

**Supplementary Table S1:** Summary of key demographic and clinical characteristics of personas developed during codesign process.

Persona	Name, Age, Gender	Ethnicity, preferred language	Social characteristics	Medical History	Biophysical parameters	Cognition	Pathology/Imaging	Medications	Function	Prior surgery	TAD
1	Harold, 42yo, Male	First Nations, English	Office manager, lives with female partner, two children	Nil	BMI 29 BP 135/90 Pulse 88 Resp 16	No impairment	Fasting Glucose 5.7	Glucosamine Fish oil	Independent Active sports player	ACL repair	Non-smoker, No alcohol, No drug use
2	Gina, 59yo, Female	Italian, English	Teacher, lives alone (divorced), no children, carer for mother	T2DM Chronic backpain Recent COVID-19	BMI 30 BP 124/80 Pulse 72 Resp 12	No impairment	HbA1c 6% eGFR >90	Meloxicam Empagliflozin + Metformin Amitriptyline	Independent Frailty Score 3 DASS 18.95	Hysterectomy	Non-smoker, 1-2 standard drinks/day
3	Sam, 55yo, Male	Arabic, limited English	Tradie, married, 4 kids, lives with extended family	IHD Bowel cancer Iron deficiency anaemia	BMI 30 BP 140/80 Pulse 80 Resp 16	No impairment	Hb 102 Iron deficiency anaemia - low ferritin and iron Albumin 30	Aspirin Clopidogrel Fish oil Ramipril	Independent	Nil	Smoker, 30 pack years, 20/day 5-6 standard drinks/week
4	Tim, 58yo, Male (transgender)	Korean, English	Chef, single, lives alone, no family in Australia	T2DM	BMI 27 BP 120/70 Pulse 70 Resp 14	No impairment	HbA1c 9.5%	Metformin Dapagliflozin	Independent	Hernia repair	Non-smoker, 5-6 standard drinks/week
5	Margaret, 80yo, Female	English	Retired, widow, no children, lives alone with niece close by	Atrial fibrillation T2DM Mild renal impairment Urinary incontinence	BMI 19 BP 110-909 Pulse 90 Resp 15	No impairment Prior post-op delirium	CrCl 50 mL/min HbA1c 0% Mild anaemia	Apixaban Furosemide Metformin Empagliflozin Insulin Metoprolol Oxybutynin	Independent, assistance with shopping Frailty Score 4	Hysterectomy THR Cataracts	Ex-smoker, independent

6	Mei, 85yo Female	Mandarin, no English	From nursing home, son and daughter in-law support care	Atrial fibrillation PPM CCF Hypertension T2DM Diabetic foot ulcer Early vascular dementia MCA stroke without deficit	Weight 46 kg BP 145/90 Pulse 80 Resp 20	Vascular dementia (RUDAS 18/30) Son is medical decision- maker	Hb 98 Cr 120 / eGFR 28	Apixaban Metformin Sitagliptin Digoxin Simvastatin Telmisartan Furosemide Citalopram Vitamin D Denosumab injection Paracetamol	Dependent ADLs Mobilises with walking frame Frailty Score 7	Carotid endarterectomy NOF repair	Non-smoker, no alcohol
7	Carl, 64yo, Male	English	IT consultant, single, lives alone, rural resident	IHD LHF EF 35% T2DM TIA TURP for cancer Major depression	BMI 36.5 BP 145/88 Pulse 60 Resp 14	No impairment	Cr 188 / eGFR 30 HbA1c 8%	Insulin Metformin Aspirin Clopidogrel Escitalopram Amlodipine Ramipril Tamsulosin Atorvastatin Esomeprazole PRN GTN Fluticasone propionate + Salmeterol inhaler	Independent Frailty Score 4	TURP Coronary stent Cataracts	Smoker, 20/day, 6 standard drinks/day

TAD: Tobacco Alcohol and Disability; BMI: Body Mass Index; BP: Blood Pressure; ACL: Anterior Cruciate Ligament; T2DM: Type 2 Diabetes Mellitus; Hb: Haemoglobin; HbA1c: Glycated Haemoglobin; eGFR: estimated Glomerular Filtration Rate; DAS: Depression Anxiety Stress Scale; IHD: Ischaemic Heart Disease; CrCl: Creatinine Clearance; THR: Total Hip Replacement; PPM: Permanent Pacemaker; CCF: Congestive Cardiac Failure; MCA: Mid Cerebral Artery; RUDAS: Rowland Universal Dementia Assessment Scale; ADLs: Activities of Daily Living; NOF: Neck of Femur; LHF EF: Left Heart Failure Ejection Fraction; TIA: Transient Ischaemic Attack; TURP: Transurethral Resection of the Prostate; PRN GTN: Glyceryl Trinitrate 'as needed'.