# **INCREASING THE PERCENTAGE OF CORRECT MANAGEMENT OF** HYPOGLYCEMIA INCIDENTS IN MEDICAL WARDS AT KAJANG HOSPITAL



<u>Fauziah Hanim AA<sup>1</sup>, Dzatil Awatif Y<sup>1</sup>, Anuar M<sup>1</sup>, Elliyyin K<sup>2</sup>, Hazwani A<sup>2,</sup>, Juliana F<sup>2,</sup>, Dahlia AK<sup>3</sup> Jidah A<sup>3,</sup>, Siti Aminah A<sup>3,</sup>, Norhidayah A<sup>3,</sup></u>

<sup>1</sup> Pharmacy Department, Hospital Kajang, Kajang, Selangor <sup>2</sup> Endocrine Unit, Medical Department, Hospital Kajang, Selangor <sup>3</sup> Nursing Unit, Hospital Kajang, Kajang, Selangor <sup>3</sup> Nursing Unit, Nursing Unit, Hospital Kajang, Selangor <sup>3</sup> Nursing Unit, N

# **1.SELECTION OF OPPORTUNITIES FOR**

**PP43** 

		S	Μ	Α	R	Т	SCORE					
Low percentage of correct management of hypoglycemia incidents in Medical Wards	50	44	50	46	48	238						
Wastage of diabetes medication in poor compliance patient in Hospital Kajang		42	10	36	15	40	143					
Poor understanding of antidiabetic medication among discharged patients.	34	34	36	18	42	164						
GROUP MEMBERS: 10	SCORE : 1 TO 5											

# **2.3 PROCESS OF CARE**

### **2.4 MODEL OF GOOD CARE**

	IMPROVEMENT						Patient develop hypoglycemia					No	No Process		Criteria	Standard	Verification	Ation Cycle 1	<b>Cycle 2</b> (N=47)	
	1.1	INTRODUC	CTION				*	Tr	reatment			NURSE/DOCTOR	1	Treatment	a)	Nurse informe destar	1000/	(11-34)		1000/
Hypogl	ycemia is associated with ir	ncreased morbidit	y and mo	rtality. The	risk of inpa	atient	Mon	nitor bloo	↓ od glucose (BG) lev	el	NO	NURSE		incutinent	b)	Nurse informs doctor	100%	100%	100%	<b>72%</b>
death i	ncreased threefold for every	0.56 mmol/L decr	ease in the	e lowest blo	od glucose	value		BG	↓ G>4mmol		NO				c)	Nurse serve 15g oral glucose	100%	0%	<b>30%</b>	72%
below increas	3.9 mmol/L. Hypoglycemia al ed cost to the healthcare syst	so results in increa em.	ased length	h of hospita	I stay result	ing in		YE	ES				2	Monitor BG	d)	Nurse check BG level at 15	100%	6%	40%	70%
				*	Subse	equent Action			NURSE		level		minutes and document in patient	t	•/•					
					<b>T C</b>		Subs	sequent l	BG Level Monitori	g 🔶		NURSE				investigation chart				
		-	S M	A R	T SC	ORE		BG	>4.5mmol		NO		3	Subsequent Action	e)	Nurse serve	100%	29%	22%	1 62%
Low p	ercentage of correct manage dycemia incidents in Medical	ement of Wards	50 44	50 46	48 2	238	(resolved)					Action		<ul> <li>20g slow-acting carbohydrate through oral feeding/</li> </ul>		<b></b>				
Wasta	ige of diabetes medication in	poor						Doctor	Assessment		🛨 Critical steps	s DOCTOR				Nasogastric (NG) feeding				
comp	liance patient in Hospital Kaja	ing	42 10	36 15	40 1	143					· · ·					<ul> <li>Injection Dextrose 5% if patient</li> </ul>	t			
Poor	understanding of antidiabetic	medication	3/1 3/1	36 18	A2 1	164	<b>3. PR</b>	OCES	S OF GATI	IERING II	NFORMA	ATION				NBM/No NG tube				
amon I	g discharged patients. ©		54 54	50 18		S	Study Design	QA/QI S <sup>.</sup>	tudy	Sampling	Universa	al Sampling	4	Subsequent BG Level	f)	Nurse monitor BG level at	100%	71%	189%	100%
	GROUP MEMBERS: 10		S	CORE : 1 TO	5					technique				Monitoring		<ul> <li>Hourly if BG level &lt;4.5mmol/L</li> </ul>				
						S	tudy Period		Verification	Cycle 1	Cycle 2	00.22				OR • 6 Hourly if BG level				
	1.3 KEA	ASON FOR S	ELECII	ION			nclusion Critoria		Jan – Feb 23	Iviar – Jul 23	Aug – De					>4.5mmol/L				
C	<u>Seriousness</u> Low percentage of correct n	nanagement of hy	noglycemia	incidents ca	an cause rea	active <b>F</b>	Exclusion Criteria	Critically	us Patient	onte Dationt on	Inculin Infusio		5	Doctor	<u>م</u> )	Doctor assesses and modify	100%	38%	1 87%	1 96%
U	hypoglycemia and extravasation	n of blood vessel (B	V) which lea	ad to prolong	ed hospitalisa	ation, D	Data Collection	Hypoglyc	remic Managemer		Ithcare Provide			Assessment	5/	current medication regimen as	S 10078			
	increase the risk of morbidity a	nd mortality and trea	atment cost	ect monitorin	ng time	Т	ools	Audit For	rm:	Forn	n:					per guideline				
• 28% reactive hypoglycemia found in • Hypoglycemia can cause neuronal damage in																				
hypoglycemia cases following complex carbohydrate intake <sup>3</sup> .							4. ANALISIS AND INTERPRETATION													
	carbohydrate intake <sup>3</sup> .		us in the tra-	atment can s	ubsoquently															
	<ul> <li>carbohydrate intake<sup>3</sup>.</li> <li>Significant <b>extravasation</b> of B</li> </ul>	• Delay V due to impa	ys in the trea I <b>ired cogniti</b>	atment can s i <b>ve function</b> <sup>6</sup>	ubsequently o , increased ri	cause <b>isk of</b>	4.1		N FINDING	FROM VE	ERIFICATIO	ON				4.2 PARETO	CHART			
	<ul> <li>carbohydrate intake<sup>3</sup>.</li> <li>Significant extravasation of B Dextrose 50% injection can le and soft tissue injury, loss of l</li> </ul>	• Delay V due to ad to skin demo	ys in the trea <b>ired cogniti</b> entia and fu	atment can s ive function <sup>6</sup> nctional brai	ubsequently o , increased ri n failure <sup>2</sup> .	cause isk of	4.1		N FINDINGS	FROM VE	ERIFICATIO	<b>ON</b> ram oral glucose	Fa	actors contri	butiı	<b>4.2 PARETO</b> ng to the low percentage of	CHART correct ma	anagement o	of hypogly	ycemia
	<ul> <li>carbohydrate intake<sup>3</sup>.</li> <li>Significant extravasation of B Dextrose 50% injection can le and soft tissue injury, loss of l death<sup>4</sup>.</li> </ul>	• Delay V due to ad to skin limb, or	ys in the trea i <b>ired cogniti</b> entia and fu	atment can s ive function <sup>6</sup> nctional brai	ubsequently o , increased ri n failure <sup>2</sup> .	cause isk of	4.1 NONE	MAII	N FINDINGS 0% Correct imm	FROM VE	ERIFICATION ent with 15-gra minutes treatr	<b>ON</b> am oral glucose	Fa	actors contri	butiı	<b>4.2 PARETO</b> ng to the low percentage of incidents in the Me	CHART correct ma edical Ward	anagement o d	of hypogly	ycemia
Μ	<ul> <li>carbohydrate intake<sup>3</sup>.</li> <li>Significant extravasation of B Dextrose 50% injection can le and soft tissue injury, loss of l death<sup>4</sup>.</li> <li><u>Measurable</u> The percentage of correct man</li> </ul>	V due to ad to skin limb, or agement of hypogly	ys in the trea <b>ired cogniti</b> <b>entia</b> and <b>fu</b> <b>rcemia incid</b>	atment can s ive function <sup>6</sup> nctional brain ents can be r	ubsequently o , increased ri n failure <sup>2</sup> . neasured thro	cause isk of	4.1 NONE (N=34)	MAII	N FINDINGS 0% Correct imm 6% Monitoring	<b>FROM VE</b> ediate treatme BG level at 15 r	ERIFICATIO ent with 15-gra minutes treatr	<b>ON</b> ram oral glucose ment was given	Fa 15	actors contril	butii	<b>4.2 PARETO</b> ng to the low percentage of incidents in the Me	CHART correct ma edical Ward	anagement o d	of hypogly	<b>ycemia</b> 100% 80%
M	<ul> <li>carbohydrate intake<sup>3</sup>.</li> <li>Significant extravasation of B Dextrose 50% injection can le and soft tissue injury, loss of I death<sup>4</sup>.</li> <li><u>Measurable</u> The percentage of correct man the patient's medical record.</li> </ul>	V due to ad to skin limb, or agement of hypogly	ys in the trea ired cogniti entia and fu	atment can s ive function <sup>6</sup> nctional brain ents can be r	ubsequently o , <b>increased ri</b> n failure <sup>2</sup> . measured thro	cause isk of	4.1 NONE (N=34) of the management hypoglycemia	ent of	N FINDINGS 0% Correct imm 6% Monitoring 29% Cor	FROM VE ediate treatme G level at 15 r ect subsequen	ERIFICATIO ent with 15-gra minutes treatr nt action per g	ON am oral glucose ment was given guideline	Fa 15 10	actors contril	buti	<b>4.2 PARETO</b> ng to the low percentage of incidents in the Me 12 10 9	CHART correct ma edical Ward	anagement o d	of hypogly	<b>ycemia</b> 100% 80% 60%
M	<ul> <li>carbohydrate intake<sup>3</sup>.</li> <li>Significant extravasation of B Dextrose 50% injection can le and soft tissue injury, loss of l death<sup>4</sup>.</li> <li><u>Measurable</u> The percentage of correct man the patient's medical record.</li> <li><u>Appropriateness</u> Appropriate management of by</li> </ul>	<ul> <li>V due to ead to skin limb, or</li> <li>Agement of hypogly</li> <li>Anoglycemia inciden</li> </ul>	ys in the trea ired cogniti entia and fu vcemia incide	atment can s ive function <sup>6</sup> nctional brain ents can be r	ubsequently o , <b>increased ri</b> <b>n failure</b> <sup>2</sup> . measured thro	cause isk of	4.1 NONE (N=34) of the management hypoglycemia incidents in Med	ent of a dical	N FINDINGS 0% Correct imm 6% Monitoring 29% Corr 71% Correct su	<b>FROM VE</b> ediate treatme BG level at 15 r ect subsequen	ERIFICATIO ent with 15-gra minutes treatr at action per g	ON ram oral glucose ment was given guideline	Fa 15 10 5	actors contri	buti	<b>4.2 PARETO</b> Ing to the low percentage of incidents in the Me 12 10 9	CHART correct ma edical Ward	anagement o d 8	of hypogly	<b>ycemia</b> 100% 80% 60% 40%
MA	<ul> <li>carbohydrate intake<sup>3</sup>.</li> <li>Significant extravasation of B Dextrose 50% injection can le and soft tissue injury, loss of l death<sup>4</sup>.</li> <li><u>Measurable</u> The percentage of correct man the patient's medical record.</li> <li><u>Appropriateness</u> Appropriate management of hy the quality of care as per our correct</li> </ul>	<ul> <li>V due to ead to skin limb, or</li> <li>Agement of hypogly poglycemia inciden ore responsibilities.</li> </ul>	ys in the trea <b>ired cogniti</b> <b>entia</b> and <b>fu</b> ycemia incident ts can prevent	atment can s ive function <sup>6</sup> nctional brai ents can be r ent complicat	ubsequently of , increased ring n failure <sup>2</sup> .	cause isk of ough orove	4.1 <b>NONE</b> (N=34) of the management hypoglycemia incidents in Med Ward Were correct	ent of a dical	N FINDINGS 0% Correct imm 6% Monitoring 29% Cor 71% Correct su	FROM VE ediate treatme BG level at 15 r ect subsequen osequent BG le	ERIFICATIO ent with 15-gra minutes treatr nt action per g	ON am oral glucose ment was given guideline ng per guideline	Fa 15 10 5 0	actors contri	buti	4.2 PARETO ng to the low percentage of incidents in the Me	CHART correct ma edical Ward	anagement o d 8	of hypogly	<b>xcemia</b> 100% 80% 60% 40% 20% 0%
M A R	<ul> <li>carbohydrate intake<sup>3</sup>.</li> <li>Significant extravasation of B Dextrose 50% injection can le and soft tissue injury, loss of l death<sup>4</sup>.</li> <li><u>Measurable</u> The percentage of correct man the patient's medical record.</li> <li><u>Appropriateness</u> Appropriate management of hy the quality of care as per our construction.</li> <li><u>Remediable</u> This problem is required.</li> </ul>	<ul> <li>V due to ead to skin limb, or</li> <li>agement of hypogly ypoglycemia inciden ore responsibilities.</li> </ul>	ys in the trea <b>ired cogniti</b> <b>entia</b> and <b>fu</b> wcemia incide ts can preve	atment can s ive function <sup>6</sup> nctional brain ents can be r ent complicat	ubsequently of , increased ring n failure <sup>2</sup> .	cause isk of ough orove	4.1 NONE (N=34) of the management hypoglycemia incidents in Med Ward Ward were correct	ent of a dical	N FINDINGS 0% Correct imm 6% Monitoring 29% Corr 71% Correct su 38% Correct	<b>FROM VE</b> ediate treatme BG level at 15 r ect subsequen osequent BG le	ERIFICATIO ent with 15-gra minutes treatr at action per g evel monitoring ad modification	ON am oral glucose ment was given guideline of per guideline on of current	Fa 15 10 5 0	actors contril	butii	4.2 PARETO Ing to the low percentage of incidents in the Me 12 10 9 Vailability of Vailability of Cal SOP	CHART correct ma edical Ward	anagement o d 8 Lack of nowledge A	f hypogly 5 Poor wareness	ycemia 100% 80% 60% 40% 20% 0%
M A R	<ul> <li>carbohydrate intake<sup>3</sup>.</li> <li>Significant extravasation of B Dextrose 50% injection can le and soft tissue injury, loss of I death<sup>4</sup>.</li> <li><u>Measurable</u> The percentage of correct man the patient's medical record.</li> <li><u>Appropriateness</u> Appropriate management of hy the quality of care as per our co <u>Remediable</u> This problem is remediable with</li> </ul>	<ul> <li>V due to ead to skin limb, or</li> <li>agement of hypogly ypoglycemia inciden ore responsibilities.</li> <li>h the active involvem</li> </ul>	ys in the trea <b>ired cogniti</b> <b>entia</b> and <b>fu</b> weemia incide ts can prevent hent of a mu	atment can s ive function <sup>6</sup> nctional brain ents can be r ent complicat	ubsequently of , increased ri n failure <sup>2</sup> . measured thro tions and imp	cause isk of 2 2 ough orove 2 2 ach.	4.1 <b>NONE</b> (N=34) of the management hypoglycemia incidents in Med Ward Ward were correct	ent of a dical	N FINDINGS 0% Correct imm 6% Monitoring 29% Cor 71% Correct su 38% Correct	FROM VE ediate treatme BG level at 15 r ect subsequen esequent BG le assessment an medica	ERIFICATIO ent with 15-gra minutes treatr nt action per g evel monitoring ad modification	ON am oral glucose ment was given guideline of per guideline on of current	Fa 15 10 5 0	actors contri	Unav	4.2 PARETO Ing to the low percentage of incidents in the Me 12 10 9 Vailability of Cal SOP Preoccupied staff with various duties	CHART correct ma edical Ward	anagement o d 8 Lack of howledge A	of hypogly 5 Poor wareness	<b>xcemia</b> 100% 80% 60% 40% 20% 0%
M A R T	<ul> <li>carbohydrate intake<sup>3</sup>.</li> <li>Significant extravasation of B Dextrose 50% injection can lea and soft tissue injury, loss of B death<sup>4</sup>.</li> <li>Measurable The percentage of correct man the patient's medical record.</li> <li>Appropriateness Appropriate management of hy the quality of care as per our co Remediable This problem is remediable with Timeliness This study can be completed with</li> </ul>	<ul> <li>V due to ad to skin limb, or</li> <li>agement of hypogly</li> <li>ypoglycemia incidentore responsibilities.</li> <li>h the active involvemtore</li> <li>thin a short period.</li> </ul>	ys in the trea <b>ired cogniti</b> <b>entia</b> and <b>fu</b> wcemia incide ts can prevent ment of a mu	atment can s ive function <sup>6</sup> nctional brain ents can be r ent complicat	ubsequently of , increased ring n failure <sup>2</sup> .	cause isk of ough orove	4.1 <b>NONE</b> (N=34) of the managemen hypoglycemia incidents in Med Ward Ward were correct	ent of a dical	N FINDINGS 0% Correct imm 6% Monitoring 29% Cor 71% Correct su 38% Correct	FROM VE ediate treatme BG level at 15 r ect subsequen esequent BG le assessment an medica	ERIFICATIO ent with 15-gra minutes treatra nt action per g evel monitoring ad modification ation	ON am oral glucose ment was given guideline of per guideline on of current	Fa 15 10 5 0	actors contril	butii	4.2 PARETO Ing to the low percentage of incidents in the Markov 12 10 9 10 10 9 10 10 9 10 10 10 10 10 10 10 10 10 10	CHART correct ma edical Ward	anagement o d 8 Lack of howledge A 5	f hypogly 5 Poor wareness 6	<b>xcemia</b> 100% 80% 60% 40% 20% 0%
M A R T	carbohydrate intake <sup>3</sup> . • Significant <b>extravasation</b> of B Dextrose 50% injection can le and soft tissue injury, loss of l death <sup>4</sup> . <b>Measurable</b> The percentage of correct man the patient's medical record. <b>Appropriateness</b> Appropriate management of hy the quality of care as per our co <b>Remediable</b> This problem is remediable with <b>Timeliness</b> This study can be completed with	<ul> <li>V due to ad to skin limb, or</li> <li>agement of hypogly</li> <li>wpoglycemia incidentor</li> <li>wpoglycemia incidentor</li> <li>when active involvemtor</li> <li>thin a short period.</li> </ul>	ys in the trea <b>ired cogniti</b> <b>entia</b> and <b>fu</b> we mia incide ts can prevent hent of a mu	atment can s ive function <sup>6</sup> nctional brain ents can be r ent complicat ultidisciplinar	ubsequently of , increased ri n failure <sup>2</sup> . measured thro tions and imp	cause isk of ough orove ach. *	4.1 NONE (N=34) of the managemen hypoglycemia incidents in Med Ward Ward were correct	ent of a dical	N FINDINGS 0% Correct imm 6% Monitoring 29% Cor 71% Correct su 38% Correct anagement of hypog	FROM VE ediate treatme BG level at 15 r ect subsequen esequent BG le assessment an medica ycemia incidents:	ERIFICATIO ent with 15-gra minutes treatra nt action per g evel monitoring d modification ation MUST FULFILL A 5. S	ON am oral glucose ment was given guideline of current ALL FIVE CRITERIAS	Fa 15 10 5 0 1 10	actors contri 14 Correct treatment not readily available 1		4.2 PARETO In the low percentage of incidents in the Markov 12 10 9 10 10 9 10 10 9 10 10 10 10 10 10 10 10 10 10	CHART correct ma edical Ward	anagement o d 8 Lack of nowledge A 5	of hypogly 5 Poor wareness 6	<b>xcemia</b> 100% 80% 60% 40% 20% 0%
M A R T	<ul> <li>carbohydrate intake<sup>3</sup>.</li> <li>Significant extravasation of B Dextrose 50% injection can le and soft tissue injury, loss of l death<sup>4</sup>.</li> <li>Measurable The percentage of correct man the patient's medical record.</li> <li>Appropriate management of hy the quality of care as per our construction.</li> <li>Remediable This problem is remediable with Timeliness This study can be completed with SLEM NONE (0%) of the</li> </ul>	<ul> <li>V due to ad to skin limb, or</li> <li>agement of hypogly</li> <li>agement of hypogly</li> <li>ypoglycemia incidentor</li> <li>ypoglycemia incidentor</li> <li>the active involvemtor</li> <li>thin a short period.</li> </ul>	ys in the trea <b>ired cogniti</b> <b>entia</b> and <b>fu</b> cemia incide ts can preve hent of a mu <b>ATEME</b> <b>EFF</b>	atment can s ive function <sup>6</sup> nctional brain ents can be r ultidisciplinar NT ECT	ubsequently of , increased ring n failure <sup>2</sup> .	cause isk of ough orove ach. *	4.1 NONE (N=34) of the managemen hypoglycemia incidents in Med Ward were correct	ent of a dical	N FINDINGS 0% Correct imm 6% Monitoring 29% Cor 71% Correct su 38% Correct anagement of hypog	FROM VE ediate treatme BG level at 15 r ect subsequent osequent BG le assessment an medica ycemia incidents:	ERIFICATIO ent with 15-gra minutes treatra nt action per g evel monitoring d modification ation MUST FULFILL A 5. S	ON am oral glucose ment was given guideline on of current ALL FIVE CRITERIAS	Fa 15 10 5 0 4 5 5 6 7 7 7	actors contril 14 Correct treatment not readily available 1 OR CHA F 1		4.2 PARETO In the low percentage of incidents in the Markov 12 12 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 10 9 10 10 9 10 10 9 10 10 9 10 10 9 10 10 9 10 10 10 10 10 10 10 10 10 10	CHART correct ma edical Ward	anagement o d 8 Lack of nowledge A 5	f hypogly 5 Poor wareness 6	<b>xcemia</b> 100% 80% 60% 20% 0%
M A R R T	<ul> <li>carbohydrate intake<sup>3</sup>.</li> <li>Significant extravasation of B Dextrose 50% injection can le and soft tissue injury, loss of l death<sup>4</sup>.</li> <li>Measurable The percentage of correct man the patient's medical record.</li> <li>Appropriate management of hy the quality of care as per our construction the quality of care as per our construction the problem is remediable with Timeliness This study can be completed with SLEM NONE (0%) of the remia incidents (N=19) in ward were managed</li> </ul>	<ul> <li>V due to ad to skin limb, or</li> <li>agement of hypogly</li> <li>wpoglycemia incidentore responsibilities.</li> <li>h the active involvem</li> <li>thin a short period.</li> </ul>	ys in the trea <b>ired cogniti</b> <b>entia</b> and <b>fu</b> we mia incide ts can preve hent of a mu <b>ATENE</b> EFF the three part the the the the the the the the the	atment can s ive function <sup>6</sup> nctional brain ents can be r altidisciplinar NT ECT atients who o	ubsequently of , increased ri n failure <sup>2</sup> . measured through tions and imp y team approx	cause isk of ough orove ach. active ant of	4.1 NONE (N=34) of the managemen hypoglycemia incidents in Med Ward Ward were correct	ent of a dical : correct ma	N FINDINGS 0% Correct imm 6% Monitoring 29% Cor 71% Correct su 38% Correct anagement of hypog	FROM VE ediate treatme BG level at 15 r ect subsequent osequent BG le assessment an medica ycemia incidents:	ERIFICATIO ent with 15-gra minutes treatra at action per g evel monitoring d modification ation MUST FULFILL A 5. S	ON am oral glucose ment was given guideline on of current ALL FIVE CRITERIAS STRATEGIE 5.1 C	Fa 15 10 5 0 1 10 5 0 1 10 10 10 10 10 10 10 10 10 10 10 10	actors contril 14 Correct treatment not readily available 1 OR CHA E 1		4.2 PARETO Ing to the low percentage of incidents in the Marine 12 10 9 10 10 9 10 10 9 10 10 10 10 10 10 10 10 10 10	CHART correct ma edical Ward quate ment K	anagement o d 8 Lack of nowledge A 5	of hypogly 5 Poor wareness 6	<b>xcemia</b> 100% 80% 60% 20% 0%
R R T N N PROI hypogly medica correct	<ul> <li>carbohydrate intake<sup>3</sup>.</li> <li>Significant extravasation of B Dextrose 50% injection can le and soft tissue injury, loss of I death<sup>4</sup>.</li> <li>Measurable The percentage of correct man the patient's medical record.</li> <li>Appropriate management of hy the quality of care as per our co Remediable This problem is remediable with Timeliness This study can be completed with SLEM NONE (0%) of the reemia incidents (N=19) in ward were managed y according to the Practical</li> </ul>	<ul> <li>V due to ad to skin limb, or</li> <li>agement of hypogly</li> <li>agement of hypogly</li> <li>belay impaded</li> <li>dema</li> <li>de</li></ul>	ys in the treat ired cognition entia and fur cemia incide ts can preve hent of a mu ATENE EFF the three part ycemia follor ycemia passo	atment can s ive function <sup>6</sup> nctional brain ents can be r altidisciplinary <b>NT</b> ECT atients who of wing incorrected away*.	ubsequently of , increased ri n failure <sup>2</sup> . measured through tions and imp y team approa	cause isk of ough orove ach. active ent of	4.1 NONE (N=34) of the managemen hypoglycemia incidents in Med Ward were correct	ent of a dical correct ma	N FINDINGS 0% Correct imm 6% Monitoring 29% Cor 71% Correct su 38% Correct anagement of hypog	SG level at 15 r ect subsequent osequent BG le assessment an medica ycemia incidents:	ERIFICATIO ent with 15-gra minutes treatrant at action per g evel monitoring d modification ation MUST FULFILL A 5. S	ON am oral glucose ment was given guideline on of current ALL FIVE CRITERIAS STRATEGIE 5.1 C	Fa 15 10 5 0 1 3 5 7 10 10 1 10 10 10 10 10 10 10 10 10 10 1	actors contri 14 Correct treatment not readily available 1 OR CHA E 1 5.1		4.2 PARETO Ing to the low percentage of incidents in the Ma 12 10 9 10 9 Vailability of Cal SOP 2 3 4 5 6 6 6 6 6 7 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9	CHART correct ma edical Ward quate ment K L SOP : H no. 2. 5 & 6	anagement o d 8 Lack of howledge A 5	of hypogly	<b>ycemia</b>
R R R R R R R C C C C C C C C C C C C C	carbohydrate intake <sup>3</sup> . • Significant <b>extravasation</b> of B Dextrose 50% injection can lea and soft tissue injury, loss of I death <sup>4</sup> . <b>Measurable</b> The percentage of correct man the patient's medical record. <b>Appropriateness</b> Appropriate management of hy the quality of care as per our co <b>Remediable</b> This problem is remediable with <b>Timeliness</b> This study can be completed with <b>SLEM</b> NONE (0%) of the reemia incidents (N=19) in ward were managed y according to the <i>Practical</i> to <i>Inpatient Glycemic Care</i>	<ul> <li>V due to ad to skin limb, or</li> <li>Delay impaded and to skin limb, or</li> <li>agement of hypogly</li> <li>agement of hypogly</li> <li>ypoglycemia incident of the active involvement of hypogly</li> <li>thin a short period.</li> <li><b>XOBLENT STA</b></li> <li><b>ONE</b> of hypogly</li> <li>*Poor management of hypoglyce</li> </ul>	ys in the treat ired cognition entia and fur cemia incide ts can preve nent of a mu ATEME EFF the three pa ycemia follor ycemia passe	atment can saive function <sup>6</sup> inctional brain ents can be r ent complicat ultidisciplinary <b>NT</b> ECT atients who coving incorrected away*.	ubsequently of , increased ri n failure <sup>2</sup> . measured through tions and imp y team approximation developed reaction ct management	cause isk of ough orove ach. active ent of	4.1 NONE (N=34) of the management hypoglycemia incidents in Med Ward Ward were correct	ent of a dical correct ma	N FINDINGS 0% Correct imm 6% Monitoring 29% Cor 71% Correct su 38% Correct anagement of hypog 5.1.1) INNOVA *Refer to co a 15g From bulk	SG level at 15 r ect subsequent osequent BG le assessment an medica ycemia incidents:	ERIFICATIO ent with 15-gra minutes treatrant at action per g evel monitoring d modification ation MUST FULFILL A 5. S	ON am oral glucose ment was given guideline of current ALL FIVE CRITERIAS STRATEGIE 5.1 C	Fa 10 5 0 4 5 0 4 5 0 4 10 10 5 0 4 10 10 5 0 4 10 10 10 10 10 10 10 10 10 10 10 10 10	actors contri 14 Correct treatment not readily available 1 OR CHA E 1 5.1		4.2 PARETO Ing to the low percentage of incidents in the Marine 12 10 9 10 10 9 10 10 9 10 10 10 10 10 10 10 10 10 10	CHART correct ma edical Ward	anagement o d 8 Lack of nowledge A 5	of hypogly 5 5 Poor wareness 6	And the second s
R R R R R R R C R C C C C C C C C C C C	<ul> <li>carbohydrate intake<sup>3</sup>.</li> <li>Significant extravasation of B Dextrose 50% injection can lea and soft tissue injury, loss of l death<sup>4</sup>.</li> <li>Measurable The percentage of correct man the patient's medical record.</li> <li>Appropriate management of hy the quality of care as per our correct Remediable This problem is remediable with Timeliness This study can be completed with EXEM NONE (0%) of the cemia incidents (N=19) in ward were managed y according to the Practical to Inpatient Glycemic Care</li> </ul>	<ul> <li>V due to ad to skin impa dema dema dema dema dema dema dema dem</li></ul>	ys in the treat ired cognition entia and fur cemia incide ts can preve hent of a mu <b>ATENE</b> the three pay ycemia follor ycemia passo mia might be one of pose, NO Subsequent CAU	atment can s ive function <sup>6</sup> nctional brain ents can be r ent complicat ultidisciplinar <b>NT</b> ECT atients who d wing incorrected away*.	ubsequently of , increased ri n failure <sup>2</sup> . measured through tions and imp of team approximation developed react management tors to the death:	cause isk of ough orove ach. active ent of	4.1 NONE (N=34) of the management hypoglycemia incidents in Med Ward were correct Arefer definition of cont incidents in the formation of the formatio	ent of a dical correct ma	N FINDINGS 0% Correct imm 6% Monitoring 29% Cor 71% Correct su 38% Correct anagement of hypog anagement of hypog	FROM VE ediate treatme BG level at 15 r ect subsequent osequent BG le assessment an medica ycemia incidents: ycemia incidents:	ERIFICATIO ent with 15-gra minutes treatr at action per g evel monitoring d modification ation MUST FULFILL A 5. S	ON am oral glucose ment was given guideline of current ALL FIVE CRITERIAS STRATEGIE 5.1 C	Fa 15 10 5 0 4 C C C C C C C C C C C C C	actors contri 14 Correct treatment not readily available 1 OR CHA E 1 5.1	buti Unav Ic I.2)	4.2 PARETO Ing to the low percentage of incidents in the Marine 12 10 9 10 9 9 10 9 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 10 9 10 10 9 10 10 9 10 10 10 10 10 10 10 10 10 10	CHART correct ma edical Ward quate ment K S S S S S S S S S S S S S S S S S S S	anagement o d 8 Lack of nowledge A 5	of hypogly 5 5 Poor wareness 6	And the second s
R R R R R R R C C C C C C C C C C C C C	carbohydrate intake <sup>3</sup> . Significant extravasation of B Dextrose 50% injection can leand soft tissue injury, loss of I death <sup>4</sup> . Measurable The percentage of correct manthe patient's medical record. Appropriate management of hythe quality of care as per our control of the quality of care as per our control. Remediable This problem is remediable with Timeliness This study can be completed with SLEM NONE (0%) of the reemia incidents (N=19) in ward were managed y according to the Practical to Inpatient Glycemic Care Valance of Hypoglycemia Incidents in Hospitalized Patient within 2-weeks pilot study	<ul> <li>V due to ad to skin limb, or</li> <li>Delay impa- deme deme deme</li> <li>Delay impa- deme</li> </ul> <li>Delay impa- deme</li> <li>Delay impa- deme</li> <li>Delay impa- deme</li> <li>Delay impa- deme</li> <li>Delay impa-</li>	ys in the treat ired cognition entia and fur cemia incide ts can preve hent of a mu <b>ATENE</b> for the three part ycemia follor ycemia follor ycemia passe mia might be one of bose, NO Subsequent CAU	atment can s ive function <sup>6</sup> nctional brain ents can be r ent complicat ultidisciplinary <b>NT</b> ECT atients who c wing incorrect ed away*. f the contributing fact t action & NO subsequent JSE	ubsequently of , increased ri n failure <sup>2</sup> . measured through tions and imp y team approa developed rea ct management tors to the death: uent BG level monitor	cause isk of ough orove ach. active ent of f local	4.1 NONE (N=34) of the management hypoglycemia incidents in Med Ward were correct Arefer definition of const incidents in Med Ward were correct Innov oral g pack in the	ent of a dical correct ma	N FINDINGS 0% Correct imm 6% Monitoring 29% Cor 71% Correct su 38% Correct anagement of hypog anagement of hypog stock a 15g re- stock	SG level at 15 r sc level at 15 r ect subsequent sequent BG le assessment an medica ycemia incidents:	ERIFICATIO ent with 15-gra minutes treatro at action per g evel monitorina ation MUST FULFILL A 5. S ICOMIXT r no. 1	ON ram oral glucose ment was given guideline of current of current ALL FIVE CRITERIAS STRATEGIE 5.1 C	Fa 15 10 5 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1	actors contri 14 Correct treatment not readily available 1 OR CHA E 1 5.1 Dec cal ada Gu	buti Unav Ic I.2)	4.2 PARETO Ing to the low percentage of incidents in the Me 12 10 9 9 9 9 9 9 9 9 9 9 9 9 9	CHART correct ma edical Ward	anagement of d 8 Lack of nowledge A 5	f hypogly 5 5 Poor wareness 6	And the second s
R R R R R C C C C C C C C C C C C C C C	<ul> <li>carbohydrate intake<sup>3</sup>.</li> <li>Significant extravasation of B Dextrose 50% injection can le and soft tissue injury, loss of l death<sup>4</sup>.</li> <li>Measurable The percentage of correct man the patient's medical record.</li> <li>Appropriate management of hy the quality of care as per our const the quality of care as per our const to study can be completed with the quality of care as per our const to inpatient Glycemic Care</li> <li>valance of Hypoglycemia Incidents in hospitalized Patient within 2-weeks pilot study 19</li> </ul>	<ul> <li>V due to ad to skin limb, or</li> <li>Delay impa- deme deme deme deme deme deme deme dem</li></ul>	ys in the treat ired cognition entia and fur cemia incide ts can preve hent of a mu ATENE EFF the three pay ycemia follow ycemia passo mia might be one of bse, NO Subsequent CAU S not readily Procedure and inadeque	atment can s ive function <sup>6</sup> nctional brain ents can be r ent complicat ultidisciplinary <b>NT</b> ECT atients who c wing incorrect ed away*. f the contributing fact t action & NO subsequer JSE available, un (SOP), staff iate equipme	ubsequently of increased rincle in failure <sup>2</sup> . measured thread tions and imp y team approad developed read of management tors to the death: uent BG level monitor havailability of being preoccont.	cause isk of ough orove ach. active ent of f local cupied	4.1 NONE (N=34) of the management hypoglycemia incidents in Med Ward were correct Acted Act	ent of a dical correct ma correct ma substantion of a glucose price as floor sine wards by rmacy artment.	N FINDINGS 0% Correct imm 6% Monitoring 29% Cor 71% Correct su 38% Correct anagement of hypog anagement of hypog stock a 15g re- stock	SG level at 15 r ect subsequent osequent BG le assessment an medica ycemia incidents:	ERIFICATIO ent with 15-gra minutes treatrant at action per g evel monitoring d modification ation : MUST FULFILL A 5. S ICONIXT r no. 1	ON am oral glucose ment was given guideline do far guideline on of current ALL FIVE CRITERIAS STRATEGIE STRATEGIE SJAC		actors contri 14 Correct treatment not readily available 1 OR CHA E 1 5.1 L 1 5.1	buti Unav I Vnav I C I I I I I I I I I I I I I I I I I	4.2 PARETO Ing to the low percentage of incidents in the Marine 12 10 9 10 10 9 10 10 9 10 10 9 10 10 10 10 10 10 10 10 10 10	CHART correct ma edical Ward	anagement of 8 Lack of nowledge A 5 S VpoAct I I I I I I I I I I I I I	of hypogly 5 5 Poor wareness 6	vcemia 100% 80% 60% 20% 20% 0%
M A A A C C C C C C C C C C C C C C C C	carbohydrate intake <sup>3</sup> . • Significant <b>extravasation</b> of B Dextrose 50% injection can le and soft tissue injury, loss of I death <sup>4</sup> . <b>Measurable</b> The percentage of correct man the patient's medical record. <b>Appropriate management of hy</b> the quality of care as per our co <b>Remediable</b> This problem is remediable with <b>Timeliness</b> This study can be completed with <b>SLEM NONE (0%)</b> of the cemia incidents (N=19) in ward were managed y according to the <i>Practical</i> to <i>Inpatient Glycemic Care</i> valance of Hypoglycemia Incidents in lospitalized Patient within 2-weeks pilot study <b>19</b>	<ul> <li>V due to ad to skin limb, or</li> <li>Delay impa- deme deme deme deme deme deme deme dem</li></ul>	ys in the treat ired cognition entia and fur cemia incide ts can preve hent of a mu ATENE the three pa ycemia follor ycemia passe mia might be one of bse, NO Subsequent CAU S not readily Procedure and inadeque	atment can s ive function <sup>6</sup> nctional brain ents can be r ent complicat ultidisciplinary <b>NT</b> ECT atients who c wing incorrece ed away*. If the contributing fact taction & NO subseque JSE available, un (SOP), staff iate equipme M	ubsequently of increased rinn n failure <sup>2</sup> . measured thread tions and imp of team approad tors to the death: uent BG level monitor havailability of being preoccont.	cause isk of ough orove active ent of flocal cupied	4.1 NONE (N=34) of the management hypoglycemia incidents in Med Ward were correct Actions of contents were correct Innov oral generations oral g	ent of a dical correct ma correct ma glucose prices floor se wards by macy artment. BEFOR	N FINDINGS 0% Correct imm 6% Monitoring 29% Corr 71% Correct su 38% Correct anagement of hypog anagement of hypog S.1.1) INNOVA *Refer to corr a 15g re- btock y E	A ROM VE ediate treatme a diate treatme a level at 15 r ect subsequent ect subsequent osequent BG le assessment an medica ycemia incidents:	ERIFICATIO ent with 15-gra minutes treatra at action per g evel monitoring d modification ation MUST FULFILL A 5. S ICONIXT r no. 1	ON am oral glucose ment was given guideline of or guideline of current ALL FIVE CRITERIAS STRATEGIE STRATEGIE SJ.CC		actors contri 14 Correct treatment not readily available 1 OR CHA 5.1 S.1 L Dec cal add Correct treatment not readily available	buti Unav C NC 1.2) evelop lled H apted uide to ycemi BEFC	4.2 PARETO Ing to the low percentage of incidents in the Markov 12 12 10 9 9 9 9 9 9 9 9 9 9 9 9 9	CHART correct ma edical Ward	anagement of d 8 Lack of nowledge A 5	f hypogly 5 5 Poor wareness 6	100%         80%         60%         20%         0%
M A A R A C C C C C C C C C C C C C C C C	carbohydrate intake <sup>3</sup> . • Significant extravasation of B Dextrose 50% injection can le and soft tissue injury, loss of I death <sup>4</sup> . <b>Measurable</b> The percentage of correct man the patient's medical record. <b>Appropriate management of hy</b> the quality of care as per our co <b>Remediable</b> This problem is remediable with <b>Timeliness</b> This study can be completed with <b>SLEM NONE (0%)</b> of the reemia incidents (N=19) in ward were managed y according to the <i>Practical</i> to <i>Inpatient Glycemic Care</i> valance of Hypoglycemia Incidents in lospitalized Patient within 2-weeks pilot study <b>19</b> <b>6</b>	<ul> <li>Delay imparent of hypogly</li> <li>The active involvem of hypogly</li> <li>The increase the involvem of hypogly</li> </ul>	ys in the treat ired cognition entia and fur cemia incide ts can preve hent of a mu ATENE EFF the three pay ycemia follor ycemia passo mia might be one of bse, NO Subsequent CAU s not readily Procedure and inadeque AI percentage	atment can s ive function <sup>6</sup> nctional brain ents can be r ent complicat ultidisciplinar NT ECT atients who d wing incorrect ed away*. If the contributing fact taction & NO subseque JSE available, un (SOP), staff iate equipme M of correct	ubsequently of increased ri n failure <sup>2</sup> . measured through tions and imp of team approa developed rea ct management tors to the death: uent BG level monitor havailability of being preoccont.	cause isk of ough orove active ent of f local cupied	4.1 NONE (N=34) of the management hypoglycemia incidents in Med Ward were correct Actions of con- Actions of the management were correct Actions of the management Actions of the	ent of a dical correct ma correct ma substantion of a glucose price as floor st he wards by rmacy artment. BEFOR	N FINDINGS 0% Correct imm 6% Monitoring 29% Cor 71% Correct su 38% Correct anagement of hypog the set of hypog S.1.1) INNOVA *Refer to co *Refer to co	A ROM VE ediate treatme a diate treatme a level at 15 r ect subsequent osequent BG le assessment an medica ycemia incidents: for ready-to-use (prepacked)	ERIFICATIO ent with 15-gra minutes treatrand at action per g evel monitoring d modification ation MUST FULFILL A 5. S CONIXT r no. 1 CONIXT r no. 1 AFTER	ON am oral glucose ment was given guideline ag per guideline on of current ALL FIVE CRITERIAS STRATEGGIE 5.1 C VIVE VIVE VIVE VIVE MINIMA STRATEGGIE 5.1 C		actors contri 14 Correct treatment not readily available 1 OR CHA 5.1 5.1 1 1 1 1 1 1 1 1 1 1 1 1 1	buti Unav Ic I.2) evelop lled H apted uide to ycemi BEFC	A.2 PARETO Ing to the low percentage of incidents in the Me 12 12 10 9 9 9 9 9 9 9 10 9 9 9 9 9 10 9 9 9 9 9 10 9 9 10 9 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10 10 9 10 10 9 10 10 9 10 10 9 10 10 9 10 10 10 10 10 10 10 10 10 10	CHART correct ma edical Ward quate ment K ALSOP: H no. 2, 5 & 6	anagement of 8 Lack of nowledge A 5 S S CompoAct C C C C C C C C C C C C C	f hypogly 5 5 Poor wareness 6	And the second s



**6.1 ACHIEVABLE BENEFIT NOT ACHIEVED (ABNA)** 

Successfully prevented event of reactive hypoglycemia among hypoglycemic patient. No reactive hypoglycemia cases were reported in cycle 1 and cycle 2. No mortality was found.

### **2.1 STUDY OBJECTIVES**

### **General Objective**

INDICA

FORM

To increase t Kajang Hosp	the percentage of cor ital	rrect management of hypoglycemia i	ncidents in the N	100%	100%		50% ABNA	36% ABNA	-7% ABNA			
Specific Ob	ojectives		60% 40% 20% 0% —		50%			57%				
I. To detern Ward II. To identi	nine the percentage of fy the factors contrib	of correct management of hypoglyce uting to the problem.				0%	14%					
III. To develo IV. To evalua	op remedial measures te the effectiveness o	s. of the remedial measure.		Ideal	Standard	Verification	Cycle 1	Cycle 2				
	2.2 IN	<b>DICATOR AND STAN</b>						8. L	LE			
INDICATOR:	Percentage of corre incide	ect management of hypoglycemia nts in Medical Ward	STANDARD:	50%	This study warrants patient safety in preventing reactive hypoglycemia							
	Total number of co	prrect management of	¥** 41%	44%						as well as	S	
hypoglyce	hypoglycemia incic	dents in Medical Ward	(Coats, 2013) (Adarju, 2009)									
	Total number of hy in Med	ypoglycemia incidents dical Ward	*With the o Endocr	consensus of inologist	<ol> <li>Raise the standard set to improve service quality.</li> <li>Share the strategies with other facilities within IKNS</li> </ol>							
ACKNOWLEDGEMENTREFERENCES:1. Pengarah Hospital Kajang1. Practical Guide to Inpatient Glycaemic Care 2nd Edition 2020, by Malaysian Endocrine & Metabolic Society.2. Head of Medical Department2. Whitmer et. al. Hypoglycemic episodes and risk of dementia in older patients with type 2 diabetes mellitus.3. Head of Pharmacy Department3. Kishimoto et. al. Subclinical Reactive Hypoglycemia with Low Glucose Effectiveness—Why We Cannot Stop5. Head of Medical Record Department3. Kishimoto et. al. Subclinical Reactive Hypoglycemia with Low Glucose Effectiveness—Why We Cannot Stop6. JK Kualiti Bahagian Perkhidmatan Farmasi and Unit Kualiti, Jabatan Kesihatan Negeri Selangor.4. Lawson et al. Identification of highly concentrated dextrose solution (50% dextrose) extravasation and treatment-5. Adam et. al. Diabetes increases brain damage caused by severe hypoglycemia. G. Asvold et. al. Cognitive function in type 1 diabetic adults with early exposure to severe hypoglycemia.						ne strate unity ou oviding tl hypogly HypoKit as a rescu	treach – Educa hem with Gluco cemic audit for utilizing Glucol ue kit during any	ting healthcare mixt sustainability. Mixt and Hypo / hypoglycemia	provider in Act for the p incident.	nursing home	e	

More than **95%** of nurses rated **good and excellent** for their satisfaction with GlucoMixt. Estimated time saving of **9 hours** per month by expediting decision making process in determining treatment and BG monitoring , thus nurse can focus on other part of patient care. The estimated minimal cost saving on hospitalisation is RM19,200 per year following the reduction of the duration of patient stay. Estimated operational cost saving RM1,500 per year with reduction of needle and dextrose injection usage.

# **LESSON LEARNT**

nia in future. It also improves productivity by providing prompt access to correct treatment as reducing healthcare costs.

# **9. NEXT STEP**



### Poster ini dibentangkan di Konvensyen QA Kebangsaan Kali ke-12, 8-10 Oktober 2024, Negeri Sembilan