

Supplement 4: Table – Information on cases with extreme values excluded from derivation cohort

Variable	Definition	Question(s)	Scale
Age	Date of birth; ID		Continuous
Gender	Male/Female		Nominal
Frailty ¹	1 = if age >=65 AND (Activities of daily living low + 'yes' to 'When going up the stairs between two floors, do you have to rest in between?'+Depression+ Weight loss) >=2	Can you get out of bed or chair yourself? Can you dress or bathe yourself? Can you make your own meals? Can you do your own shopping or sweep the floor? Can you paint a room or mow the lawn? When going up the stairs between two floors, do you have to rest in between? Have you been feeling sad or depressed much of the time? Have you lost weight or decreased your dress size in the past 6 months, without dieting?	Nominal
BMI	Body mass index as calculated by height in metres divided by mass in kg squared.	What is your weight? What is your height?	Continuous
Questionnaire reliability ²	Health literacy as measured by confidence in filling forms 0 = Extremely confident 1 = Quite confident 2 = Somewhat confident 3 = A little confident 4 = Not at all confident	How confident are you in filling out medical forms by yourself? Not at all confident A little bit confident Somewhat confident Quite confident Extremely confident	Ordinal
Patient incompletely informed about the procedure ³	The patient does not know how to prepare for the procedure, what to expect in the operating theatre, what to expect postoperatively in hospital, or what to expect and how to care for him/herself after discharge from hospital. Yes = 0; No = 1; Unsure = 2	Are you satisfied with the information you have received about what to do and what to expect before, during, after the operation, and after discharge? Options: yes, no, or unsure.	Nominal
Cognitive dysfunction ⁴	The patient is unable to complete the questionnaire himself or herself, and the person filling in the form responds "no" to the question Yes = 0; No = 1	Does the patient have the mental ability to complete the form?	Nominal
ADL: low ¹	Activities of daily living 0 = if 'yes' to all of the questions 1 = if 'no' to any of the first four questions AND 'no' to the last question	Can you get out of bed or chair yourself? Can you dress or bathe yourself? Can you make your own meals? Can you do your own shopping or sweep the floor? Can you paint a room or mow the lawn?	Nominal
ADL: cause	1 = If activity status low = 1 and 'Yes' to joint, bone or back problems 2 = If activity status low = 1 and 'Yes' to difficult breathing 3 = If activity status low = 1 and 'Yes' to pain, pressure or discomfort in your chest, neck or arm 4 = Other reason	Can you not do any of these because of joint, bone or back problems? Can you not do any of these because of difficulty breathing? Can you not do any of these because of pain, pressure, or discomfort in your chest, neck or arm? Can you not do any of these because of a reason not mentioned here?	Nominal

Variable	Definition	Question(s)	Scale
ASA PS self-assessment ⁵	Physical status self-assessment as reported by the patient, based on the ASA PS classification. The categories are defined as follows: 1 = ASA I healthy patient 2 = ASA II mildly affected patient 3 = ASA III severely affected patient 4 = ASA IV threat to life	Are you healthy? OR Have you been suffering from a disease for longer than a few months? If yes, Does the disease affect your daily life only mildly; that is, you can continue with your daily life as previously? OR Does the disease affect your daily life severely; that is, the disease does not allow you to continue with your daily life as previously? OR Is the disease a constant threat to life; that is, the disease is so severe that you must stay in bed to survive?	Ordinal
Indication for surgery: effect	0 = 'no' to the question 1 = 'yes' to the question	Is the disease(s) mentioned above the reason for having the operation?	Nominal
Severity of acute diagnosis	Equals self-assessment score if indication for surgery=1, otherwise = 0	As above	Ordinal
Activity status count	Adopted from Duke's Activity Status Index. Higher score = higher activity status to a maximum of 23.45: Take care of self (e.g. eating, dressing, bathing, using the toilet) Walk indoors Walk 1–2 blocks on level ground Climb a flight of stairs or walk up a hill Do light work around the house (e.g. dusting, washing dishes) Do moderate work around the house (e.g. vacuuming, sweeping floors, carrying in groceries) Do yardwork (e.g. raking leaves, weeding, pushing a power mower)	+2.75 Can you dress or bathe yourself? +1.75 Can you get out of bed or chair yourself? +2.75 Can you make your own meals? +5.5 Can you climb two flights of stairs without stopping? +2.7 Can you do your own shopping or sweep the floor? +3.5 +4.5 Can you paint a room or mow the lawn?	Continuous
HT: Diagnosed ⁶	If yes, duration in months since diagnosis.	Do you have high blood pressure? If yes, since when?	Continuous
HT: Treatment ⁷	Does the patient take the medication regularly? Yes = 0; No = 1	Do you take medication for high blood pressure regularly?	Nominal
Ischaemic heart disease: diagnosed	Duration in months since first of any of events.	Have you ever been told that you have a problem with the blood supply to your heart? If yes, when? Have you ever had a heart attack? If yes, when? Have you ever received a stent in the blood supply to your heart? If yes, when?	Continuous

Variable	Definition	Question(s)	Scale
		Have you ever had a bypass or surgery of the blood supply to your heart? If yes, when?	
IHD: most recent event	Months since most recent MI, stent or bypass		Continuous
Cardiac failure: Diagnosed ⁸	If yes, months since diagnosis.	Have you ever been told that you have a weak heart? If so, when?	Continuous
Valvular heart disease	0 = if 'no' to all questions 1 = if 'yes' to any of the questions.	Do you have an abnormal heart valve? Have you had surgery to a heart valve? Have you had rheumatic fever?	Nominal
Important arrhythmia ⁹	If yes to palpitations and valvular heart disease+cardiac failure+ischaemic heart disease < 1 and no to questions = 0 If yes to palpitations and valvular heart disease+ cardiac failure+ ischaemic heart disease ≥ 1 or yes to any question = 1	If yes, have you felt dizzy or blacked out when this happens? Have you been diagnosed with abnormal heart rate or rhythm? Do you have an implanted pacemaker or defibrillator?	Nominal
Cardiovascular and neurological alarm ¹⁰	0 = 'No' to all questions 1 = 'Yes' to any question	Have you had blackouts without warning? Have you felt dizzy or blacked out when exercising? Do you have any weakness or numbness in your arms or legs?	Nominal
Framingham heart failure ¹¹	1 = if 'yes' to either of the first two questions and 'yes' to two of the last three questions. 0 = Other than 1	Do you wake up at night because of difficulty breathing? Do you get short of breath when lying flat on your back? Do your ankles or legs swell? Do you get short of breath when climbing stairs? Do you wake up coughing at night?	Nominal
Vascular system compromise ¹²	0 = if 'no' to all questions 1 = if 'yes' to symptoms 2 = if 'yes' to diagnosis or surgery (Enter highest number related to 'yes' answer)	Do you have pain in the muscles of your legs during exercise? Do you have cold or blue hands or feet? Have you been diagnosed with disease of the large blood vessels such as the aorta? Have you had surgery to the large blood vessels?	Ordinal
Lung disease	0 = if 'no' to all questions 1 = if 'yes' to previous consultation 2 = if 'yes' to symptoms in last month 3 = if 'yes' to hospitalisation 4 = if 'yes' to home oxygen (Enter highest number related to 'yes' answer)	Have you ever had to see a doctor for lung problems of any kind? If yes, have the lung problems affected you during the last month? Have you ever been admitted to hospital for any lung problems? Are you using oxygen at home?	Ordinal
Current smoker in the past year	0 = 'no' to question 1 = 'yes' to question	Have you been smoking cigarettes in the past year?	Nominal
Pack years smoking	If 'yes' to current smoking and 'yes' to previous smoker then number of packs of cigarettes per day times the number of years the patient has been smoking.	Did you smoke before but stopped? How many years have you been smoking/did you smoke? How many cigarettes per day do you smoke/did you smoke?	Continuous

Variable	Definition	Question(s)	Scale
HIV	If 'yes', duration in months since diagnosis	Do you have HIV? If yes, since when?	Continuous
History of tuberculosis	Previous treatment for tuberculosis Yes = 1; No = 0	Have you ever been treated for tuberculosis?	Nominal
History of malignancy	0 = No to all questions 1 = Previous cancer surgery 2 = Previous chemo- or radiation therapy 3 = Current chemo- or radiation therapy 4 = Metastatic cancer If yes to more than one question, the highest ordinal number for a question where the answer 'yes' is entered.	Have you ever been told you have cancer? Have you ever had an operation for cancer? Have you ever received medication or radiation for cancer? Are you currently receiving medication or radiation for cancer? Have you been told that the cancer is not under control, or has spread?	Ordinal
History of renal dysfunction ⁸	0 = No to all questions 1 = Previous renal dysfunction (acute) 2 = Current renal dysfunction (chronic) 3 = Previous dialysis 4 = Current dialysis If yes to >1 question, highest ordinal number for question where answer 'yes' entered.	Have you ever had any kidney problems? Do you currently have kidney problems? Have you ever received dialysis? Are you currently receiving dialysis?	Ordinal
History of liver disease	0 = No to all questions 1 = Jaundice episode as an adult or previous diagnosis liver disease 2 = Current liver disease symptoms 3 = Cirrhosis	Have you ever had jaundice (yellow skin or eyes) as an adult? Have you been told that you have a liver disease? Do have symptoms of the liver disease at the moment? Do you have scarring of the liver or long-term liver damage?	Ordinal
Hypercholesterolemia: diagnosed	If yes, duration in months since diagnosis.	Do you have high cholesterol? If yes, since when?	Continuous
Hypercholesterolemia: management	Duration in months of therapy.	Do you use medication for the high cholesterol? If yes, for how long?	Continuous
Metabolic syndrome risk	Are you fat around the waist? DM: diagnosed; HT: diagnosed Hypercholesterolemia: diagnosed If < 3 of variables listed = 0 If 'yes' to question and >1 variables = 1 If 'no' to the question and 3 variables = 1	Are you fat around the waist?	Nominal
Variable	Definition	Question(s)	Scale
DM: diagnosed	If yes, duration in months since diagnosis.	Do you have diabetes (high blood sugar)? If yes, since when?	Continuous
DM: requiring insulin	If yes, duration in months of insulin therapy.	Do you use insulin for the diabetes (high blood sugar)? If yes, for how long?	Continuous
Nutritional risk	0 = If 'no' to all of the questions. 1 = If 'yes' to any of the questions or BMI < 20.5 2 = if 'yes' to weight loss or BMI < 18.5 3 = If 'yes' to weight loss or BMI < 18.5 and age ≥ 70 years or major surgery	Have you eaten less than usual or changed your eating habits in the past two weeks? Have you lost weight or decreased your dress size in the past six months, without dieting?	

Variable	Definition	Question(s)	Scale
VTE risk	0 = if 'no' to all questions and variables other than below 1 = if 'yes' to any question or: Age \geq 60 years ADL status other than 0 History of malignancy other than 0 Pregnancy other than 0 BMI \geq 30 HIV other than 0	Have you had a blood clot in the deep veins or in your lung previously? Do you take female hormones, the pill, or do you receive any contraceptive injections? Do you have a disease that causes your blood to clot abnormally fast? Have you been diagnosed with inflammatory bowel disease?	Nominal
Bleeding risk	0 = if 'no' to all questions 1 = if 'yes' to any of the questions.	Do you use any medication to make the blood thin? Do you have a disease that prevents your blood from clotting?	Nominal
Cerebrovascular incidents	0 = if 'no' to all questions 1 = if 'yes' to transient weakness/blindness 2 = if 'yes' to stroke	Have you suffered from short-lived weakness in your arms or legs, or short-lived blindness? Have you had a stroke?	Ordinal
Depression and chronic pain ¹³	Depression: 0 = if 'no' to all questions 1 = if 'yes' to question, and 'no' to chronic pain Depression and chronic pain: 1 = if 'yes' to depression question and 'yes' to chronic pain Depression and chronic pain on treatment: 1 = if 'yes' to taking medication	Have you been feeling sad or depressed much of the time? Are you in constant pain for any reason? If yes, are you taking medication?	Nominal
Upper GIT dysfunction	0 = if 'no' to all questions 1 = if 'yes' to any of the questions.	Do you get heartburn? Do you have any difficulty in swallowing?	Continuous
Airway risk	0 = if 'no' to all questions 1 = if 'yes' to any of the questions.	Do you have any narrowing in your mouth, throat, or air pipe that makes your breathing difficult or noisy? Are you aware of any difficulty to place a tube into your windpipe to help your breathing during a previous operation?	Nominal
OSA: risk ¹⁴	0 = Fewer than three of the following: 'Yes' to any of the questions HT: diagnosed = > 0 BMI \geq 35 Age \geq 50 years Male gender 1 = 3 or more of the factors/questions 'Yes'	Do you snore loudly? Do you often feel tired, fatigued, or sleepy during daytime? Has anyone seen you stop breathing during sleep?	Nominal
OSA: diagnosis	Obstructive sleep apnoea previously diagnosed. If 'yes' to question, duration in months.	Has a doctor diagnosed you with sleep apnoea? If yes, when?	Continuous
Alcohol use ¹⁰	0 = if score < 3 in women, < 4 in men 1 = if score 3 to 6 in women, 4 to 7 in men 2 = if score 6 to 9 in women, 7 to 10 in men 3 = if score > 8 in women, 10 and more in men	How often did you have a drink with alcohol in the past year? 0 = Never 1 = Monthly or less 2 = Two to four times a month 3 = Two to three times a week 4 = Four or more times a week	Ordinal

Variable	Definition	Question(s)	Scale
		<p>How many drinks did you have on a typical day when you were drinking in the past year?</p> <p>0 = None, I do not drink 0 = 1 or 2 1 = 3 or 4 2 = 5 or 6 3 = 7 to 9 4 = 10 or more</p> <p>How often did you have six or more drinks on one occasion in the past year?</p> <p>0 = Never 1 = Less than monthly 2 = Monthly 3 = Weekly 4 = Daily or almost daily</p>	
History of perioperative anaesthesia-related complications	<p>0 = none 1 = if the patient answers 'yes' to any of the questions.</p>	<p>Have you had an abnormal reaction to an anaesthetic? Are you aware of any difficulty to place a tube into your windpipe to help your breathing during a previous operation? Have you ever had nausea and/or vomiting after surgery? Have you ever had prolonged confusion after surgery? Did you have an unexpected blood transfusion after surgery? Were you ever admitted to ICU unexpectedly after surgery? Were you ever in hospital for longer than expected after an operation?</p>	Nominal
Anaesthetic family history	<p>0 = none 1 = if the patient answers 'yes' to any of the questions.</p>	<p>Do you have a family history of any of the following: Someone died because of anaesthetic problems Someone stayed in hospital for longer because of anaesthesia problems Malignant hyperthermia Scoline Apnoea Porphyria</p>	Nominal

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