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## Supplementary tables

Table S1. Predictors derived from models based on LASSO regression

<b>Baseline model</b>	Gender, age, consultation frequency				
<b>Literature-based *</b>	Urbanization, deprived neighbourhood, frequency of referral to imaging, frequency of referral to psychology, frequency of referral to alternative medicine, frequency of referral to ER, frequency of referral for secondary care, frequency of referral to primary care, frequency of referral for laboratory tests, variation in medication prescription (full length ATC), variation in ICD codes, anxiety, number of pain symptoms, arterial pathology, asthma, atopy, burn injury, BMI, burn, CTS, birth, cholesterol, chronic illness, chronic kidney disease, chronic sinus, chronic stress, conduct problems, COPD, coronary artery disease, dementia, diabetes, diffuse pain, dizziness, dyslipidaemia, dyspareunia, dyspepsia, employment, family history of disease, fatigue, gastrointestinal symptoms, headache, health anxiety, heart failure, hormonal medication, hypertension, hyperthyroidism, vaccinations, infections, life events, liver disease, malignant neoplasm, marital status, memory problems, mental health, menstrual disorders, Meniere disease, mood disorders, musculoskeletal disease, neuritis, neuropathic pain, non-specific complaints, osteoporosis, pain medications, psoriasis, restless-leg syndrome, rheumatism, SES, abuse, sleep apnoea, sleep disorder, smoking, somatic symptoms, specific pain, stroke, teeth grinding, traffic accident, traumatic brain injury.				
<b>Free text *</b>	<b>PSS TERMINOLOGY:</b> MUPS, somatization, psychosomatic, unexplained, functional complaints, central sensitization, somatization disorder, somatically unexplained, complaints, somatoform, misunderstood, complaints, functional, barriers, vague complaints, vague pain, non-specific, reactive complaints, unexplained complaints, stress complaints, stress complaints.	<b>PSS SYNDROMES:</b> Fibromyalgia, spastic colon, irritable bowel, gut syndrome, IBS, CFS, chronic fatigue, ME/CFS, tinnitus, facial pain, vulvodynia, restless legs syndrome, bladder syndrome, bladder pain syndrome, interstitial cystitis, unstable bladder, tension headache, pain syndrome.	<b>ALTERNATIVE DESCRIPTION:</b> Stagnant, recovery, persistent, working hypothesis, no abnormalities, impediments, meaningless, pain experience, illness anxiety, negative thoughts, fear of movement, experiences, to experience, complaint-contingent approach, sensitive, load capacity, explanatory model.	<b>COMPLAINT DESCRIPTION:</b> Dizziness, fatigue, concentration, tension, stress-related, generalized/staggering pain, hypermobile, low back, SI pain, lumbago, backpain, pseudo-radicular, tendinosis, muscle-joint pain, musculoskeletal system, memory problems, headache, tingling, dispirited, rebellious, desperate, depressed, sleep, nauseous, shiver, anxiety symptoms, angry, anxious, emotional, dejected, worry, listless, upset stomach, on chest, neck pain, itch, sad, gloom	<b>BEHAVIOR-SOCIAL:</b> Avoidance behaviour, absenteeism, surroundings, social problems, functioning, culture, tensions, traumatic event, abuse, addiction, violence, domestic.
<b>Symptoms/diseases *</b>	WONCA categorized ICD-codes: general/unspecified congenital anomalies (A90), general/unspecified infections (A70-78), general/unspecified injuries (A80-89), general/unspecified other diagnoses (A91-99), general/unspecified non-specific symptoms				

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	(A01, A05, A20, A28-29), general/unspecified specific symptoms (A02-06, A08-09, A12), blood/immune infections (B70-71), blood/immune other diagnoses (B80-99), blood/immune symptoms (B02-29), digestive infections (D70-73), digestive neoplasms (D74-78), digestive other diagnoses (D82-99), digestive symptoms (D01-29), eye infections (F70-73), eye injuries (F75-79), eye other diagnoses (F82-99), eye symptoms (F01-29), ear infections (H70-74), ear injuries (76-79), ear other diagnoses (H81-99), ear symptoms (H01-29), cardiovascular congenital (K73), cardiovascular other diagnoses (K74-99), cardiovascular symptoms (K01-29) musculoskeletal injuries (L72-81), musculoskeletal other diagnoses (L83-95), musculoskeletal non-specific symptoms (L18-20, L28-29), musculoskeletal specific symptoms (L01-17), neurological neoplasms (N74-76), neurological other diagnoses (N86-99), neurological symptoms (N04, N06-08), psychological other diagnoses (P70-99, T06), psychological symptoms (P01-29), respiratory infections (R70-83), respiratory injuries (R87-88), respiratory neoplasms (R84-86), respiratory other diagnoses (R90-99), respiratory symptoms (R01-29), skin congenital (S81-83), skin infections (S03, S09-11, S84, S95), skin injuries (S12-19), skin neoplasms (S77-80), skin other diagnoses (S84-94, S96-99), skin symptoms (S01-29), endocrine/metabolic other diagnoses (T81-99), endocrine/metabolic symptoms (T01-29), urological other diagnoses (U88-99), urological symptoms (U01-29), family planning other diagnoses (W77-99), family planning symptoms (W01-29), female genital infections (X70-74, X90-91), female genital neoplasms (X75-81), female genital other diagnoses (X84-89, X99), female genital symptoms (X01-29), male genital congenital (Y81-84), male genital infections (Y70-76), male genital other diagnoses (Y85-99), male genital symptoms (Y01-29), social symptoms (Z01-29).
<b>Medications *</b>	ATC 3 <sup>rd</sup> level: therapeutic/pharmacological subgroup
<b>Referrals *</b>	Acupuncture, allergology, anaesthetics, autography, cardiology, surgery, cytology, dermatology, dietarian, primary care psychologist, endocrinology, physiotherapy, mental health care, gynaecology, haptomology, internal medicine, ear-nose-throat specialist, laboratory testing, pneumology, gastroenterology, medical microbiology, neurology, optomologist, orthopedy, plastic surgery, pain relief centre, podiatry, psychology, psychotherapy, radio therapy, rheumatology, rehabilitation centre, Rontgen, emergency care, urologist.
<b>Lab contextualization *</b>	Bilirubin, cholesterol, creatine, CRP/BSE, glucose, granulocyte, HbA1c, haemoglobin, minerals, monocytes, neutrophiles, PH (urine), systolic blood pressure, thyroid function, transaminase, vitamin B (excl. B12), vitamin B12, vitamin D, weight/BMI
<b>Sequential patterns *</b>	3-level patterns: Antibacterial drugs (systemic; ATC-code: J01) >> secondary care referrals, analgesic drugs (ATC-code: N02) >> secondary care referral 2-level patterns: hypertensive heart disease >> secondary care referral, specific musculoskeletal symptoms (ICPC-codes: L01-17) >> secondary care referral, Rontgen referral >> secondary care referral, hypertensive heart disease >> Rontgen referral, specific musculoskeletal symptoms (ICPC-codes: L01-17) >> Rontgen referral, antibacterial drugs (systemic; ATC: J01) >> specific musculoskeletal symptoms (ICPC-codes: L01-17), hypertensive heart disease >> specific musculoskeletal symptoms (ICPC-codes: L01-17), Rontgen referral >> specific musculoskeletal symptoms (ICPC-codes: L01-17), secondary care referral >> musculoskeletal disease (ICPC-codes: L83-95, L98-99), specific musculoskeletal symptoms (ICPC-codes: L01-17) > analgesic drugs (ATC-code: N02). 1-level patterns: General and unspecified disease (ICPC-codes: A91-99), fatigue (ICPC-code: A04), no disease (ICPC-code: A97), abdominal symptoms (ICPC-codes: D01-29), peripheral osteoarthritis (ICPC-codes: L89-91), drugs for acid related disorders (ATC-code: A02), drugs for constipation (ATC-code: A06), vitamin preparations (ATC-code: A11), antithrombotic agents (ATC-code: B01), dermatological corticosteroids (ATC-codes: D07), antibacterial drugs (systemic; ATC: J01), analgesic drugs (ATC-code: N02), drugs for obstructive airway diseases (ATC-codes: R03), cough and cold preparations (ATC-codes: R05), ophthalmological drugs (ATC-codes: S01), acute unitary infection (ICPC-codes: U70-72), cancer (ICPC-codes: A79, B72-73, D74-77, L71, N74, R84-85, S77, T71, U75-77, W72, X75-77, Y77-78), chronic abdominal pain (ICPC-codes: D01-02, D04, D06, Y02) dizziness (ICPC-codes: H82, N17), eye symptoms, eye diseases (ICPC-codes: F83-84, F92-94), hypertensive heart disease (ICPC-codes: K86-87), cardiovascular other diagnoses (ICPC-codes: K74-99), cardiovascular symptoms (ICPC-codes: K01-29), musculoskeletal injuries (ICPC-codes: L72-81), musculoskeletal other diagnoses (ICPC-codes: L83-95, L98-99), specific musculoskeletal symptoms (ICPC-codes: L01-17), neck and shoulder symptoms (ICPC-codes: L01, L08), psychological symptoms (ICPC-codes: P01-29), respiratory symptoms (ICPC-codes: R01-29), Rontgen referral, skin other diagnoses (ICPC-codes:), skin

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	symptoms (ICPC-codes: S01-29), secondary care referral, vitamin deficiency (ICPC-codes: T91), infections upper respiratory tract (ICPC-codes: A77, R72, R74-76), urological symptoms (ICPC-codes: U01-29), female genital symptoms (ICPC-codes: X01-29).
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\* Near zero variance and high-correlating variables removed

Table S2. Number of variables by dataset and source table

Datasets	Source table(s)	n
Baseline	Patient	3
Symptoms/diseases	Journal and episode	96
Medications	Medication	176
Referrals	Correspondence	51
Literature review	Patient, journal, episode, lab, correspondence, medication	92
Free text	Journal	8
Lab contextualization	Lab results	76
Sequential patterns	Journal, episode, lab, correspondence, medication	57
Full model	Patient, journal, episode, lab, correspondence, medication	545

Table S3. Patterns derived from the SPADE algorithm and subsequent LASSO regression for the sequential patterns model

Sequences	support (difference)	Odds ratio
Rontgen referral	0.077	1.08
Female genital symptom <sup>a</sup>	0.043	1.03
Hypertension <sup>b</sup>	0.036	0.97
Fatigue <sup>c</sup>	0.025	1.02
Antibacterials for systemic use >> specialist care referral	0.012	1.02
Antibacterials for systemic use >> specific musculoskeletal symptoms <sup>d</sup>	0.011	0.98
Drugs for constipation (A06)	0.274	1.00
Cardiovascular diagnosis <sup>e</sup>	0.031	1.00
Neck and back complaints <sup>f</sup>	0.036	1.00

<sup>a</sup> ICPC-codes X01-X29; <sup>b</sup> ICPC-codes K86 or K87; <sup>c</sup> ICPC-code A04; <sup>d</sup> ICPC-codes L01, L02, L03, L04, L05, L06, L07, L08, L09, L10, L11, L12, L13, L14, L15, L16, L17, L17.01; <sup>e</sup> ICPC codes K74-K99 (excl. K86 and K87); <sup>f</sup> ICPC codes L01, L02, L03, L83, L84, or L86