

Organ system	Category	Description (red=not in line with Salvi et al., green= I added this based on Salvi)	CHRIS release 5000 -> Coding and variables used (red=questions)	CHRIS release 10000 -> Suggested changes/additions
Heart	Heart 1	Remote myocardial infarction (MI), more than 5 years ago. Occasional angina or asymptomatic valvular heart disease.  Final guideline: Remote myocardial infarction (MI), more than 5 years ago. Occasional angina or asymptomatic valvular heart disease.	<b>Remote myocardial infarction:</b> for those with an MI (x0mi09 equals "Yes") use x0_examd (date of exam) - the most recent year of an MI (based on columns x0mi11a, x0mi12a, x0mi13a, x0mi14a, x0mi15a). If that difference is larger than 5 years we have a remote myocardial infarction. We will set the date of the MI in the year to the 15.06. and, for those that don't remember the year, we set the year to 1999 (assuming that if one does not remember the year it must be more than 5 years ago). <b>Occasional angina pectoris:</b> that's quite blurry definition. Here we'll use x0mi00 (have you ever had pain or discomfort in your chest). <b>Asymptomatic valvular disease:</b> here we're using x0af01 (Has a doctor ever told you that you have a valvular heart disease or another heart disease?). We're accepting here the high chance to get individuals that have actually a higher CIRS score, but that's fine. PRN heart medication: x0dd03 (ATC code) starts with C01 (cardiac therapy). Individuals having to take medication on a daily basis will be scored higher later. <b>Valvular disease: any murmur indicating valvular problems (x0af18 equals "Yes").</b>	<b>MI:</b> OK  <b>Occasional angina pectoris:</b> I would maybe be more strict here. With x0mi00 we have 2000 subjects, and with the further question the number of subjects reporting any symptoms are much lower. When looking at the definition "occasional (exertion) angina", I got the impression that "exertion" means pain during physical activity (according to American Heart Association). Maybe we can use a combination of x0mi00, x0mi01 (Does pain come when climbing or walking uphill?) and x0mi04 (Does the pain vanish within 10min if you rest)? -> Then we would have the less severe cases?  <b>Asymptomatic valvular disease:</b> We cannot identify asymptomatic valvular disease. But maybe use variable x0hf12 (Valve disease-> derived variable)-> here we take everyone and we cannot distinguish who got operation. Medication will be scored higher in the next section.
	Heart 2	CHF (Congestive heart failure) compensated with medication, daily anti-angina medication, left ventricular hypertrophy, atrial fibrillation, bundle branch block, daily antiarrhythmic drugs, <b>PMK placement for asymptomatic bradycardia (relieved by Holter EKG monitoring), valvular disease requiring medication</b>	<b>Congestive heart failure (CHF) treated with medication:</b> x0hf08 or ATC codes for CHF treatment: B01AA, C01AA, C01CA08-C01CA14, C03A, C03C, C07AB, C02E, C02L, C09A, C09B, C08DA51, C09C, C03DA01 (taken from [5]). Daily anti <b>angina pectoris</b> medication (ATC C01D), daily <b>antiarrhythmic drugs</b> (ATC C01B). Presence of <b>left ventricular hypertrophy</b> (x0hf05 equals "Yes"), <b>atrial fibrillation</b> (x0af13 "Yes") or <b>bundle branch block</b> (x0af20 being "Left Bundle Branch-Block (LBBB)" or "Right Bundle Branch-Block (RBBB)"). <b>Pacemaker carrier</b> (x0af11 "Yes").	<b>CHF with med:</b> ok, but maybe take HF & med? <b>Daily anti-angina med:</b> ok <b>Daily antiarrhythmics:</b> ok <b>Hypertrophy:</b> ok <b>AF:</b> ok <b>Bundle branch block:</b> ok (x0af20=3 or 4) <b>Pacemaker carrier:</b> ok <b>valvular disease:</b> Maybe use variable x0hf12 (Valve disease-> derived variable) <b>WITH medication</b>
	Heart 3	Previous MI within 5 years, abnormal stress test, status post percutaneous coronary angioplasty or coronary artery	<b>MI</b> within 5 years, <b>abnormal stress test</b> , status post <b>percutaneous coronary angioplasty</b> or coronary artery <b>bypass</b> (x0mi18 equals "Yes"), any <b>other</b>	<b>MI:</b> ok <b>Abnormal stress test:</b> We don't have information on a stress ECG.

		bypass graft surgery or other cardiac surgery (valve replacement), <b>moderate CHF of complex medical treatment, bifascicular block</b> , PMK placement for cardiogenic syncope, pericardial effusion or pericarditis	<b>heart surgery</b> (x0mi17 equals “Yes”), <b>pacemaker</b> for cardiogenic syncope (x0af11 AND x0af14 equal “Yes”).	<b>Angioplasty/Bypass</b> : ok <b>PMK</b> placement for cardiogenic syncope, pericardial effusion or pericarditis: ok, but to be discussed
	Heart 4	<b>Acute coronary syndrome</b> , unstable angina or <b>acute MI</b> ; intractable CHF; Marked activity restriction secondary to cardiac status	<i>instable angina, intractable CHF</i> ; don’t think we have any here, since such individuals should be in the hospital anyway.	ok
Hypertension	Hyper 1	Borderline hypertension, hypertension compensated with salt restriction and weight loss, <b>drug free (when drug therapy is indicated, but the patient does not take meds, the score is at least 2)</b> .  <b>Note</b> : We use ESC/ESH Guideline to define hypertension	x0bl01 equals “Yes” (doctor said to have high blood pressure). x0bp02 (diastolic blood pressure, mean of 3 measurements) > 90. Note: we’re not excluding individuals taking medication, as they will be handled by the following ratings.	Borderline hypertension: x0bp01 (systolic BP, mean of 3 measurements) 130 to 139mmHg; x0dp01 (diastolic BP, mean of 3 measurements) 85 to 90mmHg  OR  <b>Self-reported Hypertension and NO MED (drug data or self-reported)? Note: subjects with medication will be scored later</b>
	Hyper 2	Daily antihypertensive meds, hypertension controlled by 1 pill therapy (even fixed doses combinations)	<b>Daily antihypertensive medication or diagnosed hypertension without treatment:</b> antihypertensive medication according to [6]: ATC codes C02 (Antihypertensives), C03 (Diuretics), C07 (Beta blocking agents), C08 (Calcium channel blockers) and C09 (Agents acting on the renin-angiotensin system) with daily usage. Note: we’ll take ATC code C02 as is, but require for the others that the participant stated to have high blood pressure (x0bl01). Also, individual stating to have high blood pressure, and having high blood pressure (x0bp20 being “Hypertension” grades 1, 2 or 3) (regardless of any treatment) get a 2.	<b>Daily antihypertensive medication according to [6]:</b> ATC codes C02 (Antihypertensives), C03 (Diuretics), C07 (Beta blocking agents), C08 (Calcium channel blockers) and C09 (Agents acting on the renin-angiotensin system) with daily usage. ATTENTION: ONLY ONE TREATMENT ALLOWED  AND  Self-reported diagnosis of hypertension
	Hyper 3	Multiple antihypertensive meds.	Hypertension with multiple medication: we require x0bl01 and multiple daily medications (any of the above listed ATC codes).	Ok (2 or more)
	Hyper 4	Not controllable hypertension.	Diagnosed hypertension and measured Hypertension grade 3 regardless of any treatment (x0bp20).	Ok

<p>Vascular + <b>Hematopoietic</b></p> <p><b>Artery disease:</b> carotid atherosclerosis, peripheral arteries disease (PAD), aneurysms (every site); <b>Venous disease:</b> venous insufficiency, varices, deep venous thrombosis (DVT), pulmonary embolism, primary pulmonary hypertension; <b>Hematopoietic disease:</b> anemia, leucopenia, thrombocytopenia, hematological malignancy; <b>Lymphopoietic disease:</b> chronic lymphatic edema, lymphoma, spleen and thymus disease; <b>Immunologic disease:</b> systemic lupus erythematosus, systemic sclerosis (scleroderma), sarcoidosis, hypersensitivity</p>	Vasc 1	<p>varices, lymphedema, venous insufficiency, hemoglobin levels (10-12g/dl women, 12-14 g/dl men), <b>carotid stenosis &lt;70%, anemia of chronic “inflammatory” disease</b></p>	<p><b>varices</b> (x0ci03 equals “Yes”), <b>phlebitis</b> (x0ci04 equals “Yes”), <b>lymphedema</b> (x0hf03 equals “Yes”). <b>Vasculitis (including lupus erythematosus, x0cd14 equals “Yes”).</b> <b>Hemoglobin levels:</b> (x0lp41 is provided in g/dl). Scanning also other diseases for additional cases. Note that we should re-scan them also for higher scores since they contain some more severe diseases (anemie, anemi, krapmfader, variz, venen)</p>	<p><b>Varices:</b> ok</p> <p><b>Phlebitis:</b> why in this category? Because it is a symptom of venous insufficiency? SWISS (<b>Phlebitis</b> or <b>venitis</b> is the <u>inflammation</u> of a <u>vein</u>, usually in the <u>legs</u>.)</p> <p><b>Lymphedema:</b> ok</p> <p><b>Vasculitis:</b> why in this category? (inflammation) -&gt; SWISS</p> <p><b>Hemoglobin levels:</b> ok</p> <p><b>Anemia</b> of inflammation: that is caused by an underlying <b>inflammatory disease</b>. It is diagnosed when serum iron concentrations are low despite adequate iron stores, as evidenced by serum ferritin that is not low; serum iron (x0lp27), serum ferritin (x0lp28)?</p> <p>Carotid stenosis: No info</p>					
	Vasc 2	<p><b>Previous</b> Deep venous thrombosis (DVT), <b>one symptom</b> of atherosclerotic disease, daily antithrombotic or <b>antianaemic</b> medication. Hemoglobin levels (8-10 women, 10-12 men), leukocyte count (2000-4000/mm3), platelet count (50000-150000/mm3), <b>PAD IIa-IIb by Fontaine; carotid stenosis &gt;70%; aortic aneurysm &lt;4 cm; anemia secondary to iron, B12 vitamin or folate deficiency, or to chronic renal failure</b></p> <p><b>PAD Fontaine classification</b></p> <table><tr><td>Grade</td><td>Symptoms</td></tr><tr><td>Stage I</td><td>Asymptomatic, incomplete blood vessel obstruction</td></tr><tr><td>Stage II</td><td>Mild claudication pain in limb</td></tr></table>	Grade	Symptoms	Stage I	Asymptomatic, incomplete blood vessel obstruction	Stage II	Mild claudication pain in limb	<p><b>deep venous thrombosis</b> (DVT, x0ci06) or any <b>atherosclerotic disease</b> (x0ci01) or <b>daily antithrombotic</b> or <b>antianaemic</b> medication (ATC codes B01 and B03) or <b>vasculitis (including lupus erythematosus, x0cd14)</b>. Hemoglobin levels: 8-10g/dl women, 10-12g/dl men. Total leukocyte count 2000-4000/mm{^3}. Thrombocyte (platelet) count 50000-150000/mm3. We’re also screening other diseases for e.g. aneurysma.</p>
Grade	Symptoms								
Stage I	Asymptomatic, incomplete blood vessel obstruction								
Stage II	Mild claudication pain in limb								

		<table><tr><td>Stage IIA</td><td>Claudication at a distance &gt; 200 m</td></tr><tr><td>Stage IIB</td><td>Claudication at a distance &lt; 200 m</td></tr><tr><td>Stage III</td><td>Rest pain, mostly in the feet</td></tr><tr><td>Stage IV</td><td>Necrosis and/or gangrene of the limb</td></tr></table>	Stage IIA	Claudication at a distance > 200 m	Stage IIB	Claudication at a distance < 200 m	Stage III	Rest pain, mostly in the feet	Stage IV	Necrosis and/or gangrene of the limb		<p><b>PAD:</b> goes together with x0ci01, we cannot distinguish between severity</p> <p>No info on carotid stenosis!</p> <p><b>Anemia</b> due to iron: iron (x0lp27), serum ferritin (x0lp28)</p> <p><b>ANEMIA IN GENERAL:</b> Difficult to identify cause in CHRIS3, therefore maybe just go with hemoglobin values?</p> <p><b>Thrombo and Leuko:</b> ok</p> <p><b>Renal failure:</b> x0ki04c (if =4 (dialysis) or =5 (transplant))</p>
Stage IIA	Claudication at a distance > 200 m											
Stage IIB	Claudication at a distance < 200 m											
Stage III	Rest pain, mostly in the feet											
Stage IV	Necrosis and/or gangrene of the limb											
	Vasc 3	DVT or recent DVT (<6 months ago), two or more symptoms of atherosclerosis. Angioplastic surgery. Hemoglobin levels (< 8g/dl women /<10g/dl in men), leukocyte count (<2000/mm3), platelet count (< 50000/mm3), PAD Fontaine III or recent/previous angioplasty (with or without stenting), dyserythropoietic anemia	again, deep venous thrombosis and all other (will not test them again). Angioplasty (with or without stenting). Hemoglobin levels: < 8g/dl women, < 10g/dl men. Leukocyte count < 2000/mm3. Platelet count < 50000/mm3.	<p><b>DVT-&gt;</b> we cannot assess time of diagnosis</p> <p><b>Atherosclerosis-&gt;</b> We cannot distinguish how many symptoms</p> <p><b>Angioplasty-&gt;</b> ok</p> <p><b>Hemo, Leuko, platelet-&gt;</b> ok</p> <p><b>PAD-&gt;</b> we cannot distinguish severity</p> <p><b>dyserythropoietic anemia -&gt;</b> through free text maybe?</p>								
	Vasc 4	pulmonary embolus, atherosclerosis with surgery, hematological or vascular malignancy, vascular surgery	Pulmonary embolus (x0ci05). Surgery related to atherosclerosis. Any hematologic malignancy (leukemia, multiple myeloma).	<p><b>Pulmonary embolus-&gt;</b> ok</p> <p><b>Atherosclerotic surgery-&gt;</b> again stent/angioplasty?</p> <p><b>Hematologic malignancy -&gt;</b> ok</p>								
Respiratory  In this category we consider COPD, asthma, emphysema, restrictive pulmonary interstitial	Resp 1	repeated acute bronchitis. Currently treated asthma (prn inhalers). Cigarette smokers: 10-20 pack years.	Search for bronchitis and asthma in other diseases. Medication for asthma (inhalers etc): ATC code R03. Smoker: x0sm55 (All smoking lifetime pack-years) between 10 and 20.	<p><b>Bronchitis/Asthma-&gt;</b> ok</p> <p><b>Medication asthma-&gt;</b> ok</p> <p><b>Smoking-&gt;</b> this variable includes cigarettes, cigars and pipe as well. X0sm52 would only</p>								

lung diseases, malignancies of lung and pleura, pneumonia, and smoking status too.				use cigarettes (as requested in the guideline), according to the SWISS version, we should also distinguish between current and former smokers (if smoking stopped 5 years ago-> score 2, if longer then score 1?)-> we can use x0sm40 (How old were you when you stopped smoking).
	Resp 2	Instrumental diagnosis of COPD or pulmonary interstitial disease (x-ray, TC, spirometry); daily prn inhalers ( $\leq 2$ pharmacological classes); two or more episodes of pneumonia in the last 5 years; cigarette smoker $< 20$ but $< 40$ pack years	Search for COPD or pneumopathie in other diseases. We might miss some patients here, but might get them with the medication: daily theophylline (ATC R03DA04) or daily inhalers (R03). Search for Lungenentz in other diseases.	<p><b>COPD</b>-&gt; ok</p> <p><b>Med</b>-&gt; ok, why exactly focus on theophylline? I did now not include specifically theophylline but took only inhalers</p> <p><b>Pneumonia</b>-&gt; ok</p> <p><b>Smoking</b>-&gt; ok, but again same comments as before</p>
	Resp 3	exertion dyspnea secondary to limited respiratory capacity, not well controlled by daily meds; required oral steroids for lung disease; daily prn inhalers (3 pharmacological classes); acute pneumonia treated as an outpatient	Medication: oral steroids, daily use of inhalers, 3 different pharmacological classes. Note however that individuals might take oral GCs for other reasons too. Can not test: limited respiratory capacity. Also, we don't expect to have any individuals with acute pneumonia.	<p><b>Med</b>-&gt; ok, agree with GC use</p> <p>Ok with rest</p>
	Resp 4	Chronic supplementation of oxygen; respiratory failure requiring assisted ventilation, or previous (at least one episode); any lung or pleural neoplasm; acute pneumonia requiring hospitalization	Lung cancer. Will not test for the other stuff.	Ok -> Someone who is severely ill most likely has not participated in the study
Eyes, ears, nose & throat, and larynx	EENT 1	Corrected vision, chronic sinusitis or mild hearing loss.	We have to screen the other diseases for any hearing impairment, any eye related problem or chronic sinusitis.	Maybe add "linsen", specify more "höhrprob", "nebenhöhl", "hornhaut", "laser", "oper"
	EENT 2	Corrected vision and difficulty reading newspapers. Requires hearing aid. Chronic sinonasal complaints requiring medication. Require medication for vertigo.	Hearing aid (search other diseases). (Daily) anti-vertigo medication. Not checked: Difficulties reading newspaper.	Ok

	EENT 3	Partially blind (requires an escort). Unable to read newspaper. Hearing impaired with hearing aid. Laryngeal dysphonia (not neurological dysarthria)	partially blind, hearing impaired. Can only screen other diseases here. Actually, it is not very likely that we've got partially deaf or blind individuals in CHRIS.	Ok
	EENT 4	Functional blindness or functional deafness. Laryngectomy. Requires surgical intervention for vertigo.	Can only check for deafness and blindness here.	Ok
Upper gastrointestinal tract	UGI 1	Hiatal hernia, GERD or heartburn requiring medication. Past ulcer ventriculi or duodenali (>5 years). previous H. Pylori eradication therapy (>5 years ago)	Hiatal hernia, heartburn. Past gastric or duodenal ulcer. We screen for these in the other diseases columns, not (yet) considering the year (these within 5 years will then be covered by score 2). We will also consider all participants taking any antacid medication or drugs for peptic ulcer and GORD (without considering the frequency yet).	Ok for screening: maybe add "H.Pylori", "reflux" to screen for GERD/GORD  Med for Ulcer and GORD ok, go also for gastritis
	UGI 2	Needs daily H2 blocker (proton-pump inhibitors) or antacids. Documented gastric or duodenal ulcer within five years.	Daily medication with antacids or drugs for peptic ulcer and GORD: will use the medication information for this. Gastric or duodenal ulcer or Hwithin the last 5 years: screen the other diseases columns considering also the year.	Ok
	UGI 3	Active ulcer. Guiac positive stools. Any swallowing disorder or dysphagia. Chronic pancreatitis requiring medication with pancreas enzymes. Past acute pancreatitis.	Past acute or chronic pancreatitis: search in other diseases for reported cases. Medication with pancreas enzymes: consider medication with ATC A09AA02. Not tested: active gastritis or duodenal ulcer (such persons will most likely not show up), blood in stool etc.	Ok, but maybe search for "blut+stuhl"
	UGI 4	Gastric cancer. Perforated ulcer. acute pancreatitis. previous gastric surgery because of cancer or ulcer	Stomach surgery: evaluate other surgery columns and search for related terms. Any cancer in upper GI: searched in cancer related columns. Not evaluated: blood in stool etc.	Ok
Lower gastrointestinal tract	LGI 1	Constipation managed with prn medication. Active hemorrhoids. Status post-hernia repair; any hernia related surgery. Irritable bowel syndrome (few symptoms).	Constipation, hemorrhoids, any hernia related information, irritable bowel syndrome: we screen for these in the other diseases columns and for hernia also in /other surgery information. Note: we might have many false positives here, as we can not distinguish between active and past hemorrhoids, or also complications from a hernia operation. In addition we add all individuals that take	Information on constipation only asked in V1 (for 5000)  Ok with screening

			constipation-related medications (ATC code A06).	
	LGI 2	Requires daily bulk laxatives or stool softeners. Diverticulosis. <b>Untreated hernia.</b> Previous chronic-inflammatory intestinal disease (more than 5 years ago).	<b>Daily laxatives or stool softeners:</b> will use the medication information for this. <b>Chronic-inflammatory bowel disease:</b> screen other diseases and in addition use x0cd04. Diverticulosis screen also other diseases. We're not considering here the onset of disease; this will be done for the next score. What is quite puzzling is that while x0cd04 was dropped in version 2, we get still 74 individuals that report to have this disease.	Ok -> and check the concern  I screened here specifically for "darmdivertikel" or "diverticulosis". If we take every "divertikel" we get also other diseases (divertikel in bauchhöhle, divertikel in trachea).
	LGI 3	Bowel impaction in the past year. Daily use of stimulant laxatives or enemas. Previous chronic-inflammatory intestinal disease (within last 5 years).	<b>Chronic-inflammatory bowel disease within 5 years:</b> screen again the other diseases considering in addition the year of onset; for the specific question (x0cd04) we use the information whether an event occurred within the last year. <b>Daily use of stimulant laxatives:</b> use medication data for that.	Ok
	LGI 4	Hematochezia/ <b>active bleeding</b> from lower GI; diverticulitis flare up. Status post bowel obstruction. Bowel (colon) carcinoma. Current inflammatory bowel disease.	Colon cancer: screen other diseases and the cancer questions. All others (e.g. diverticulitis flare-up) can not be determined.	Ok
Hepatic	Hepa1	History of hepatitis. Cholecystectomy.	<b>Hepatitis:</b> screen other diseases for hepatitis. <b>Cholezystektomy:</b> screen other diseases for all gall bladder related issues (including surgeries). Add also all those that have x0cd01 true. Again we're adding also individuals that might fall into higher categories, but these will be re-assigned later.	Ok
	Hepa2	Cholelithiasis. Daily or heavy alcohol use within five years. Hepatitis within five years <b>or any other liver disease (hemochromatosis, primary biliary cirrhosis) with mildly elevated transaminases (up to 3x of normal).</b>	<b>Elevated transaminases:</b> check Alanine transaminase levels (ALT; x0lp11) have to be between (40,120] for men, between (35,105] for women. <b>Cholelithiasis:</b> check other diseases for gall stones. <b>Alcohol abuse:</b> x0al01 (within the last 12 months, how often have you drunk alcoholic drinks: daily 7). In addition: x0al02a and x0al02b (how frequent have you drunk 5 or more drinks at a single occasion); score higher than 6. <b>Hepatitis within 5 years:</b> check other diseases and	Ok, but add other liver diseases in screening? "Zirrhose", "Hämochromatose" -> these caught by transaminase levels, but what if treated?

			evaluate whether it happened within the last 5 years. In addition, check x0cd01f (free text liver disease) and x0cd01b (year being diagnosed). Note most of the below matched individuals are due to their alcohol consume.	
	Hepa3	Chronic hepatitis or any other liver disease with marked elevation of transaminases (>3-times normal values);Elevated bilirubin (total >2).	Chronic hepatitis or any other liver disease with elevated transaminases: ALT x0lp11 > 120 for men, > 105 for women. Elevated bilirubin: total bilirubin x0lp14a > 2.	Ok
	Hepa4	Biliary obstruction. Any liver or biliary tree carcinoma. Cholecystitis. Pancreatitis. Active hepatitis/liver cirrhosis.	Hepato-biliary carcinoma: screen cancer questionnaire. All other cases (Acute cholecystitis, pnacreatitis, hepatitis or biliary obstruction) can not be scored, as we don't have the corresponding data available. In addition it would be highly unlikely that any individual with such acute diseases could/would participate in the study.	Ok
Renal	Renal 1	Asymptomatic kidney stone or kidney stone passage within the last 10 years. Pyelonephritis within five years. kidney cysts without hematuria	Asymptomatic kidney stone or kidney stone passage within the last 10 years: x0ki07 (Have you ever been told that you have kidney stones?) in combination with x0ki07b (age at diagnosis). Pyelonephritis within five years: x0ki02 (Was it a pyelonephritis) in combination with x0ki02b (age at diagnosis). Alternatively, we could give a 1 to all individuals that report to have had a kidney disease (x0ki00).	Ok, is there a way to catch subjects with kidney cyst without blood in urine? Probably too complicated
	Renal 2	Serum creatinine > 1.5, but lower 3.0 without diuretic or antihypertensive medication (particularly ACE-inhibitors or SRAA blockers); kidney calculi requiring daily meds	Serum creatinine: x0lp07 > 1.5 but lower 3.0. Whether or not individuals take medication is not considered here, but will be for a CIRS score of 3 (i.e. we score here also individuals that will get a score of 3 later). Note: there is no way to infer whether individuals require a daily kidney stone therapy.	Ok
	Renal 3	Serum creatinine > 3.0 or serum creatinine > 1.5 in conjunction with diuretic, antihypertensive or bicarbonate therapy. Current pyelonephritis. nephrosic syndrome; colic symptoms treated as an outpatient	Serum creatinine: x0lp07 > 3.0 or > 1.5 with diuretic (ATC C03) or antihypertensive medication (ATC C02) or ACE inhibitors (ATC C09). In addition we score individuals with a current renal failure (x0ki09 and x0ki09c).	<p><b>Med and lab parameters:</b> ok</p> <p><b>Pyelonephritis current:</b> x0ki02 (Was it a pyelonephritis) in combination with x0ki02b (age at diagnosis).</p> <p>Nephrotic syndrome?</p> <p>Why renal failure here? -&gt; doesn't it go</p>

				together with dialysis?
	Renal 4	Requires dialysis. Renal carcinoma. <b>colic symptoms requiring hospitalization</b>	Requires dialysis: x0ki23 (Are you still on dialysis?). Kidney cancer x0ki06 (Have you ever been told that you had a kidney cancer?), but this was dropped in version 2, thus we have in addition to query the cancer questionnaire.	Ok, and maybe take here renal failure?
<b>Genitourinary</b> -> to be discussed	Urinary 1	Stress incontinence. Hysterectomy or <b>ovariectomy</b> . BPH (prostate hypertrophy) without urinary symptoms.	Stress incontinence, Hysterectomy, BPH: all have to be determined using the other diseases fields. Note that we're scoring here all individuals that report to have problems/issues with incontinence, prostate, bladder, ovary. Higher level scoring will then be done later.	Ok for screening, but add "Hysterektomie" oder "Ovariectomy", "Uterusmyom," Maybe use x0wo08 (Why did your menstruation cease? -> operation)
	Urinary 2	Abnormal pap smear. Frequent UTI (urinary tract infections), three or more in past year <b>in female</b> or current UTI. Urinary incontinence (non stress) in females. BPH with hesitancy or frequency. Any urinary diversion procedure. Status post TURP (transurethral resection of the prostate), <b>indwelling catheter; bladder calculi</b>	We're screening the other diseases columns for: Abnormal pap smear, frequent UTI or current UTI, urinary incontinence, BPH with problems, any urinary diversion procedure and status post TURP. See the pattern queries below for detailed descriptions. Note that we did not find any individuals reporting an abnormal pap smear. For the others we try to identify all those reporting to have frequent infections and inflammations, all that have a BPH with problems and all that have a prostate surgery reported.	Ok with screening, maybe add "PAP-Test"?, "verweilkatheter" and "Blasensteine"
	Urinary 3	Prostate cancer in situ (found incidently during TURP). Vaginal bleeding. Cervical carcinoma in situ. Hematuria. <b>Status post urosepsis in past year</b> . <b>urinary incontinence (not stress) in males; bladder polyps</b>	Here we're scoring prostate cancer and cervical cancer. We can not score vaginal bleeding.	Ok, what about the rest?
	Urinary 4	Acute urinary retention. Any GU carcinoma except as above; <b>current urosepsis</b>	Any GU carcinoma except the ones above: again we screen the cancer questionnaire	Ok, but I would maybe not put ovarian cancer in here, because this belongs in score 1 (ovariectomy is performed to treat ovarian cyst or cancer)
<b>Muskuloskeletal and integument</b> -> medication for OA needs to be identified, rest is ok	MBJ1	Medication for <b>osteoarthritis</b> or <b>has mildly limited IADL from joint pathology</b> . Skin infections requiring antibiotics within a year. <b>Skin cancer (except melanoma)</b>	Medication for arthritis: we're scoring here all individuals without considering the frequency of their usage (which will be scored in the next level). The used ATC codes are taken from <a href="http://mchp-appserv.cpe.umanitoba.ca/concept/arthritis_table2.html">http://mchp-appserv.cpe.umanitoba.ca/concept/arthritis_table2.html</a> (taking the main categories and not considering steroids).	Ok, but would discuss whether to screen for "arthritis (German)", as this is a different disease than "arthrose"

			Individuals taking Disease-modifying and anti-rheumatic drugs (DMARDs) are automatically scored, while for all other ATCs (analgesics, non-steroid anti-inflammatory drugs) the individuals have to specify in addition that they have arthritis. We consider also the specific arthritis-related questions that were available in version 1 of the questionnaire. Also we score all individuals reporting to have arthritis. Non-melanotic skin cancer: screen all that report to have skin cancer or melanoma in other diseases and cancer questionnaire. Skin infections requiring antibiotics: screen other diseases if we can get that from there.	
What about protease rule?	MBJ2	Daily anti-osteoarthritis medication. Use of assistive devices. Medication for chronic skin conditions. Melanoma without metastasis. Osteoporosis without vertebral fractures. daily meds for rheumatoid arthritis (except steroids) with a low level of disability	Daily antiarthritic medication: require daily medication for either DMARDs or all other agents in combination with the individual mentioning to have arthritis. Osteoporosis: x0cd10. In addition we score individuals that mention to have artificial joints. Non-metastatic melanoma: we screen the cancer questionnaire for that.	Again, correct for osteoarthritis medication
	MBJ3	Osteoarthritis requiring steroid medication. Osteoporosis with vertebral compression fractures.	Arthritis requiring treatment with steroids: we're combining here the medication information for steroids and the arthritis scoring. Osteoporosis with vertebral fractures: require that individuals have reported osteoporosis and report vertebral fractures.	Ok
	MBJ4	Wheelchair bound for osteomuscular disease. Severe joint deformity. Osteomyelitis. Any bone or muscle carcinoma. Metastatic melanoma.	Any muscle or bone cancer: screen the cancer questionnaire. We will skip however the skin-cancer; if it is a metastatic melanoma there individuals will most likely not show up at the interview.	Ok...
Neurological	Neuro 1	Frequent headaches requiring prn meds without interfering with daily activities. History of transient ischemic attacks (TIA) phenomena (at least one). History of epilepsy.	Frequent headaches: we can use the Migraine questionnaire with questions x0mg02a (version 2, How often have you had headache within the last 3 months?) and x0mg03 (version 1, How often have you had headache?). Transient ischemic attack: we can use questions from the stroke questionnaire: x0st20 (Have you ever been told that you had a transient ischemic attack or a stroke?, version 1) and x0st21	<b>Frequent headache:</b> ok, what about pain killer of most used meds (Aspirin, Ibuprofen, Paracetamol?)  <b>TIA:</b> ok <b>Epilepsy:</b> ok

			(Have you ever been told that you had a transient ischemic attack?, version 2). Epilepsy: we can use specific questions x0ne01 (Has a doctor ever told you that you have epilepsy or febrile seizures, version 1) and x0ne09 (Has a doctor ever told you that you have epilepsy?, version 2).	
	Neuro 2	Chronic headaches requiring daily medication or headaches that interfere with daily activities. Neurodegenerative disease (Parkinson's, Multiple Sclerosis or Amyotrophic Lateral Sclerosis). Epilepsy under treatment. Previous stroke. <b>actual TIA or more than one previous TIA</b>	Chronic headaches: we're scoring individuals with Chronically (more than 15 days per month) in column x0mg02a and Always (more than 5 times per week) in x0mg03. We're not considering the regular medication, since it is not clear for what reason the medication was taken (would be analgesics from ATC code N02). We're also adding individuals that state that the headache interferes with daily activities (question x0mg10); since this matches a large number of individuals we require for these to report to have frequent headaches. Neurodegenerative disease: Parkinson: use question x0pk10 (Has anyone ever told you that you have Parkinson's disease?) and free text search; Multiple sclerosis: x0ne07 (Has a doctor ever told you that you have multiple sclerosis?) and free text search. Amyotrophic lateral sclerosis: only free text search. Epilepsy under treatment: here we score individuals using question x0ne01d (Were you treated for epilepsy or febrile seizures within the last 12 months?) and add in addition individuals that state to have epilepsy AND take medication (ATC code N03) Previous stroke: x0st00 (Have you ever been told by a doctor that you had a stroke?).	<b>Chronic headache:</b> ok <b>Neurodegenerative disease:</b> ok <b>Epilepsy under treatment:</b> ok <b>Previous stroke:</b> ok (we risk to have stroke cases in previous score)
	Neuro 3	Previous stroke with mild residual dysfunction (hemiparesis etc). Any CNS neurosurgical procedures. Neurodegenerative disease with moderate severity, <b>not well controlled by meds; epilepsy in treatment but with periodic crisis.</b>	Stroke with mild residual dysfunction: for individuals with a diagnosed stroke perform a free text search for hemiparesis or speech problems. Any CNS neurosurgical procedures: free text search in other surgery. Neurodegenerative disease with moderate severity: here we can only screen for additional problems of Parkinson's patients using the Parkinson	Ok

			Screening questionnaire.	
	Neuro 4	Acute Stroke or previous/several strokes with residual dysfunctional hemiparesis or aphasia. Neurodegenerative disease - severe. Neurological coma.	Stroke with residual functional hemiparesis or multiple strokes: we can screen again other diseases for respective patterns; the question on the number of strokes was unfortunately dropped in version 2 of the questionnaire, thus we can not use this. Neurodegenerative disease - severe: again, we don't have any specific information available to perform this scoring. However, individuals with a CIRS score of 4 most likely would not be healthy enough to participate in the study.	Ok
Endocrine metabolic system and breast  Anmerkung: Wenn der Patient nicht medikamentös wegen Diabetes oder Dyslipidämie behandelt wird, dies jedoch zur optimalen Beherrschung der Pathologie indiziert wäre (z. B. HbA1c > 7 %, Gesamtcholesterin > 6,47 mmol/l), bewerten Sie die Pathologie gemäss den Laborwerten, durch die der Schweregrad definiert wird.	Endo 1	Diabetes mellitus and/or dyslipidemia compensated with diet. Mild Obesity (BMI 30-35kg/m2). Hypothyroidism in replacement therapy (L-thyroxin), hyperthyroidism caused by Plummer' adenoma surgically treated.	Diabetes. We can use the specific questionnaire for this; we're scoring all individuals here, no matter what treatment etc. Obesity : BMI (x0an03) > 30. Thyroid hormone replacement therapy: check medication information for ATC code H03 (Thyroid Therapy). In addition we score all individuals with a hyperthyroidism (x0th01) and hypothyroidism (x0th02); some of these might get higher scores depending on treatment further below.	<b>Diabetes:</b> ok (now we take all diabetics and later we score them higher based on the treatment required) <b>Obesity:</b> ok <b>Thyroid:</b> Ok with diagnosis from questionnaire, further take medication H03AA01 (L-Thyroxin used for hypothyroidism). I don't know if I would leave everyone here, as according to the next step we would also keep subjects with iodine therapy (H03C) in this score (note-> iodine therapy used to treat hyperthyroidism, usually to destroy the whole thyroid, used instead of surgery).  <b>Dyslipidemia:</b> Diagnosis not straight forward and has not been directly assessed in the questionnaire. Maybe screen in the other diseases ("Dyslipidämie", "Hypercholesterinämie"? Or we use just Total cholesterin >6.47mmol/l as cut-off?)
	Endo 2	Diabetes mellitus requiring insulin or oral agents (haemoglobin ALc<7%). dyslipidemia well controlled by daily meds (c-LDL lower than the recommended target according to the individual global cardiovascular risk);Fibrocystic breast disease. Adipositas	<b>Diabetes requiring insulin:</b> diabetes questionnaire, x0dm03 (treatment with tablets, insulin or both); eventually cross-check with medication for ATC code A10A. <b>Adipositas:</b> BMI 35-45. <b>Pharmacologically treated hyperthyrosis:</b> x0th01 and free text search in other diseases for M. Basedow and M. Plummer requiring	<b>Diabetes:</b> ok <b>Obesity:</b> ok  <b>Thyroid:</b> ok, but again maybe check surgery?  <b>Dyslipidemia:</b> Again screening in text and medication (use of statins)?-> and cross-

		(BMI 35-45). Hyperthyroidism (M. Basedow, M. Plummer) under medication, <i>asymptomatic or surgically treated hyperparathyroidism</i> ;	medication for H03B (antithyroid preparations).	checking c-LDL levels from blood parameters?  <b>Fibrocystic breast disease:</b> screen in text ("fibrozystische Mastopathie")
	Endo 3	Severe adipositas (BMI > 45). Electrolyte disturbance requiring hospital treatment. Diabetes with HbA1c 7-8.5%. <i>dyslipidemia not well controlled (c-LDL higher than the recommended target according to the individual global cardiovascular risk; for instance, c-LDL&gt;100 mg/dl in patients with previous myocardial infarction or stroke), replacement therapy for adrenal failure, symptomatic hyperparathyroidism (for instance, hypercalcaemia)</i>	Severe adipositas: BMI > 45. Diabetes with elevated HbA1c: lab parameter x0lp06a (glycated hemoglobin, HbA1c in percent). We don't expect to have any participants with electrolyte disturbances.	<b>Obesity:</b> ok  <b>Diabetes:</b> ok  <b>Dyslipidemia:</b> Again screening in text and medication?-> and cross-checking c-LDL levels from blood parameters? + information of MI and stroke  <b>Adrenal failure:</b> screen text ("Nebennieren"+"Insuffizienz"); Already put Adrenal hormone replacement here?: check the medication information for regular use of ATC code L02 (endocrine therapy) drugs
	Endo 4	Poorly controlled diabetes (HbA1c > 8.5%). Requires adrenal hormone replacement. Adrenal, thyroid or breast carcinoma.	Poorly controlled diabetes: again, check the glycated hemoglobin values. Adrenal hormone replacement: check the medication information for regular use of ATC code L02 (endocrine therapy) drugs. Cancer screen the cancer questionnaire for that including thyroid cancer: x0th06.	<b>Diabetes:</b> ok  <b>Adrenal failure:</b> same as before? How could we detect acute?  Add adrenal cancer
Psychiatric illness	Psych 1	Minor psychiatric condition. Previous mental health treatment. Treatment for depression more than 10 years ago. Occasional usage of tranquilizers or sleeping pills. <i>Mild cognitive impairment.</i>	Minor psychiatric condition: screen other diseases for corresponding conditions (such as fear, depression etc). Eventually we could add all individuals scored as being depressive based on the CES-D self-admin questionnaire (not performed at present). Previous mental health treatment: most of these should be covered by the previous free text search. Treatment for depression: search in medication information for ATC code N06A (Antidepressants). Occasional usage of tranquilizers or sleeping pills: search in medication information for ATC code N05 (Psycholeptics, including sedatives). Mild early dementia: This should also	Ok

			be covered by the full text search in the other diseases.	
	Psych 2	Major depression within the past 10 years. Mild dementia. Any previous psychiatric hospitalization. Any psychotic substance abuse history including alcoholism (more than 10 years ago).	Major depression within the past 10 years: Can not be inferred directly from the interview questionnaire (including other diseases). Score individuals based on whether they take antidepressives regularly. Mild dementia: free text search in other diseases. Any previous psychiatric hospitalization: There is no information available on that. Any psychotic substance abuse history including alcoholism: free text search in other diseases. Add individuals taking medication against addictive diseases: N07BB (alcohol) and N07BC (opioid). Note we are scoring here in addition individuals that take anti-anxiety and anti-psychotic medication frequently, but not daily (that will be scored 3).	Ok
	Psych 3	Two or more episodes of major depression within the past 10 years. Moderate dementia. Current usage of daily antianxiety medication. Daily antipsychotic medication. Drug abuse within the last 10 years.	Two or more episodes of major depression within the past 10 years: we can not get the number of depressions; score individuals that take antidepressive medication daily (or every other day). Moderate dementia: we can not infer this information directly, but we score all individuals taking anti-dementia medication (ATC code N06D). Current usage of daily antianxiety medication: crunch medication information for ATC code N05B. Daily antipsychotic medication: crunch medication information for ATC Code N05A. Drug abuse within the last 10 years: score individuals taking medication against drug or alcohol abuse.	<b>Depression:</b> ok  <b>Dementia:</b> ok Rest ok
	Psych 4	Current mental illness requiring psychiatric hospitalization. Acute psychosis. Severe agitation from dementia.	Current mental illness requiring psychiatric hospitalization: we don't expect any individuals here. Acute psychosis: apart from the fact that we don't have relevant information here, we also don't expect such individuals to participate in the study. Severe agitation from dementia: same here.	Ok