I. APPENDIX A: FULL LIST OF FEATURES

ACFI Features:	Low Cost EFi Features:	High Cost EFi Features:
Age	Eating Assistance	Anorexia
Gender	Mobility	Arthritis
Activities of Daily Living	Req Care	AF
Behaviour Domain	-	Anxiety
Complex Health Care Domain		CKD
Nutrition		COPD
Mobility result		CVA
Personal Hygiene		Depression
Toileting		Diabetes
Continence		Dizziness
Cognitive Skills		Dysphagia
Wandering		Dyspnea
Medication		Falls
Complex Health Care		Feet
Verbal Behaviour		Fracture
Physical Behaviour		Hearing
Depression		Heart Failure
Eating		Heart Valve Disease
Readiness To Eat		Hypertension
Transfers		Hypotension
Locomotion		IHD
Dressing And Undressing		Incontinence
Washing And Drying		Memory Cognitive
Grooming		Osteoporosis
Use Of Toilet		Pain
Toilet Completion		Parkinsonism
Urinary Continence Checklist		Peptic
Faecal Continence Checklist		PVD
Checklist		Skin Ulcer
Verbal Behaviour Checklist		Sleep
Physical Behaviour Checklist		Thyroid
Wandering Checklist		Vision

II. APPENDIX 2: SELECTED FEATURES

A. Linear Regression

Algorithm	ACI	FI+Low EFI	Cost	Lo	w Cost	EFI		None		G	A Selec Subset		N
Number of Features	5	10	15	5	10	15	5	10	15	5	10	15	
Depression	X	X	X		X	X	X	X	X		X	X	10
IHD	X	71	X	X	X	X	X	X	X	X	X	21	10
Diabetes	11	X	X	X	X	X	21	11	X	X	X	X	9
CVA	X	X			X	X		X	X		X	X	8
Hypertension		X	X	X	X	X			X	X		X	8
COPD	X	X	X		X	X			X			X	7
Osteoporosis		X	X		X	X		X	X			X	7
Memory	X	X			X	X			X		X	X	7
Cognitive													
Incontinence						X	X	X	X		X	X	6
Arthritis			X		X	X			X		X		5
Dysphagia			X				X	X	X			X	5
Anorexia		X	X							X		X	4
AF		X	X			X						X	4
Skin Ulcer			X				X	X	X				4
Pain				X		X					X	X	4
Hearing			X					X		X		X	4
Heart Failure								X			X	X	3
Vision					X	X			X				3 2 2 2 2
Feet			X					X					2
Falls						X					X		2
Dizziness			X						X				2
Anxiety			X			X							
Fracture									X				1
Parkinsonism		X											1
PVD				***								X	1
Sleep				X									1
Heart Valve													0
Disease													0
Hypotension													0
Dyspnea													0
CKD													0
Peptic													0
Thyroid													0

B. Support Vector Machine

Algorithm	AC	FI+Low EFI	Cost	Lo	w Cost	EFI		None		G	A Selec Subset		N
Number of	5	10	15	5	10	15	5	10	15	5	10	15	
Features													
Depression		X	X		X	X	X	X	X	X	X	X	10
Memory		X	X	X	X	X		X	X	X	X	X	10
Cognitive													
IHD	X	X	X		X	X	X		X	X	X	X	10
Osteoporosis	X	X	X	X	X	X					X	X	8
Diabetes	X	X	X	X		X			X		X	X	8
Skin Ulcer			X		X	X	X				X	X	6
COPD			X		X	X		X	X	X			6
CVA		X	X			X		X	X			X	6
Hypertension		X	X	X	X	X					X		6
Hearing	X	X	X			X			X		X		6
Arthritis			X		X	X			X			X	5
Dizziness		X		X				X	X			X	5
Heart Failure	X	X	\mathbf{X}			\mathbf{X}							4
Dysphagia							X	X	X			X	4
Incontinence							X	X	X			X	4
Pain						X		X	X				3
Vision									X		X	X	3
Fracture						X					X	X	3
Falls			X		X					X			3
PVD						X						X	2
Thyroid								X	X				2
Hypotension												X	1
Feet								X					1
Anxiety			X										1
Parkinsonism									X				1
AF					X								1
Anorexia			X										1
Heart Valve													0
Disease													
Dyspnea													0
CKD													0
Peptic													0
Sleep													0

C. Decision Tree

Algorithm	ACI	FI+Low EFI	Cost	Lo	w Cost	EFI		None		G	A Selec Subset		N
Number of	5	10	15	5	10	15	5	10	15	5	10	15	
Features													
Diabetes	X	X	X	X	X	X		X	X	X	X	X	11
IHD		X			X	X		X		X	X	X	7
Dysphagia		X		X		X			X		X	X	6
Osteoporosis	X	X	X		X	X			X				6
CVA			X		X	X	X	X	X				6
Depression							X	X	X	X	X	X	6
Hearing		X	X			X				X	X	X	6
Heart Failure	X		X	X	X	X							5
PVD	X				X			X			X	X	5
Hypertension		X	X	X	X	X							5
Vision								X	X	X	X	X	5
Memory					X	X	X				X		4
Cognitive													
CKD		X			X	X						X	4
Skin Ulcer			X			X	X						3
Dizziness				X			X		X				3 3 2 2 2 2 2 2 2 2 2 2 2 2 2
Anxiety					X	X			X				3
Incontinence								X	X				2
Falls		X				X							2
Thyroid			X						X				2
AF		X										X	2
Parkinsonism									X			X	2
Anorexia	X		X										2
Hypotension								X	X				2
COPD								X	X				2
Heart Valve			X									X	2
Disease													
Fracture								X	X				2
Feet		X	X										2
Dyspnea											X		1
Pain													0
Peptic													0
Arthritis													0
Sleep													0