYCLE 1



STRATEGY 1: OFFERING CHEAPER ENF OPTION



CRITERIA	PRODUCT A	PRODUCT B
ENTERAL NUTRITIONAL FORMULA (ENF)		
RETAIL PRICE (800g/CAN) <i>*based on latest adjusted price of recommended retail price 2024</i>	RM 206.90/can	RM 152.00/can
DAILY COST	RM 103.50	RM 76.00
MONTHLY USAGE	Per serving : 8.8 g x 6 scoops = 52.8g Per day : 52.8 g x 6 to 7 times = 369.6~370g/ day Per month : 370 g x 30 days = 11100g~11.1kg/ month Total can : 11.1kg/ 0.8kg (can) = 13.8~14 can/ month	
MONTHLY COST	14 cans x RM206.90= RM 2896.60	14 cans x RM152.00= RM 2128.00






HIGH TOTAL PURCHASE

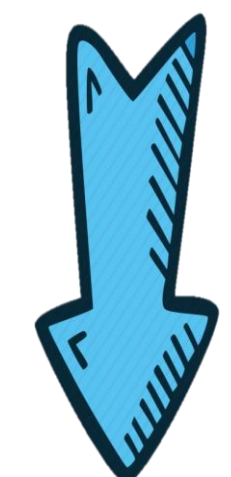
STRATEGY 1: OFFERING CHEAPER ENF OPTION

PRE INTERVENTION

POST INTERVENTION

CRITERIA	PRODUCT A	PRODUCT B	PRODUCT C
ENTERAL NUTRITIONAL FORMULA (ENF)			
RETAIL PRICE (800g/CAN) *based on latest adjusted price of recommended retail price 2024	RM 206.90/can	RM 152.00/can	RM 112.90/can
DAILY COST	RM 103.50	RM 76.00	RM 56.50
MONTHLY USAGE	Per serving : 8.8 g x 6 scoops = 52.8g Per day : 52.8 g x 6 to 7 times = 369.6~370g/ day Per month : 370 g x 30 days = 11100g~11.1kg/ month Total can : 11.1kg/ 0.8kg (can) = 13.8~14 can/ month		
MONTHLY COST	14 cans x RM206.90= RM 2896.60	14 cans x RM152.00= RM 2128.00	14 cans x RM112.90= RM 1580.60

PRODUCT A
RM 103.50



RM 47.00
Daily cost saving

PRODUCT C
RM 56.50

HIGH TOTAL PURCHASE

RM1316.00 MONTHLY COST SAVING THAN PREVIOUS PRODUCT

STRATEGY 2: IMPROVE KNOWLEDGE ON ENTERAL FEEDING

PATIENT HOMECARE MANAGEMENT COURSE



Homecare Management Course

To educate and improve awareness on patient homecare management among patient's family and caretakers



Nutritional Education

To enhance nutritional knowledge of Enteral Nutrition Formulas (ENF) prescription among caretakers



Simulation

To expose caretakers on correct enteral feeding management and procedure



Multidisciplinary Healthcare Education

Simulation on workout movement, wound dressing, daily hygiene care and emotional care of caretakers and patients

STRATEGY 3: ENF SLIP REGIME STANDARDIZATION

PRE-INTERVENTION

11.6% MALNUTRITION DUE TO INCORRECT
PREPARATION TECHNIQUE

CARER DID NOT UNDERSTAND ON CORRECT
ENF PREPARATION METHOD

- DIETITIAN ONLY VERBALLY EXPLAINED ON PREPARATION TECHNIQUE
- CURRENT ENF SLIP REGIME CONSIST GUIDELINE OF ENF DOSAGE, FREQUENCY AND PRODUCT WITHOUT VISUAL CUES FOR BETTER INSIGHT
- NO INTOLERANCE SYMPTOMS PRECAUTION MENTIONED

BANCUHAN SUSU PESAKIT

Nama formula susu: Enaura Plus
Jumlah/isipadu : 250ml - 300ml [1kcal/ml]
Kekerapan Sehari : 3 jam / besil [6am, 9am, 12pm, 3pm, 6p, 9pm]

PERALATAN YANG DIPERLUKAN:

- Picagari (syringe) 10 ml/ 50 ml.
- Cairan susu yang diperlukan.
- Cawan sukatan.
- Air suam.

CARA PEMBERIAN

1. Dudukkan pesakit dalam kedudukan tegak 90 darjah
2. Sambungkan picagari 10 ml ke tiub
3. Sedut keluar kandungan perut pesakit bagi memastikan tiub berada di dalam perut
4. Jangan beri makanan sekiranya kandungan perut disedut melebihi 100 ml
5. Keluarkan picagari 10 ml tadi, dan sambungkan dengan picagari 50 ml tanpa piston.
6. Lipat kan tiub bagi mengelakkan udara masuk ke perut.
7. Pegang picagari setinggi paras dahi pesakit
8. Tuangkan susu dan lepaskan lipatan dan benarkan aliran makanan ke dalam perut.
9. Pastikan picagari tidak kosong untuk mengelakkan udara masuk yang boleh menyebabkan kekembungan.
10. Bilas tiub nasogastrik bagi mengelakkan tersumbat dengan memasukkan air suam pada akhir feeding 30 ml.

REGIM SUSU PESAKIT:

① 5 scoop Enaura + 250 ml air ; setiap 2 jam
TE3 : 1200kcal/day
TPT : 54g - 60g/day
TFT : 1500ml + 250ml = 1800ml/day

② Perhatikan jika terdapat sebarang gejala berkaitan susu polengkap, sila maklum pihak Demisitar

Disediakan oleh:

NOORHAYATI MOHAMAD YUSOF
DIEFITIAN MAHSUD/2000256
Pegawai Dietetik UAT
Wing Kesihatan Kg. Gial

NOTA PENJAGAAN DIET KKM

STRATEGY 3: ENF SLIP REGIME STANDARDIZATION

POST INTERVENTION

Panduan

Pemakanan Melalui Tiub di Rumah

1 Sebelum

INSTRUCTION SET CATEGORIES



- Cuci tangan dan peralatan sehingga bersih.
- Bancuh ONS mengikut saranan daripada Pegawai Dietetik.
- Tegakkan pesakit dalam kedudukan 45 darjah atau letakkan 3 bantal dibelakang pesakit.

2 Semasa



- Picagari perlu berada pada kedudukan setara kepala pesakit.
- Mulakan dengan mengalirkan sekurang-kurangnya 30 ml air kosong.
- Biarkan ONS mengalir perlahan-lahan dengan sendiri.

3 Selepas

PICTORIAL STEPS FOR BEST REFERENCE



- Akhir sekali, sudahi pemberian ONS dengan 30 ml air kosong.
- Biarkan pesakit berada dalam kedudukan 45 darjah selama 30 minit.
- Cuci tangan dan peralatan dengan bersih.

*ONS: Susu Pelengkap Bernutrisi

Disediakan oleh:
Unit Dietetik
Pejabat Kesihatan Daerah Kangar

Panduan

Pemakanan Melalui Tiub di Rumah

PRODUCT MENTIONED FOR EASY PURCHASE

1 PENYEDIAAN



- Produk susu:.....
- Pastikan susu pelengkap bernutrisi (ONS) adalah betul.
 - Kepekatan 1 ceduk = 50ml air
- Bancuhan asas: 6 skop + 300ml air

Sila hubungi Klinik Kesihatan berhampiran sekiranya berlaku tanda-tanda seperti:

2 SUHU AIR



- Pastikan air suam digunakan (+- 30 darjah celsius)

3 CARA BANCuhan



EXPLICIT STANDARD FEEDING REGIME

- Pastikan air dimasukkan terlebih dahulu.
- Kemudian masukan ONS.

4 PEMBERIAN FORMULA



- Pastikan peralatan yang digunakan adalah betul dan bersih.

5 POSISI PESAKIT



- Pastikan pesakit dalam keadaan separa baring dalam ketinggian +- 45 darjah.
- Letakan bantal atau sokongan dibelakang badan pesakit.
- **Jangan** beri ONS dalam keadaan baring.

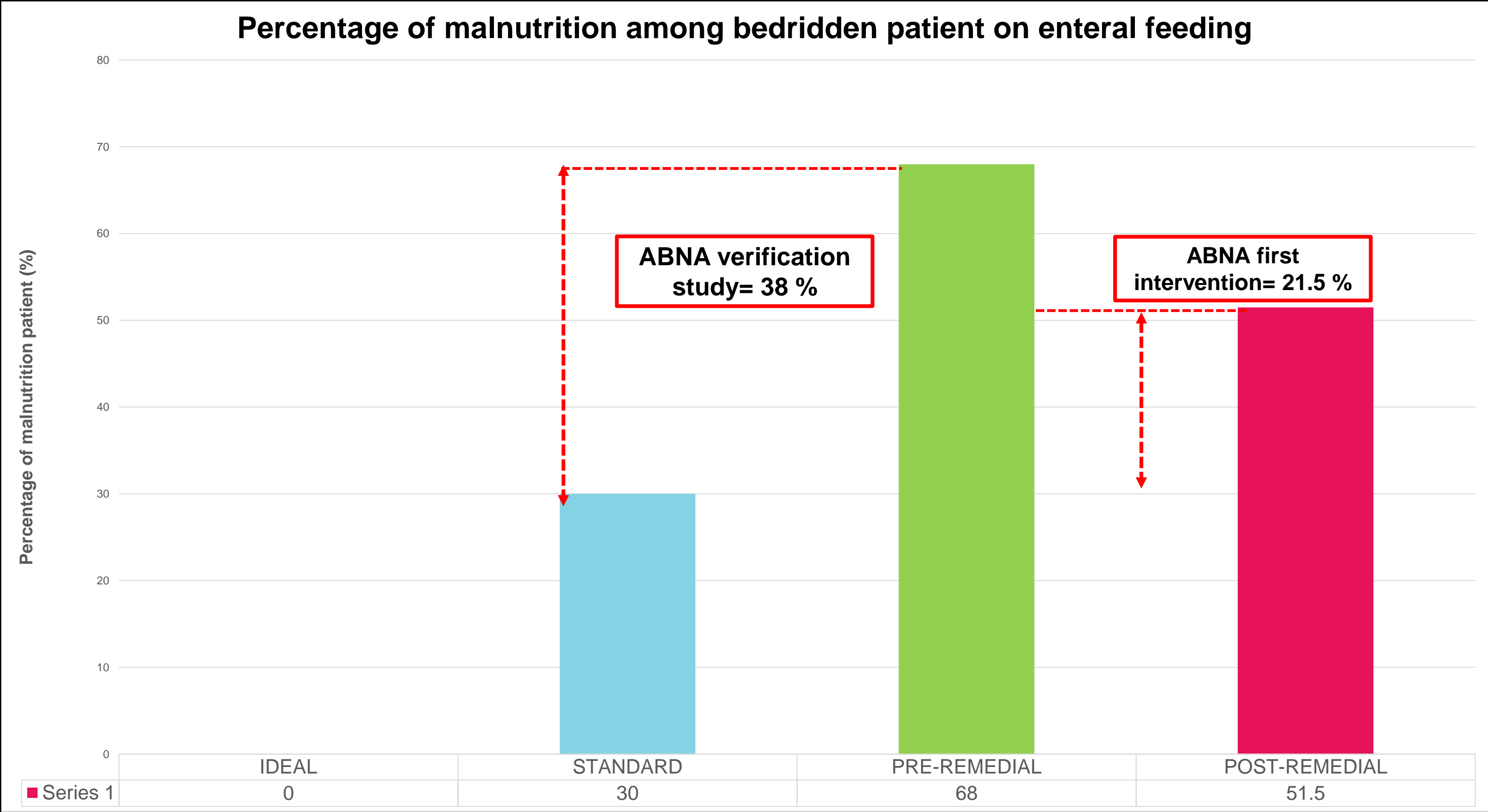
- Cirit-birit melebihi 3 kali sehari.
- Sembelit melebihi 5 hari.
- Muntah berlarutan.
- Kulit sekeliling stoma bengkak/ luka.
- Kencing yang sedikit, berwarna kuning pekat dan berbau.
- Tiub tercabut.
- Susu tidak mengalir atau terlalu perlahan.
- Terdapat lelehan cecair di sekeliling abdomen (tersumbat).
- Demam panas / kelesuan.

Masa pemberian susu (tiap 3 jam):
7am 10am 1pm 4pm 7pm 10pm

FEEDING TIME PRECISELY STATED

EFFECT OF CHANGE

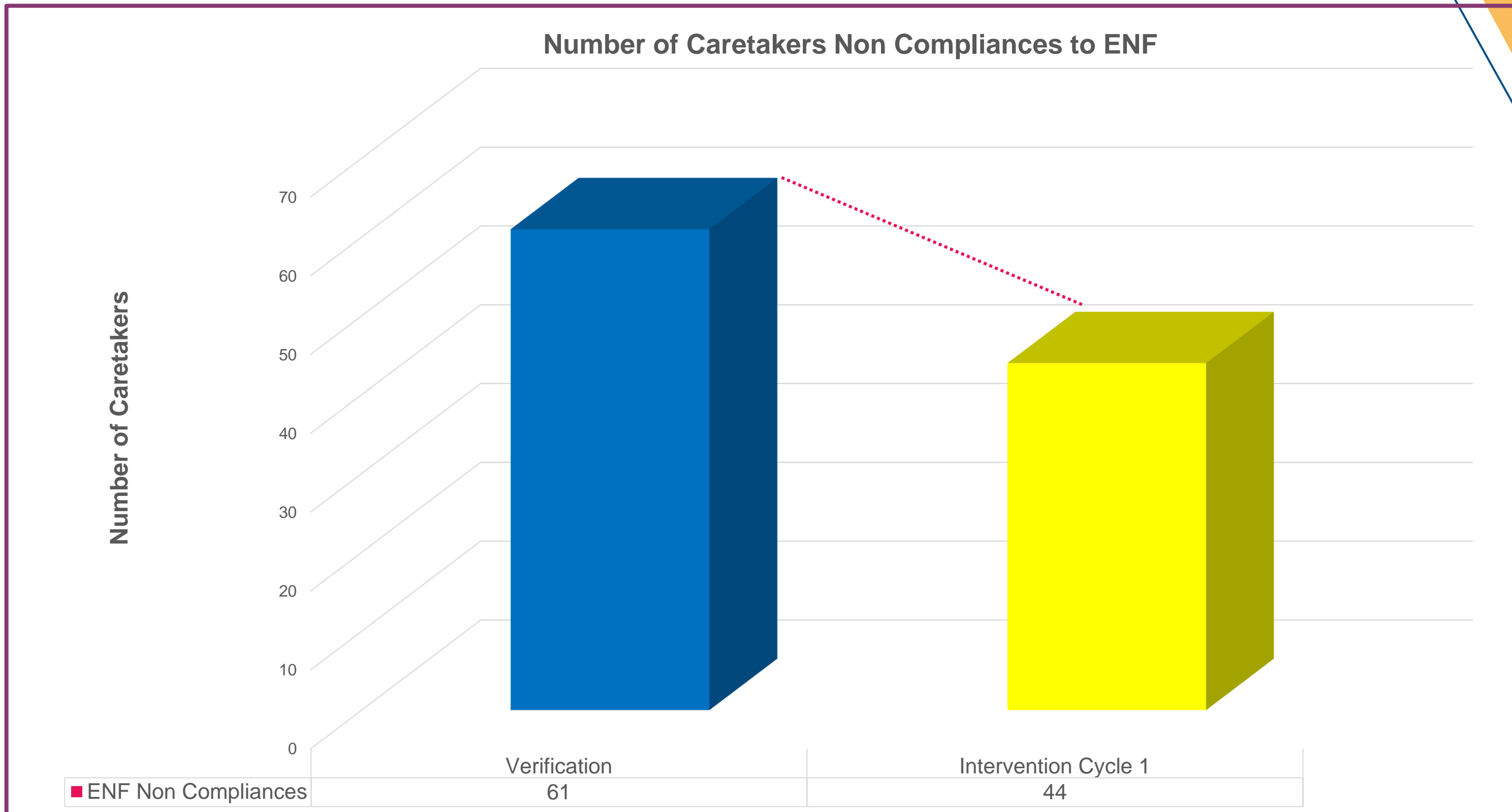
ACHIEVABLE BENEFIT NOT ACHIEVED (ABNA)



MODEL OF GOOD CARE

PROCESS	CRITERIA	STANDARD	VERIFICATION	INTERVENTION 1
ENF regime prescribed by Dietitian	Dietitian must provide ENF prescription regime to caretaker during first visit	100%	90%	100%
ENF preparation method explained to caretaker	Training and education: <ul style="list-style-type: none"> - Explain using standardised protocol - Infographic provided with demonstration 	100% 100%	80% 80%	100% 100%
ENF compliances by caretaker	Observation on routine visit based on 3R: <ul style="list-style-type: none"> - Compliances to prepare ENF formula according to <i>right regime</i> prescribed - Compliances to administered ENF to patient using <i>right technique</i> with proper apparatus. - Compliances to provide ENF according to <i>right frequency</i> feeding 	100% 100% 100%	20% 35% 25%	44% 60% 48%
Patient's nutritional status re-assessed	Dietitian conduct nutritional re-assessment one month after first prescription regime provided <ul style="list-style-type: none"> - Subjective Global Assessment (SGA) form - Anthropometry measurement 	100% 100%	75% 75%	100% 100%

EFFECT OF ENF NON-COMPLIANCE AFTER CYCLE 1



NUMBER OF CARETAKERS ACCORDING TO CONTRIBUTING FACTORS OF ENF NON-COMPLIANCES (VERIFICATION vs CYCLE-1 INTERVENTION)

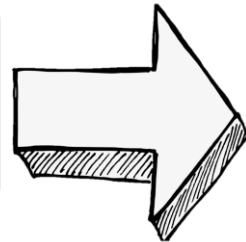


WHY WE STILL FAIL POST CYCLE 1?

ISSUES

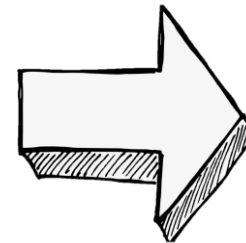
EXPLANATION

PRICEY ENF



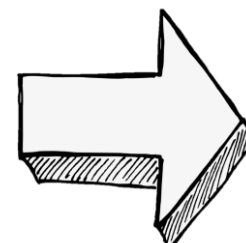
Caretakers unafforded to buy even lower cost ENF offered (63.6%)

**HOMECARE
MANAGEMENT
COURSE
LIMITATION**



Out of 69 caretakers, only 23 caretakers attend the course conducted at Wisma Persekutuan Negeri due to logistic issue

**ACCESSIBILITY
OF ENF SLIP
REGIME**



ENF slip regime provided often misplaced, impaired or lost

**ADDITIONAL STRATEGIES
FOR CHANGE
(CYCLE-2 INTERVENTION)**

Major Issue

CONTRIBUTING FACTORS ANALYSIS

AIM

To increase compliance of carer in providing enteral feeding to bedridden patients in domiciliary care

PLACE

Selected home of bedridden patient under domiciliary care in Perlis

DURATION

December 2023 to Feb 2024 ~ 3 months

SAMPLE

28 caretakers of malnourished bedridden patients on enteral feeding who are unafforded of buying nutritional product due to pricey ENF

STUDY INSTRUMENTS

- Domiciliary Care Report Card Pd004(b)
- Subjective Global Assessment (SGA) form
- Knowledge Attitude Practice (KAP) questionnaire



EVERY PROBLEM IS AN
OPPORTUNITY FOR A
SOLUTION

ENF ALTERNATIVE

CoNGEE: Complete Nutrition Gastro Ease & Elate

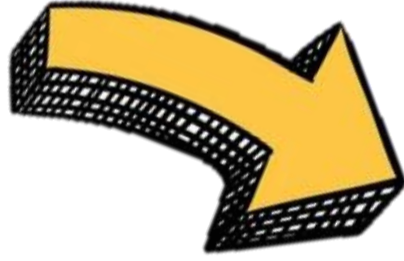
01

**ENOUGH
CALORIE AND
PROTEIN**

02

AFFORDABLE

INNOVATION INITIATIVE TO REPLACE PRICEY ENF



03

ACCESSIBILITY



04

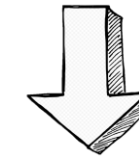
FOOD SAFETY



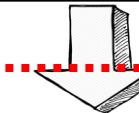
INGREDIENT	CALORIE (kcal)	CARBO (g)	PROTIEN (g)	FAT (g)	CALCIUM (mg)	FERUM (mg)	SODIUM (mg)	POTASSIUM (mg)	VIT C (mg)	PHOSPHATE (mg)
RICE	480	108.6	9.75	0.68	15	1.95	304	42.8	0.3	162
CHICKEN	198	2.5	24.1	10.2	10	1.2	55	410	3.5	269
VEGETABLE	25	3.1	1.8	0.6	119	11	10	406	76.6	54
OIL	324	0.0	0.0	36	0.6	0.0	3	0.0	0.0	0.0
FULL CREAM MILK (12 tablespoon = 84g) *2 tbs each feeding	428	32	20.5	24.2	722.4	0.18	240	588	4.8	605

Reference: Atlas Makanan; Saiz Pertukaran dan Porsi Edisi Ketiga, 2015

CoNGEE Nutritional Content

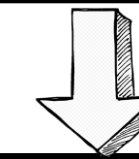


MACRONUTRIENT
DISTRIBUTION:



Total Calorie:
1453 Kcal/day

Carbohydrate: 146.2 g
Protein: 56.2 g
Fat: 71.7 g

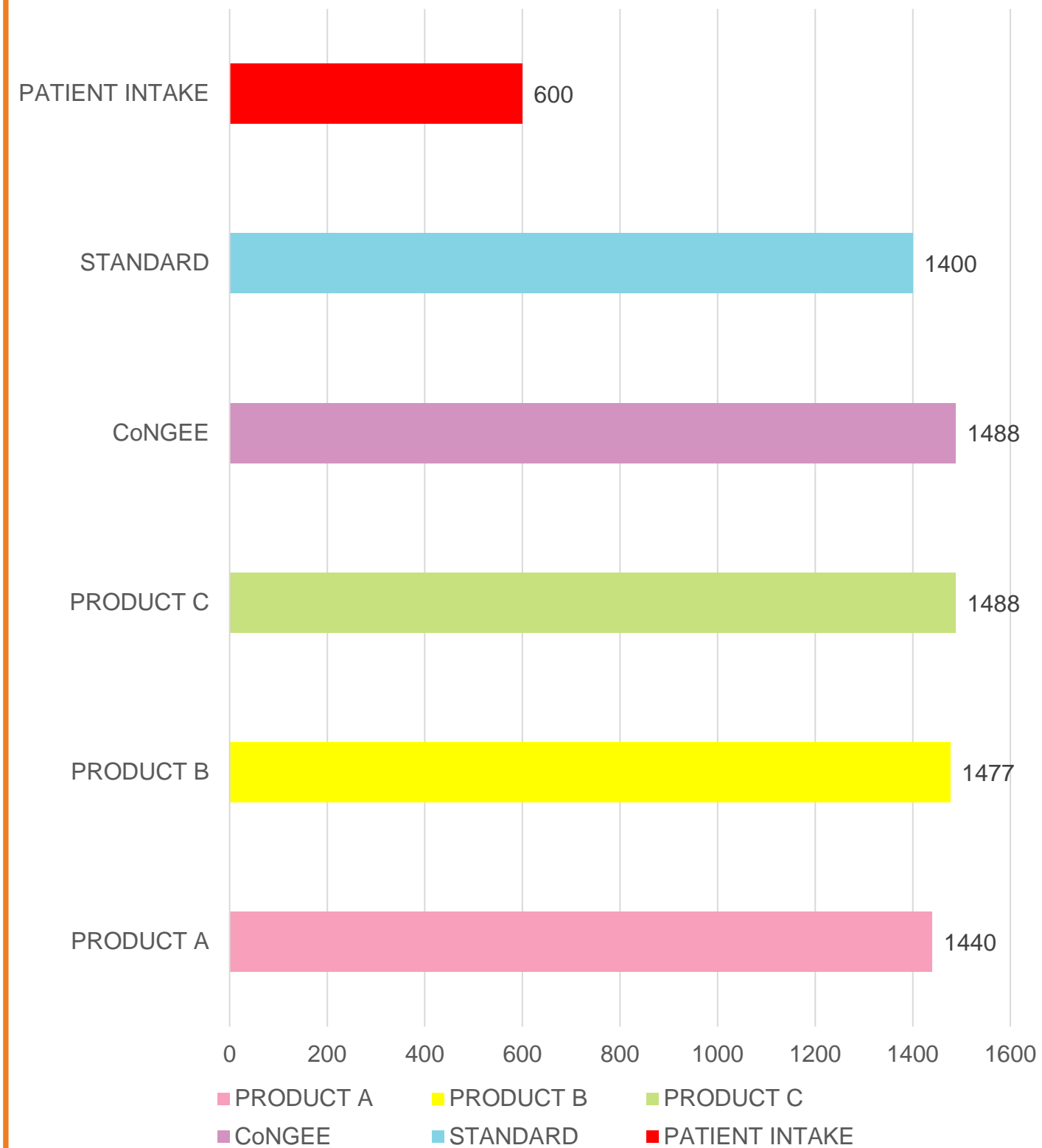


Nutritional requirement by
bedridden patient:

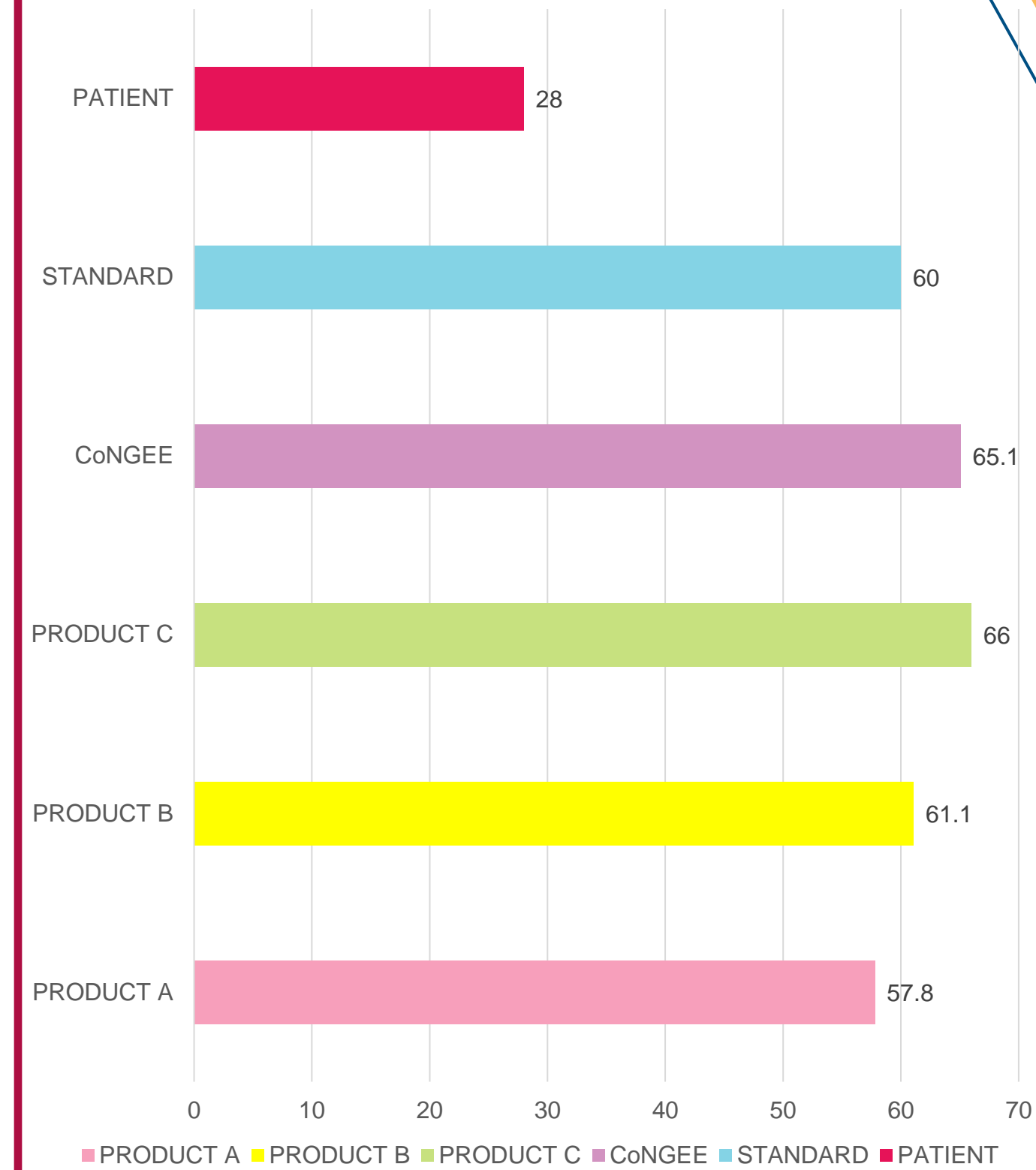
TER: 1110 – 1700kcal/day
TPR: 1.5-2.0 g/kg BW

ENOUGH CALORIE AND PROTEIN

Calorie Comparison ENF vs CoNGEE

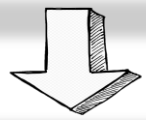


Protein Comparison ENF vs CoNGEE



ENOUGH CALORIE AND PROTEIN

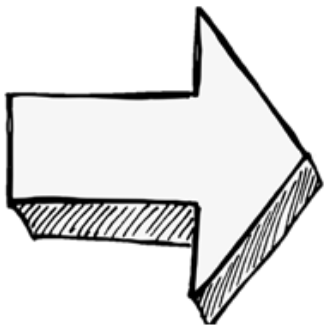
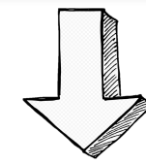
ISSUE



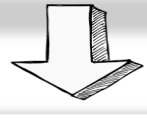
CoNGEE Preparation Not Standard



Different Cooking Utensils Used



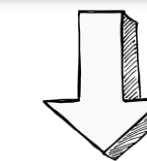
ACTION



CoNGEE Apparatus Kit Provided



Cooking Apparatus Makes Standard For Each Patient



MEASURING CUP WITH LABEL MEASUREMENT



STANDARDIZED PLASTIC SPOON

COSTING CARD OF CoNGEE PRODUCTION

KAD KOS BLENDERIZED TUBE FEEDING (BTF)

For Office Use Only

LAPORAN KOS

TUJUAN: _____

NOMBOR SIRI: _____

TEMPOH: _____

MAKLUMAT HIDANGAN

Makanan Bubur campuran kisarMenu Pemakanan seharianPenghasilan 1 hidangan (1 L)Saiz porsi 200 ml per sajian

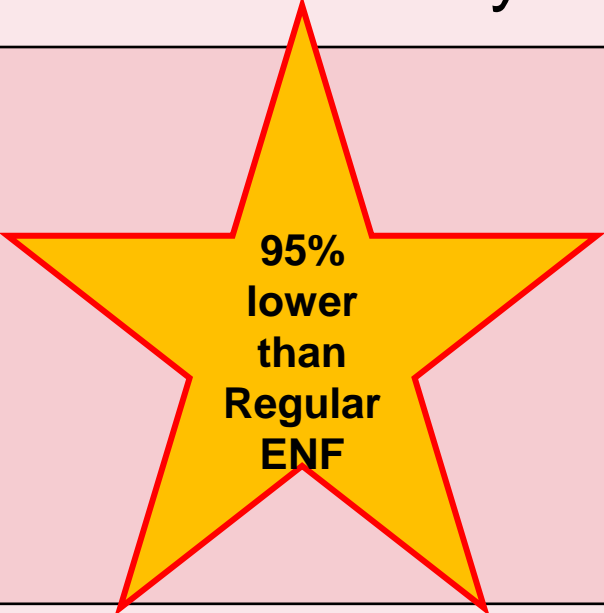
**ENF product cost:
RM 33.00 – 39.00/day
(88.4% costly than CoNGEE)**

RM14.90

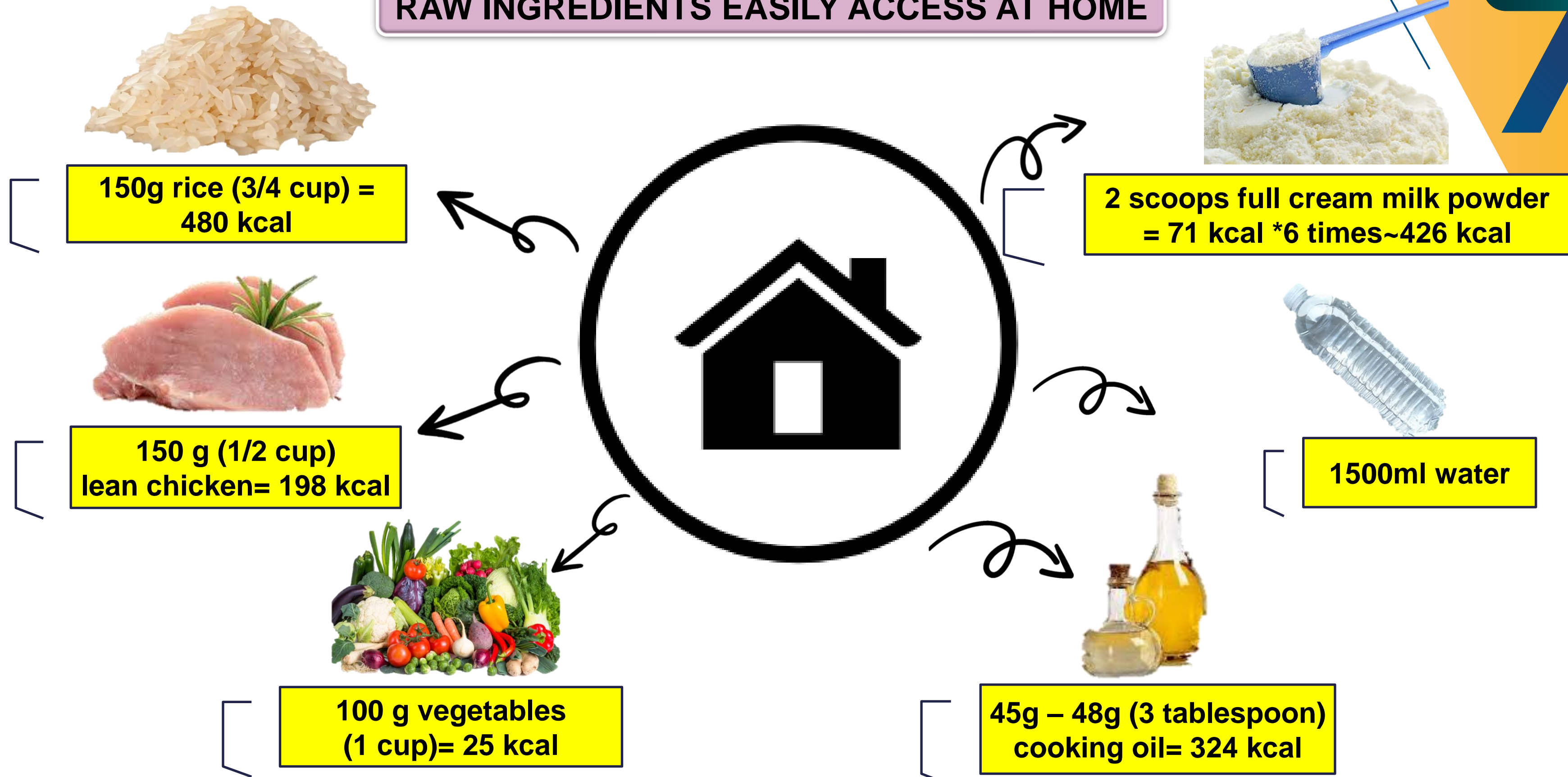
Bahan	Saiz Porsi	Unit	Harga	Kuantiti per uni	Kos item
Beras	10	kg	\$ 26.00	150 g	\$ 0.39
Ayam	1	kg	\$ 9.40	150 g	\$ 1.41
Sawi	1	kg	\$ 5.00	100 g	\$ 0.50
Minyak masak	1	kg	\$ 2.50	45 g	\$ 0.11
Air	1	L	\$ -	1500 ml	\$ -
Susu tepung penuh krim	0.9	kg	\$ 22.60	14g x 6	\$ 2.10
Total			\$ 65.50	\$ -	\$ 4.51

Total RM14.90 (50% lebih jimat berbanding susu pelengkap)NOTES: Harga susu pelengkap (ONS) bagi sehari penggunaan~ RM 32.45/sehari

FINANCIAL BURDEN LESSEN

CRITERIA	PRODUCT A	PRODUCT B	PRODUCT C	CoNGEE
RETAIL PRICE (800g/CAN) <i>*based on latest adjusted price of recommended retail price 2023</i>	RM 112.90/can	RM 206.90/can	RM 152.00/can	NA
DAILY COST	RM 47.10	RM 86.20	RM 63.00	RM 4.50/day
MONTHLY USAGE	Per serving : 8.8 g x 6 scoops = 52.8g Per day : 52.8 g x 6 to 7 times = 369.6~370g/ day Per month : 370 g x 30 days = 11100g~11.1kg/ month Total can : 11.1kg/ 0.85kg (can) = 13 can/ month			 95% lower than Regular ENF
MONTHLY COST	13 cans x RM112.90= RM1467.70	13 cans x RM206.90= RM2689.70	13 cans x RM152.00= RM1976.00	RM4.50 x 30 days = RM135.00

RAW INGREDIENTS EASILY ACCESS AT HOME



STANDARD RECIPE OF CONGEE EXPLAINED TO CARETAKERS

RESEPI
CONGEE

Saiz Hidangan : 6 hidangan
Bekalan Tenaga: 1453 kcal
Karbohidrat: 146.2 g
Protin: 56.2 g
Lemak: 71.7 g

Bahan-bahan

-  3/4 cawan beras
480 kcal
-  1/2 cawan isi ayam
198 kcal
-  3 sudu besar minyak masak
324 kcal
-  1 cawan sayur
25 kcal
-  1.5 Liter Air
0 kcal
-  2 sudu besar susu penuh krim
71 kcal
(ditambah bagi 6 kali pemberian
CONGEE, 426 kcal)

Rujukan: NutritionistPro v7.9

PENYEDIAAN
CONGEE

1. Basuh beras dan toskan.
2. Potong isi ayam dalam bentuk dadu.
3. Potong sayur secara halus.
4. Masukkan beras, isi ayam dan sayur yang telah dipotong ke dalam periuk.
5. Masukkan juga 3 sudu besar minyak masak serta 1.5 L air.
6. Rebus kesemua bahan sehingga bertukar menjadi bubur.
7. Untuk 1 kali hidangan makan, ambil sebanyak 1 cawan (kopi) bubur bersama 1 cawan (kopi) air dan kisar sehingga lumat.
8. Pastikan tekstur tidak terlalu pekat, tiada ketulan dan tidak terlalu cair.
9. Tapis bubur kisar bagi membuang bahan ampai yang tidak hancur.
10. Sediakan picagari kosong yang bersih.
11. Tuang bubur kisar ke dalam picagari pada ketinggian dada.
12. Pastikan bubur mengalir dengan lancar.
13. Bilas tiub menggunakan 30 - 50 ml air.

SENARAI SEMAK
CONGEE

	Minggu 2	Minggu 4	Minggu 6	Minggu 8	Minggu 10	Minggu 12
1. Bahan yang tepat.						
2. Sukatan yang betul.						
3. Kebersihan bahan dan alatan.						
4. Suhu memasak optimal.						
5. Bubur dikisar halus.						
6. Bubur ditapis sempurna.						
7. Dimasukkan ke dalam tiub dengan betul.						
8. Diberi kepada pesakit tidak lebih 2 jam selepas dimasak.						
9. Penyimpanan dalam peti sejuk pada suhu 0°C - 4°C.						
10. Kebersihan tiub selepas pemberian bubur.						

Food safety
maintained by using:CoNGEE
Infographic LeafletStandard recipe
providedSenarai Semak
CoNGEE attached

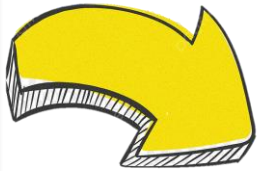
Food hygiene

Safe cooking
temperatureBest consume
hourSafe storage
temperature

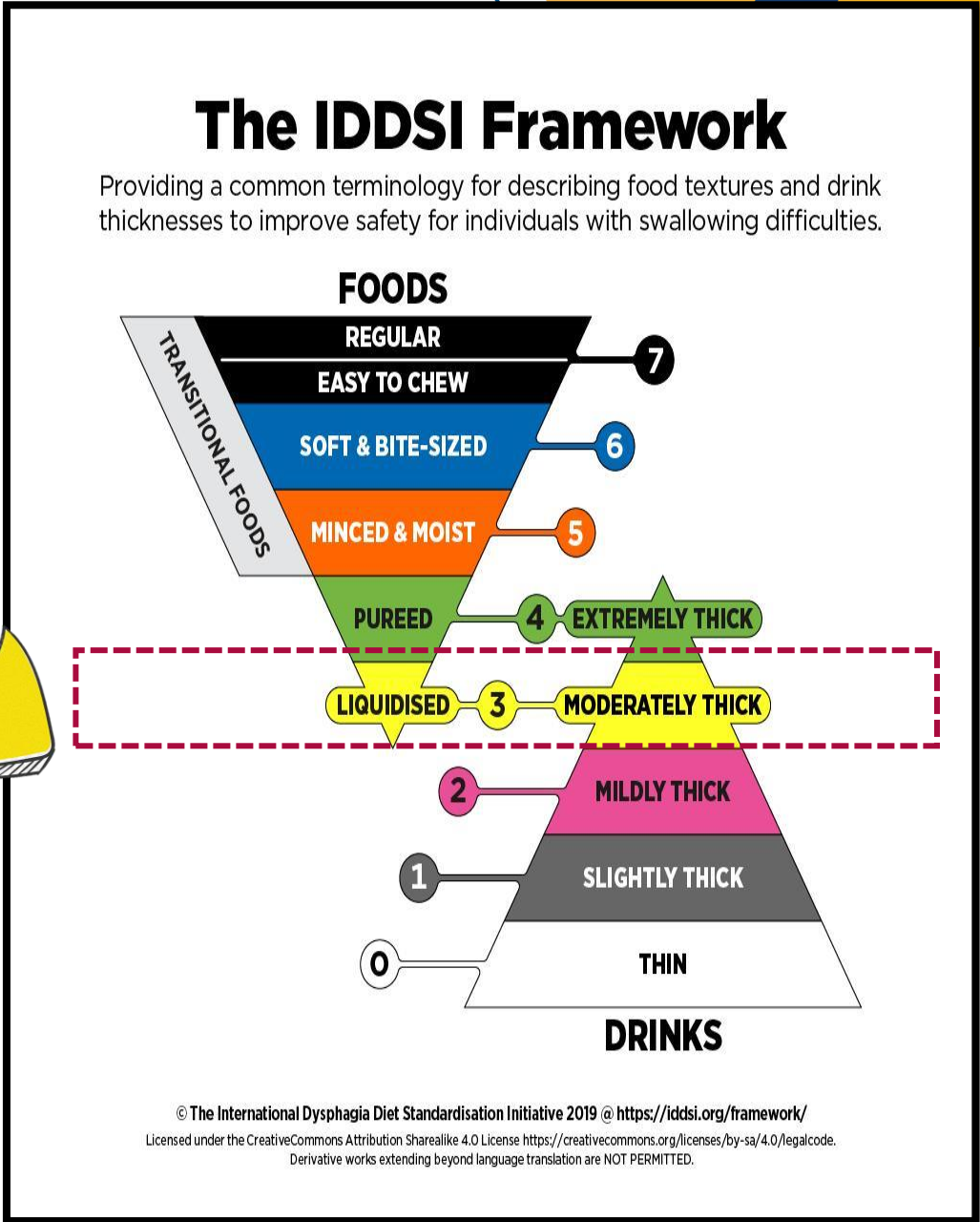
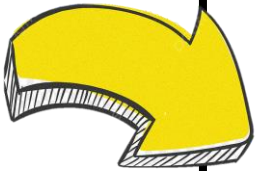
FOOD SAFETY

CoNGEE PRECAUTION STEP EMPHASIZED

Mix porridge blended with 1:3 ratio
[1 cup porridge + 3 cup water]



Strain blended porridge to remove
undissolved particles





POOR KNOWLEDGE AMONG CARETAKERS AND ACCESSIBILITY ISSUE OF ENF SLIP REGIME

QR scan code of enteral feeding guideline and preparation video explained to caretaker to resolve issues of:



1. Poor knowledge among caretakers on enteral feeding



2. Accessibility ENF slip regime



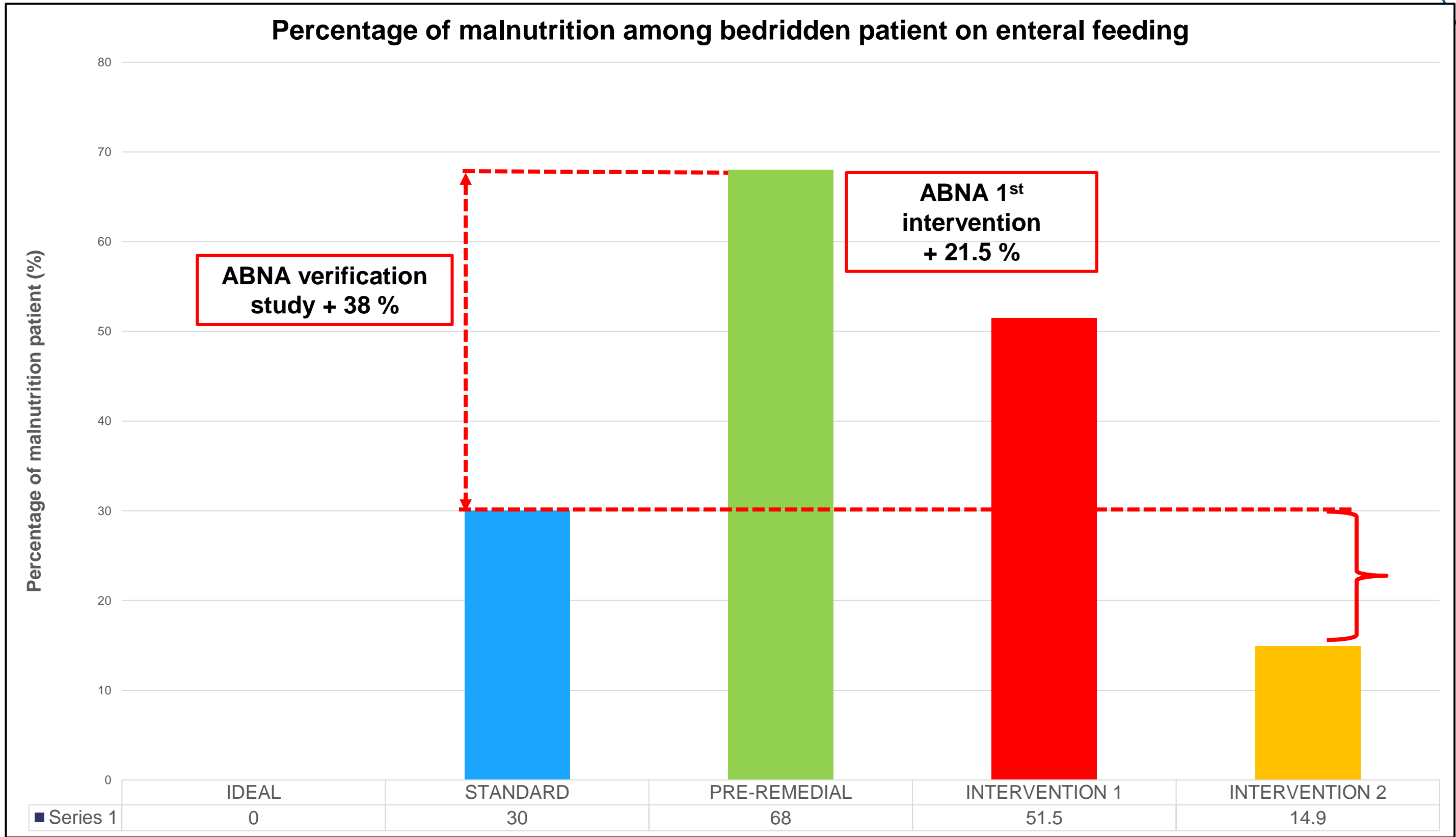
ENF Slip Regime Infographic



CoNGEE Recipe Infographic

EFFECT OF CHANGE

ACHIEVABLE BENEFIT NOT ACHIEVED (ABNA)

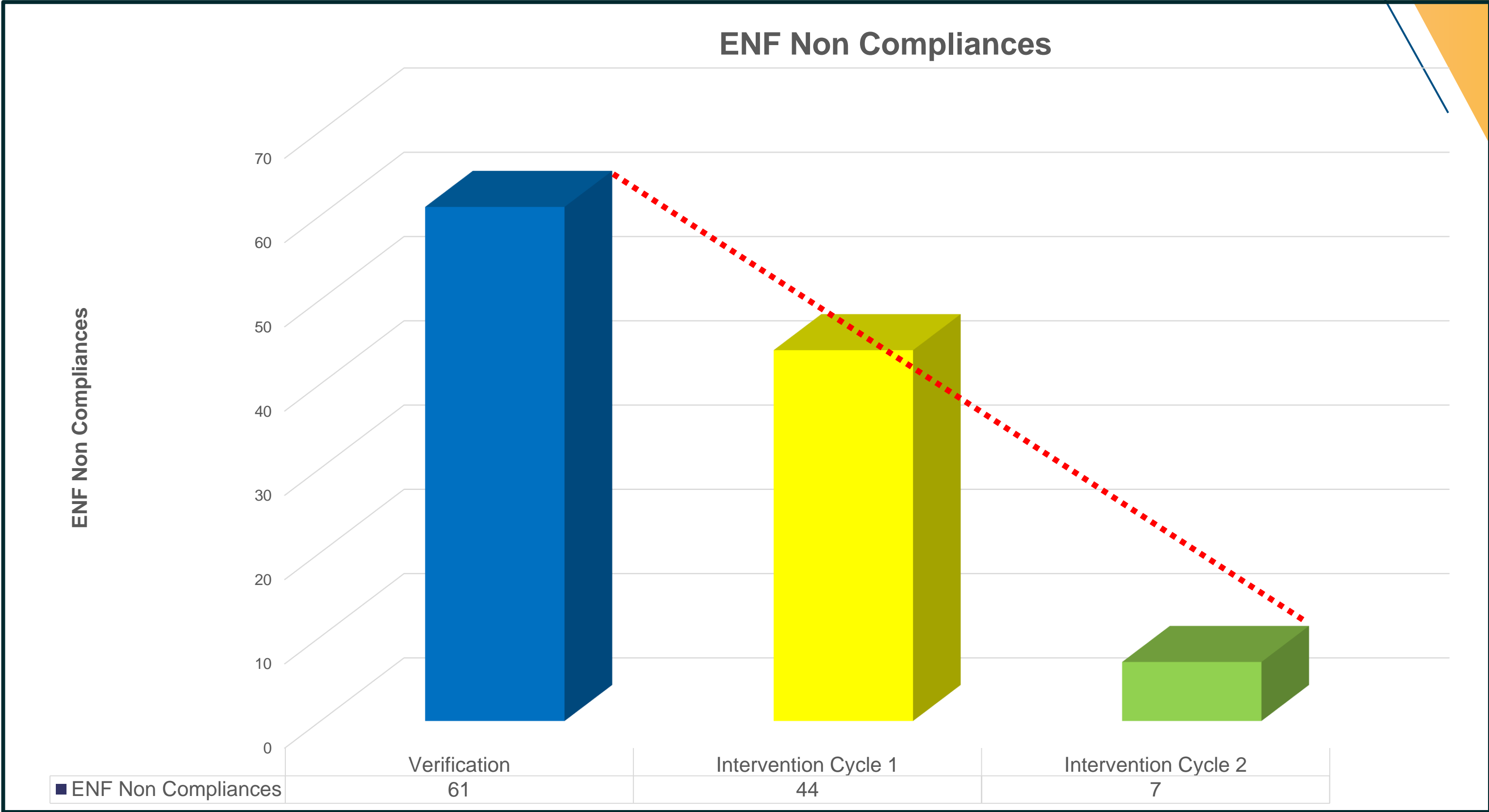


Standard of ≤ 30 was achieved post 2nd intervention

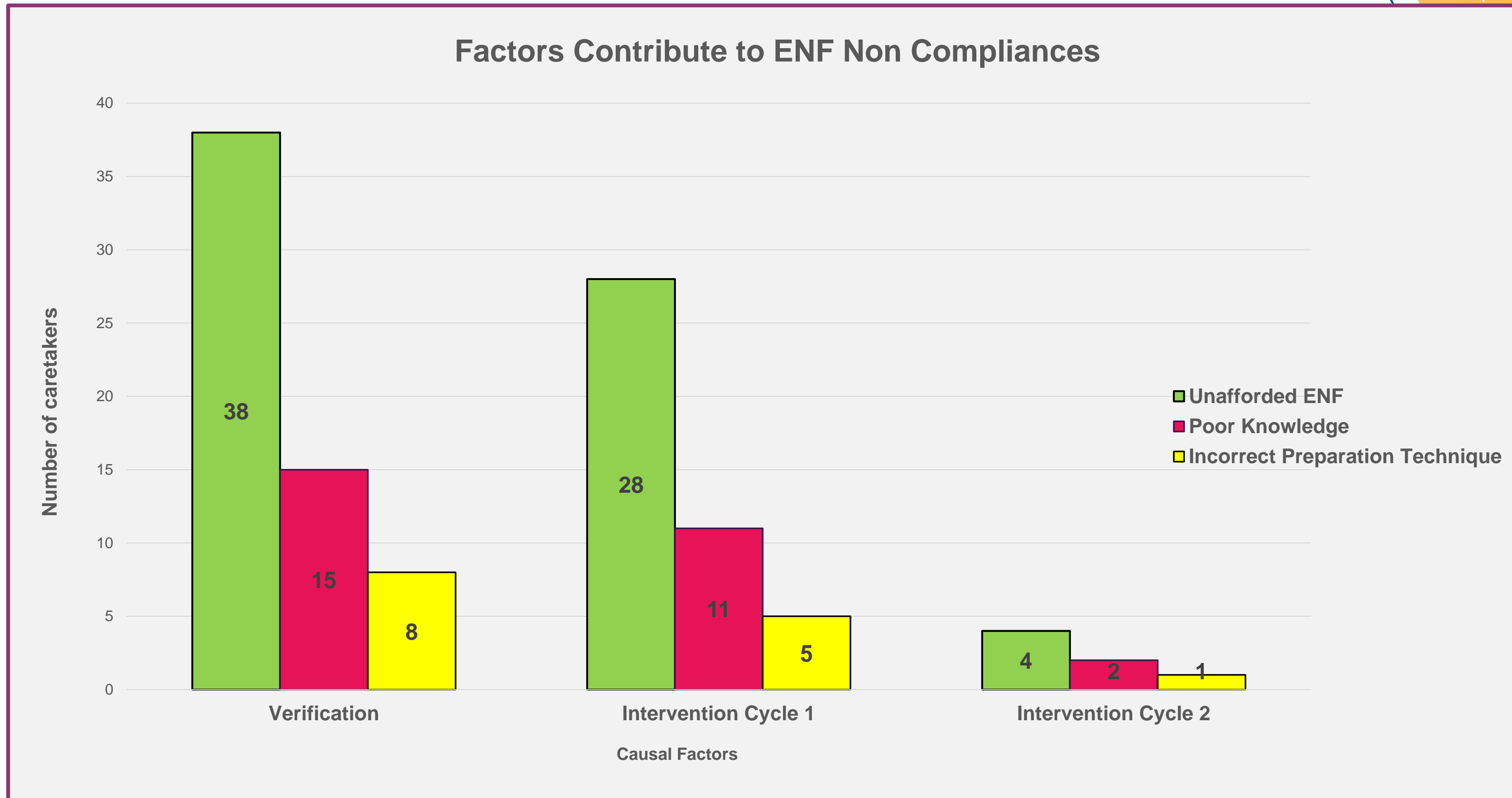
CoNGEE PREPARATION

PROCESS	CRITERIA	STANDARD	VERIFICATION	INTERVENTION 1	INTERVENTION 2
ENF regime prescribed by Dietitian	Dietitian must provide ENF prescription regime to caretaker during first visit	100%	90%	100%	100%
ENF preparation method explained to caretaker	Training and education: - Explain using standardised protocol - Infographic provided with demonstration	100% 100%	80% 80%	100% 100%	100% 100%
ENF compliances by caretaker	Observation on routine visit based on 3R: - Compliances to prepare ENF formula according to <i>right regime</i> prescribed - Compliances to administered ENF to patient using <i>right technique</i> with proper apparatus. - Compliances to provide ENF according to <i>right frequency</i> feeding	100% 100% 100%	20% 35% 25%	44% 60% 48%	88% 84% 82%
Patient's nutritional status re-assessed	Dietitian conduct nutritional re-assessment one month after first prescription regime provided - Subjective Global Assessment (SGA) form - Anthropometry measurement	100% 100%	75% 75%	100% 100%	100% 100%

ENF NON-COMPLIANCES

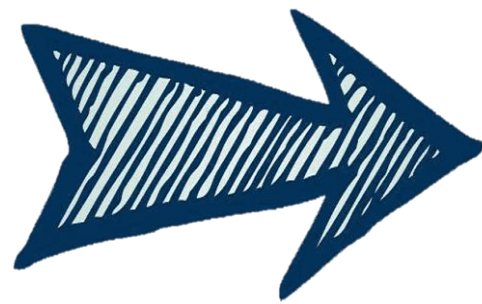
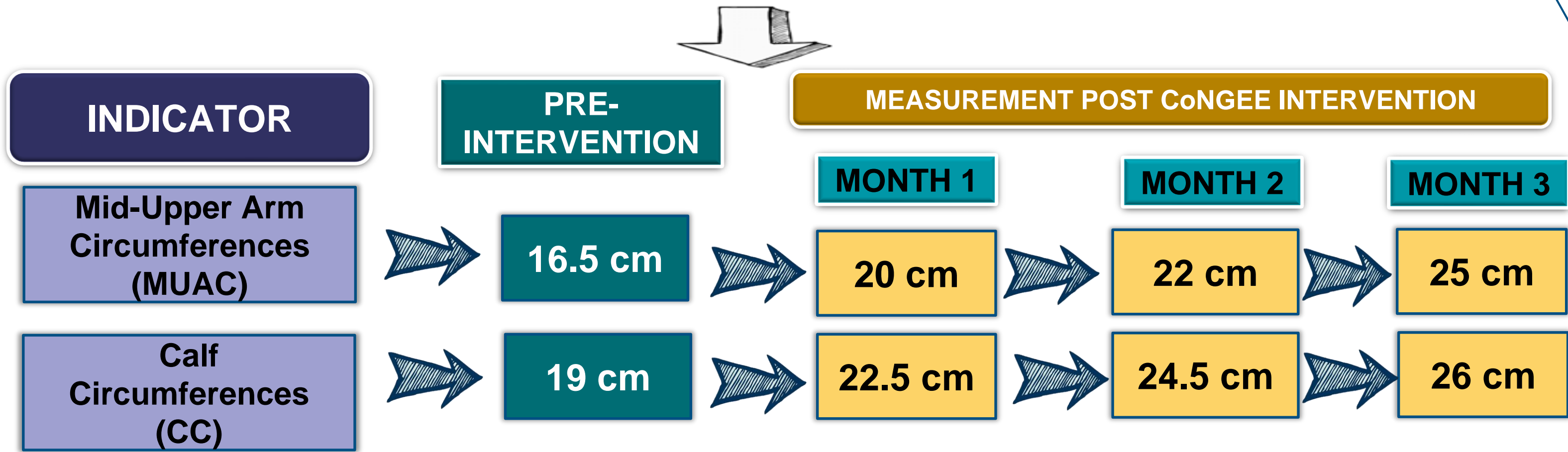


FACTOR CONTRIBUTING TO NON-COMPLIANCE



IMPROVEMENT OF PATIENT

THE UNSUNG HERO IN SUCCESS STORY: MR A



IMPROVEMENT OF CARETAKERS

CARETAKER SATISFACTION



DASS EVALUATION

	PRE-INTERVENTION	POST-INTERVENTION
Total Distress	25	6
Depression	14	4
Anxiety	11	1
Stress	10	1

LIMITATION OF STUDY



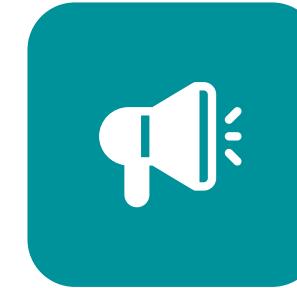
UNAPPROPRIATE ANTHROPOMETRY MEASUREMENT TOOLS

- ✓ Better and precise equipment needed to assess anthropometry measurement for accurate nutritional status.
- ✓ Currently we use measuring tape for anthropometry measurement



INCOOPERATIVE CARETAKERS

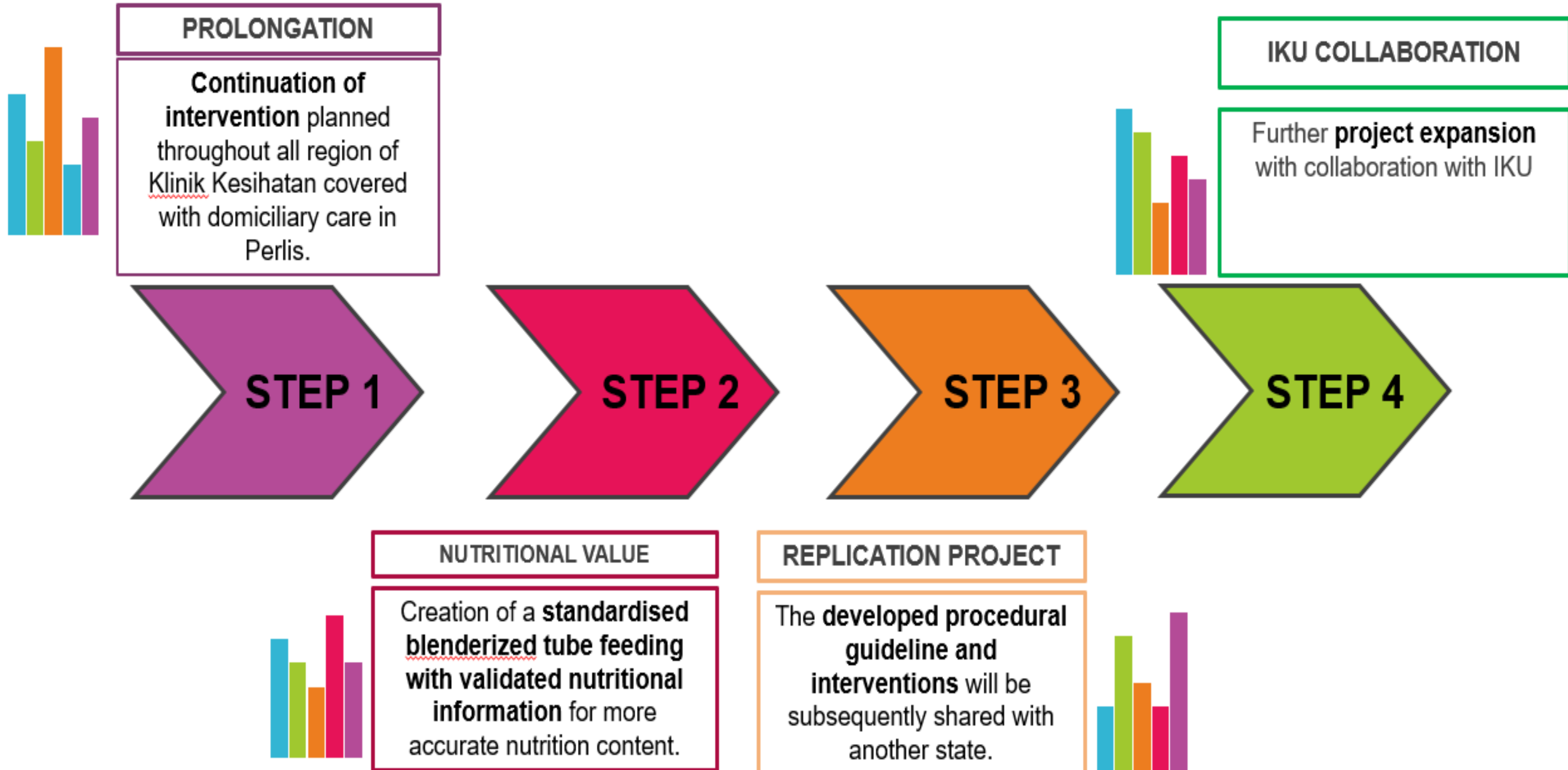
- ✓ Inattentive caretakers to prepare ConGEE to patient
- ✓ Refuse further intervention



POVERTY-STRICKEN FAMILY

Post cycle 2, there are still 7 patients malnourish, 4 out of them were unable to prepare congee due to monetary restriction

NEXT PLAN



INVITATION AS SPEAKER FOR ENTERAL NUTRITION UPDATES KEDAH 2024: Home Enteral Regime- An Innovation



PN ASYRAH
MALNUTRITION:
IDENTIFYING
PATIENT AT
RISK

PN HUSNA
DELIVERING
SAFE &
EFFECTIVE EN

PN LILY
NUTRITION
MONITORING
REFEEDING
SYNDROME

PN HAYATI
HOME
ENTERAL
REGIME: AN
INNOVATION

EN FAZMI
EN RANGE &
STANDARD
DILUTION

ENTERAL NUTRITION UPDATES KEDAH 2024



BILIK SEMINAR 2&3
HOSPITAL SULTANAH
BAHIYAH



12 SEPTEMBER 2024
0800 - 1530 H



HOSPITAL SULTANAH BAHYAH
KM6, Jalan Langgar
05460 ALOR SETAR
KEDAH DARUL AMAN

Telefon : 04-7 406233/6341/6566
Portal Rasmi : <https://jknkedah.moh.gov.my/hsb/>
E-mel Jabatan : hsb@moh.gov.my

Bil (/So) dlm.HSBAS/DNS/MO3.2

2 SEPTEMBER 2024

Pejabat Kesihatan Daerah Kangar,
Jalan Abi Tok Hashim,
01000 Kangar, Perlis.
(U/P: Puan Noorhayati binti Mohamad Yusof)

Tuan,

UNDANGAN PEGAWAI DIETETIK SEBAGAI PENCERAMAH UNTUK KURSUS *ENTERAL NUTRITION: NURSING PRACTICE UPDATES* PERINGKAT NEGERI KEDAH 2024

Dengan segala hormatnya saya merujuk perkara di atas.

2. Sukacita dimaklumkan bahawa Jabatan Dietetik dan Sajian, Hospital Sultanah Bahiyah dengan kerjasama Kelab *Dietitian* Hospital Sultanah Bahiyah akan menganjurkan Kursus *Enteral Nutrition: Nursing Practice Updates* peringkat Negeri Kedah 2024 seperti butiran berikut:

Tarikh : 12 September 2024 (Khamis)
Masa : 8.00 pagi – 3.30 petang
Tempat : Bilik Seminar 2&3, Auditorium, Hospital Sultanah Bahiyah

3. Kursus ini memfokuskan kepada kepentingan saringan status nutrisi di kalangan pesakit di wad serta pengendalian dan pelaksanaan rejim pemakanan enteral kepada pesakit. Peserta juga akan disediakan dengan kaedah pengendalian pam pemakanan enteral (*enteral feeding pump*) yang betul bagi pemberian produk enteral secara *infuse* yang selamat dan efektif.

4. Sehubungan dengan itu, kami ingin menjemput **Puan Noorhayati binti Mohamad Yusof**, Pegawai Dietetik dari Klinik Kesihatan Kampung Gial untuk menyampaikan ceramah dengan tajuk "*Home Enteral Regime – An Innovation*" pada hari tersebut. Keprihatinan pihak tuan untuk memberi pelepasan amat dihargai dan didahului dengan ucapan terima kasih.

Sekian, terima kasih.

"MALAYSIA MADANI"
"BERKHIDMAT UNTUK SEMUA"

Saya yang menjalankan amanah,

(DR. FAUZIAH BINTI ABDUL WAHAB, SDK.)
No. MPM: 35514
Pegarah Hospital,
Hospital Sultanah Bahiyah

S.K: Pegawai Yang Menjaga
Klinik Kesihatan Kampung Gial

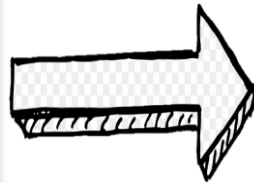
(Sila catatkan rujukan surat ini apabila menjawab)

OBJECTIVE-CONCLUSION RELATIONSHIP

OBJECTIVE

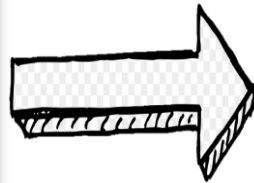
CONCLUSION

To verify the percentage of malnutrition among bedridden patient in domiciliary care



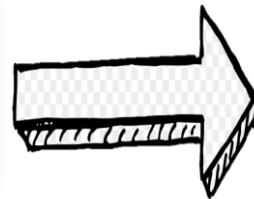
Pre-remedial data showed that **68% bedridden patients in domiciliary care has malnutrition**

To identify the contributing factors to high percentage of malnutrition among bedridden patient in domiciliary care



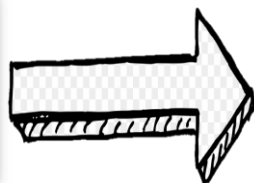
- The main contributing factors to this problem are **ENF non-compliance**.
- Other factors include family negligence and patient's health deteriorates.

To formulate and implement proper remedial action



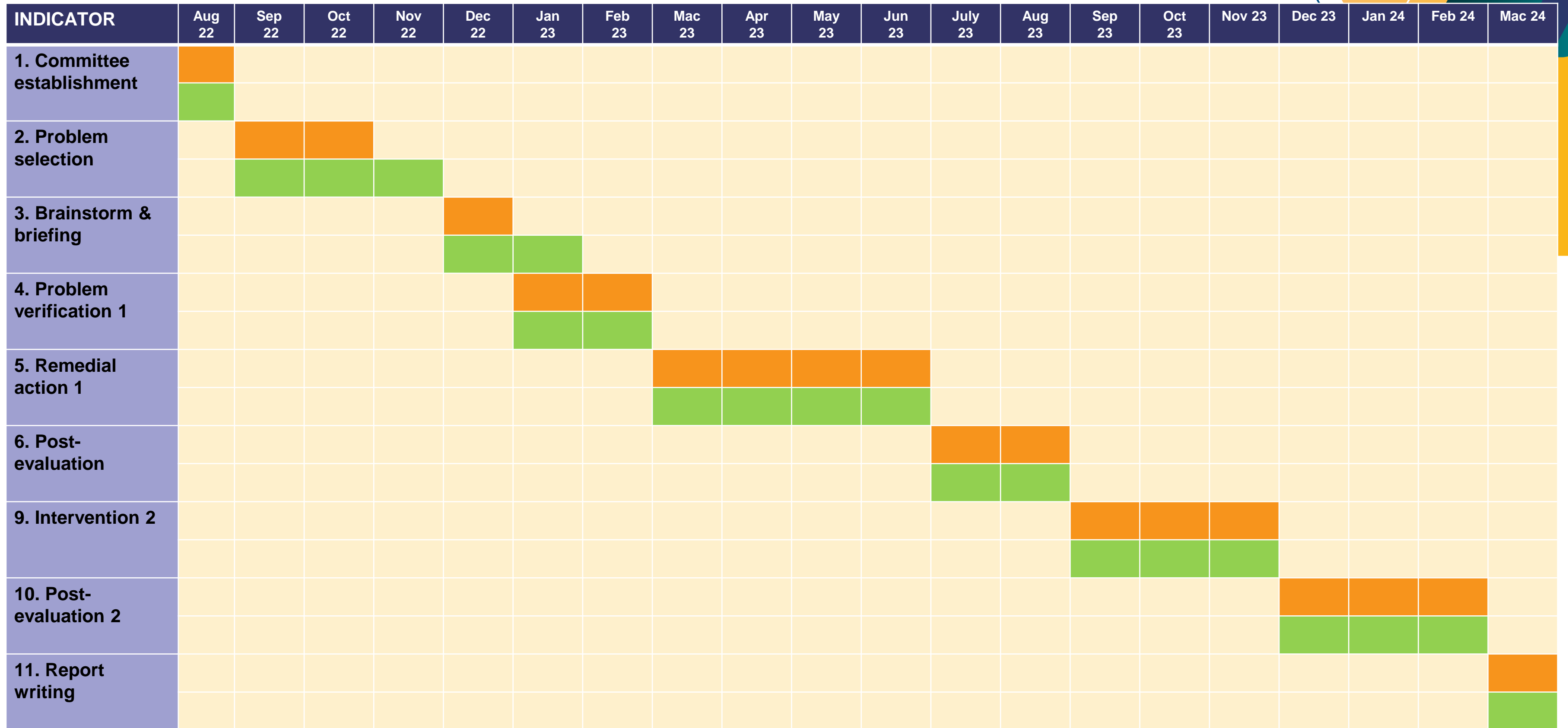
- Strategies formulated include introduction of **CoNGEE** with video guideline, **infographic ENF slip regime and handling guideline**.
- **Homecare patient management course** also was conducted.

To evaluate the effectiveness of remedial action



Post remedial, percentage of malnutrition among bedridden patient in domiciliary care decreased from **68% to 14.9%**

GANTT-CHART



PLAN



ACTUAL



REFERENCES

1. Garis Panduan Perkhidmatan Perawatan Domisiliari Di Kesihatan Primer: Edisi 1. Bahagian Pembangun Kesihatan Keluarga Dan Bahagian Perkembangan Perubatan. Kementerian Kesihatan Malaysia. 2014.
2. Mohammad HA et al (2021). Malnutrition among the Elderly in Malaysia and Its Associated Factors: Findings from the National Health and Morbidity Survey 2018. *J Nutr Metab.* 2021 Apr 12:2021:6639935. PMID: 33953978 ; PMCID: [PMC8057910](#)
3. Chauhan, D., Varma, S., Dani, M., Fertleman, MB., Koizia LJ. Nasogastric Tube Feeding in Older Patients: A Review of Current Practice and Challenges Faced. *Curr Gerontol Geriatr Res.* 2021 Jan 21:2021:6650675. PMID: 33936197; PMCID: [PMC8056871](#).
4. Lisa, ABA., Belinda, SG., Timothy CC. Hospital malnutrition: prevalence, identification and impact on patients and the healthcare system. *Int J Environ Res Public Health.* 2011 Feb 16 ; 8(2):514-27. PMID: 21556200 ; PMCID: [PMC3084475](#).
5. Suzana, S., Boon, PC., Chan, PP., Normah, CD. Malnutrition Risk and its Association with Appetite, Functional and Psychosocial Status among Elderly Malays in an Agricultural Settlement. *Mal J Nutr* 19(1): 65 - 75, 2013.
6. Hitoshi, O., Yasuka, T., Mamoru, D. Improvement in the nutritional status of very elderly stroke patients who received long-term complete tube feeding. *e-SPEN, the European e-Journal of Clinical Nutrition and Metabolism* Volume 5, Issue 6, December 2010, Pages e272-e276.
7. Lauque et al (2000). Protein-energy oral supplementation in malnourished nursing-home residents. A controlled trial. *Age Ageing.* 2000 Jan;29(1):51-6. PMID: 10690696.
8. Ruhaya S et al (2020). Factors contributing to food insecurity among older persons in Malaysia: Findings from the National Health and Morbidity Survey (NHMS) 2018. *Geriatric Gerontology International.* Volume 20, Issue S26, 2020 December 28, Pages 73-78.
9. Okada K et al (2000). The nutritional status of elderly bed-ridden patients receiving tube feeding. *J Nutr Sci Vitaminol (Tokyo).* 2000 November 2;47(3):236-41. PMID: 11575579.
10. Fujita, Y., Ohzeki, T. 1993. Energy requirements for frail elderly females. *Jpri J Geriatr* 30: 568-5 71.
11. Alex CPY. 2020. DOSM Household Income and Expenditure Reports 2019: Key Highlights. Available from : <https://rb.gy/js55y>. Accessed: 18 August 2023.
12. Oparaji JA., Sferra, T., Sankararaman S. Basics of Blenderized Tube Feeds: A Primer for Pediatric Primary Care Clinicians. *Gastroenterology Res.* 2019 Jun; 12(3): 111–114. PMCID: [PMC6575127](#) ; PMID: [31236150](#).
13. Malafarina V et al (2018). Nutritional Status and Nutritional Treatment Are Related to Outcomes and Mortality in Older Adults with Hip Fracture. *Nutrition and Ageing. Nutrients* 2018, 10(5), 555.
14. Wells, JL., Dumbrell AC. Nutrition and Aging: Assessment and Treatment of Compromised Nutritional Status in Frail Elderly Patients. *Clin Interv Aging.* 2006 Mar; 1(1): 67–79. PMCID: [PMC2682454](#) ; PMID: [18047259](#)

THANK YOU



Sihat
Maka Sihat

QA Project:

Improving Nutrition
Status in Domiciliary
Services: Perlis Initiative



FOCUS ON THE SOLUTION, NOT ON THE PROBLEM