Diagnosis and treatment of vulnerable migrants: a retrospective study at a Doctors of the World clinic in Stockholm

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Abstract

Background: At Doctors of the World Medical Clinic in Stockholm (DWMCS), medical care is offered to migrants who live under particularly vulnerable conditions and who lack access to subsidized care. The demographic, diagnostic and therapeutic panorama of vulnerable migrants is unknown.

Methods: A quantitative, retrospective study mapping gender, age, diagnostic group, primary diagnosis, therapeutics, referrals, and session timing (whether the care session took place in summer - April to September, or winter - October to March) by reading all patients’ electronic journals at DWMCS between 2014-04-01 and 2017-12-31. Diagnostic groups were classified according to the classification system ICPC-2 which contains six diagnostic groups: symptoms/complaints, infections, neoplasms, injuries, congenital anomalies and other diagnoses. Primary diagnosis was defined as the diagnosis that was first in the diagnosis list for the visit. Difference in median age was calculated with the Mann-Whitney test (MW), and two-group analysis of nominal data was performed with Monte Carlo simulations (MC) and chi square test’s (X²).

Results: The study included 1323 patients: 838 women and 485 men. The median age for women 37 years (29-47) was slightly lower than for men, 40 years (31-47) MW (p = 0.002). The largest diagnostic group was symptoms / complaints. The five most common primary diagnoses were cough (4%), back symptom / complaint (4%), cystitis (3%), upper respiratory infection acute (3%) and abdominal pain epigastric (2%). The most common therapeutic (55%) was pharmaceutical. Referrals accounted for 12% of the therapeutics and 25% of the referrals were to an emergency room. Tests of significance indicated an uneven distribution of diagnostic groups MC (p = 0.003), infectious primary diagnoses MC (p = 0.0001) and referrals MC (p = 0.006) between men and women and an uneven seasonal distribution among the Other diagnoses MC (0.04) and ten most common drug treatments MC (p=0.002).

Conclusions: The demographic, diagnostic and therapeutic panorama of vulnerable migrants at DWMCS was elucidated. Vulnerable migrants have differences in morbidity depending on gender and season, differences in therapeutics depending on gender and differences among their most common drug treatments depending on season. This knowledge is important when addressing the health problems of vulnerable migrants.

Keywords: Vulnerable populations, Transients and migrants, Diagnoses, Therapeutics, Retrospective studies

Background

Vulnerable populations are defined as groups of persons whose range of options is severely limited, who are frequently subjected to coercion in their decision making, or who may be compromised in their ability to
may, for example, have a higher incidence of tuberculosis compared to domestic population. Migrants to pay fees, cultural misunderstandings, and linguistic access to care, lack of health insurance, insufficient funds reduced access to health care due to legal restrictions on
treatment for the medical visits, diagnostic groups, thirty most
DWMCS. We mapped gender, age, seasonal distribu-
tion for the medical visits, diagnostic groups, thirty most

Migrants are by definition people who change their
country of usual residence [5]. The term includes people
who move between as well as within nations and is independent of whether they move permanently or tempora-
arily [6]. In 2014, more than 200 million migrants moved
between countries - more than 3% of the world’s population [7] and in Sweden there were more than 1.6
million migrants born abroad [8]. Migrants often have reduced access to health care due to legal restrictions on
access to care, lack of health insurance, insufficient funds to pay fees, cultural misunderstandings, and linguistic
problems [9].

Diagnoses may be differently distributed between
migrants compared to domestic population. Migrants
may, for example, have a higher incidence of tuberculosis [10] and have increased mortality related to infectious
diseases [11]. Therapeutics of infectious diseases may be
delayed for migrants [12] and the mental health problems
of undocumented migrants may be undertreated in pri-
mary care [13]. Migrants have an increased risk associ-
ated with pregnancy [14] and lower use of contraceptives
in connection with abortion [15]. The most common
diagnoses in regular primary care in Stockholm are acute
upper respiratory tract infection, essential hypertension,
cough and back pain [16].

Since 1995, Doctors of the World has run a medical
outpatient clinic in Stockholm. Patients who are offered
care at Doctors of the World's Medical Clinic in Stock-
holm (DWMCS) are migrants, live in Sweden under par-
cipularly vulnerable conditions, often have a markedly
limited room for maneuver, may lack literacy, and often
have a history of exposure to violence. It is unknown how
the patient group is composed in terms of gender and
age, what diagnoses they have, what therapeutics they
receive, where they are referred to, and whether there are
differences in morbidity and therapeutics depending on
gender and season (summer and winter). The aim of this
study was to explore these knowledge gaps about vul-
nerable migrants and to provide new knowledge about the
health problems of this vulnerable population which, by
not being able to seek regular subsidized care, go under
the radar of Swedish health authorities and are excluded
from the Swedish health data register.

Methods
This is a quantitative, retrospective study of medical
records within the framework of existing resources at
DWMCS. We mapped gender, age, seasonal distribu-
tion for the medical visits, diagnostic groups, thirty most
common primary diagnoses, therapeutics, ten most
common drug treatments and referrals by studying all
patients’ electronic records on DWMCS between 2014-
04-01 and 2017-12-31. The time interval was determined
based on the date when DWMCS first began using a
computerized medical record system until the start of the
study. Ethnicity and country of origin were not included
because they were judged to be sensitive information
and unreliable, and they may increase the possibility of
identifying individual study participants. The medical
record system at DWMCS was ProRenata version
2.142.0.

The research subjects consisted of all patients at the
clinic who had an electronic medical record. Inclusion
criteria were that there was a medical record note with
age, date, gender and diagnosis according to the diagno-
sis manual ICPC-2. Exclusion criteria were whether there
was a double record for the same patient or if the birth
data for a record was filled in incorrectly. There were 796
patients (38%) excluded: 547 (69%) women, 240 (30%)
men and 9 (1%) without a stated gender. The reasons for
exclusion were lack of diagnosis (85.3%), no reception
note (4.1%), dentist note without diagnosis (2.6%), dou-
ble medical record (2.6%), incorrect birth data (2.1%),
deleted or missing journal (1.5%), missing gender infor-
mation (1.1%) and exercise journal (0.5%).

Data gathering
Patient data were extracted from the medical records by
manual reading, entered into an Excel matrix and pro-
cessed after anonymization. Anonymization took place
using a code key. The code key was created by separating
the subjects’ names and birth data from the other data
in a separate Excel file after they were assigned a serial
number. The code key was saved in a password-protected
file on a USB memory stick. The serial numbers were
also saved together with the data that was extracted and
processed.

If there were several visits, only the first visit that met
the inclusion criteria was included. If there were several
diagnoses, only the primary diagnosis was included, i.e.
the diagnosis that was first in the diagnosis list for the
visit. The primary diagnoses were grouped according to
ICPC-2 into either Symptoms / Complaints, Other diag-
noses, Infections, Injuries, Tumors or Congenital mal-
formations. If there was a defined therapeutic for the
primary diagnosis, this was included. If there were sev-
eral therapeutics indicated for the primary diagnosis,
only the first mentioned was included. The therapeutics
were grouped into either Pharmaceutical, Referral, Other
treatment or No treatment. Pharmaceutical treatments
were classified to a therapeutic subgroup according to
the second level of the Anatomical Therapeutic Chemical
Classification System (ATC). Referrals were categorized depending on the recipient to Health centers, Emergency rooms, Abortion clinics and Other recipients. Other recipients included dentists, maternity care, infection clinics and opticians. Due to regulations in the Swedish Health and Medical Care Act, follow-up information on primary diagnosis from referral clinics could not be collected.

Statistical methods
Microsoft Excel version 16.16.18 was used for descriptive statistics and structuring of tables. Nominal data such as diagnostic groups, diagnoses, therapeutics, drug treatments and referrals were compiled as pivot tables. The size ratio between the number of patients who were women and the number who were men was described as a gender ratio by dividing the number of women by the number of men. The size ratio between the number of patients who sought help during the summer (April to September) and the winter (October to March) was described as a seasonal ratio by dividing the number of patients during the summer by the number of patients during the winter. Age as interval data was not normally distributed, the difference in median age was chosen as a comparative measure and calculated with the Mann-Whitney test. Two-group analysis of nominal data was performed with Monte Carlo simulations (MC) and chi square test’s (X²). MC and X² requires independence of observations why only one outcome for each category of nominal data could be included for every patient. MC was chosen for analyses where there were outcomes with less than five patients and X² was chosen when all outcomes had at least five patients. For two-group analysis of nominal data, outcomes with a very small proportion of total outcomes (<1%) were excluded and outcomes only possible for one gender, for example pregnancy and abortion, excluded that specific outcome. For all statistical calculations, the statistics program Past 3 version 3.24 was used. The significance level was determined to be 5% (p <0.05).

Results
During the period of 2014-04-01 to 2017-12-31, 2119 patients were registered in DWMCS’s medical record system. Inclusion criteria were met by 1323 (62%) of these, of which 838 were women and 485 were men. The median age of women was 37.3 (28.9-46.6) years and 39.9 (30.6-47.3) years for men; tests of significance indicates that these differed significantly MW (p = 0.02). Gender, seasonal and age group distribution for all patients are shown in Table 1.

The largest diagnostic group were symptoms / complaints with more than half of all diagnoses. Tests of significance indicate that the diagnostic groups are not evenly distributed between men and women, MC (p = 0.003). Tests of significance indicated no difference in the seasonal distribution for the diagnostic groups, MC (p = 0.49). Gender and seasonal distribution for the diagnostic groups are shown in Table 2.

The thirty most common primary diagnoses accounted for 47% of all primary diagnoses. Tests of significance indicate that the distribution of infectious primary diagnoses are not evenly distributed between men and women MC (p = 0.0001) and that the seasonal distribution of the most common Other diagnoses differed significantly MC (p = 0.04), not including pregnancy. Tests of significance indicated no difference in the gender based distribution for the most common Symptoms/Complaints.

| Age group | Quantity (N) | Percentage (%) of all 1323 patients | Gender ratio (women / men) | Season ratio (summer months / winter months) |
|-----------|--------------|-------------------------------------|---------------------------|---------------------------------------------|
| 0-17      | 13           | 1                                   | 5.5                       | 0.9                                         |
| 18-44     | 920          | 70                                  | 1.8                       | 1.0                                         |
| 45-64     | 357          | 27                                  | 1.6                       | 1.2                                         |
| 65-79     | 32           | 2                                   | 1.3                       | 0.9                                         |
| 80+       | 1            | 1                                   |                           |                                             |
| Total     | 1323         | 100                                 | 1.7                       | 1.0                                         |
Other diagnoses or seasonal based distribution of Symptoms/Complaints and Infections, MC (p = 0.5) MC (p = 0.6) MC (p = 0.09) MC (p = 1.0). Gender and seasonal distribution for the thirty most common primary diagnoses, reported for each diagnostic group with p-values calculated with MC are shown in Table 3a-b.

Tests of significance indicated no difference in the gender based or seasonal distribution for therapeutics, X² (p = 0.7) and X² (p = 0.8). Gender and seasonal distribution for the therapeutics are shown in Table 4.

The ten most common drug treatments corresponded to 75% of all drug treatments. Tests of significance indicated no difference in the gender based distribution for the ten most common drug treatments, X² (p = 0.06). Tests of significance indicates that the seasonal distribution for the ten most common drug treatments differed significantly, MC (p = 0.003). Gender and seasonal distribution for the ten most common drug treatments are shown in Table 5.

Referrals accounted for 12.3% of all treatments. Dentists, maternity care, infection clinics and opticians were summarized as “Other recipients”. Tests of significance indicates that the distribution of referrals differed significantly between men and women, X² (p = 0.02) not including abortion. Tests of significance indicated no difference in the seasonal distribution of referrals, MC (p = 0.3). Gender and seasonal distribution for referrals are shown in Table 6.

Discussion

DWMCS's patients are dominated by women aged 18-44 years. Cough, pain, uncomplicated infections, adult-onset diabetes and high blood pressure make up a significant proportion of vulnerable migrants’ primary diagnoses. The majority of diagnoses are more common among women.

In this study, the age group 18-44 years accounted for 70% while there were very few children and elderly. This differs considerably from the general primary care population in Stockholm where the age group 80+ years is the smallest with 13% and the age group 18-44 years is the biggest with 26% [16]. It also differs from the age group distribution of Sweden's total migrant population in 2014 where 80+ years was the smallest with 3% and 18-44 years the biggest with 47% [8]. The fact that children appear at DWMCS is remarkable because children, regardless of legal status, should have the right to subsidized healthcare in Sweden. This is in accordance with what has been shown in previous research: that it is more difficult for migrants than natives to receive medical care [9].

The thirty most common diagnoses for vulnerable migrants described according to ICPC-2 are similar to the thirty most common diagnoses for all of Stockholm’s primary care patients according to ICD-10. Upper respiratory tract infection, cystitis, back and abdominal pain are among the most common. Diabetes and high blood pressure are present in both populations. Depression and anxiety are found as the eighteenth and twenty-sixth most common diagnosis in Stockholm's primary care [16] but are not among the thirty most common main diagnoses at DWMCS. Previous studies have shown that undocumented migrants’ mental health problems can be undertreated in primary care [13]. The results of this study raise questions about how symptoms of depression and anxiety are expressed by vulnerable migrants, and how this is captured by physicians at the clinic.

Risks associated with pregnancy are increased for migrants [14]. It is less common among migrants than

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### Table 2

| Rank | Diagnostic group          | Quantity (N) | Percentage (%) of all main diagnoses | Gender ratio (women / men) | Season ratio (summer months / winter months) |
|------|---------------------------|--------------|-------------------------------------|----------------------------|--------------------------------------------|
| 1    | Symptoms / Complaints     | 747          | 56                                  | 2.1                        | 1.1                                        |
| 2    | Other diagnoses           | 305          | 23                                  | 1.3                        | 1.1                                        |
| 3    | Infections                | 223          | 17                                  | 1.6                        | 0.8                                        |
| 4    | Injuries                  | 42           | 3                                   | 0.9                        | 0.8                                        |
| 5    | Neoplasms                 | 4            | 0                                   | 3.0                        | 1.0                                        |
| 6    | Congenital anomalies      | 2            | 0                                   | 1.0                        | 1.0                                        |
|      | Total                     | 1323         | 100                                 | 1.7                        | 1.0                                        |
Table 3  a-b Gender and seasonal distribution for the thirty most common primary diagnoses, reported for each diagnostic group with p-values calculated with MC

a. Gender and seasonal distribution for the most common primary diagnoses among Symptoms/Complaints with p-values calculated with MC

| Rank | ICPC-2-code | ICPC2-diagnosis    | Quantity (N) | Percentage (%) of all primary diagnoses | Gender ratio (women / men) | Result of MC | Season ratio (summer months / winter months | Result of MC |
|------|-------------|---------------------|--------------|-----------------------------------------|---------------------------|-------------|--------------------------------------------|-------------|
| 1    | R05         | Cough               | 49           | 4                                       | 2.1                       | 0.7         | 1.1                                        |             |
| 2    | L02         | Back symptom / complaint | 48           | 4                                       | 1.5                       | 0.9         | 1.2                                        |             |
| 5    | D02         | Abdominal pain epigastric | 33           | 2                                       | 3.1                       | 0.8         | 1.0                                        |             |
| 6    | D01         | Abdominal pain / cramps general | 28           | 2                                       | 8.3                       | 0.8         | 1.0                                        |             |
| 7    | L18         | Muscle pain         | 27           | 2                                       | 2.0                       | 0.5         | 1.0                                        |             |
| 10   | N01         | Headache            | 24           | 2                                       | 3.0                       | 0.4         | 1.0                                        |             |
| 11   | L15         | Knee symptom / complaint | 23           | 2                                       | 1.6                       | 3.6         | 1.0                                        |             |
| 13   | L17         | Foot / toe symptom / complaint | 20           | 2                                       | 2.3                       | 1.9         | 1.0                                        |             |
| 14   | D07         | Dyspepsia / indigestion | 18           | 1                                       | 2.6                       | 1.6         | 1.0                                        |             |
| 15   | S02         | Pruritus            | 17           | 1                                       | 1.8                       | 0.9         | 1.0                                        |             |
| 17   | L03         | Low back symptom / complaint | 16           | 1                                       | 3.0                       | 1.0         | 1.0                                        |             |
| 20   | L12         | Hand / finger symptom / complaint | 14           | 1                                       | 1.8                       | 1.3         | 1.0                                        |             |
| 22   | S06         | Rash localized      | 13           | 1                                       | 0.9                       | 1.6         | 1.0                                        |             |
| 23   | L08         | Shoulder symptom / complaint | 12           | 1                                       | 2.0                       | 1.0         | 1.0                                        |             |
| 24   | L01         | Neck symptom / complain | 12           | 1                                       | 5.0                       | 2.0         | 1.0                                        |             |
| 27   | A01         | Pain general / multiple sites | 10           | 1                                       | 2.3                       | 1.5         | 1.0                                        |             |

b. Gender and seasonal distribution for the most common primary diagnoses among Infections and Other diagnoses with p-values calculated with MC

| Rank | ICPC-2-code | ICPC2-diagnosis    | Quantity (N) | Percentage (%) of all primary diagnoses | Gender ratio (women / men) | Result of MC | Season ratio (summer months / winter months | Result of MC |
|------|-------------|---------------------|--------------|-----------------------------------------|---------------------------|-------------|--------------------------------------------|-------------|
| 3    | U71         | Cystitis / urinary infection other | 39           | 3                                       | 8.8                       | 1.1         | 1.0                                        |             |
| 4    | R74         | Upper respiratory infection acute | 37           | 3                                       | 1.6                       | 0.9         | 1.0                                        |             |
| 18   | S76         | Skin infection other | 15           | 1                                       | 4.0                       | 0.9         | 1.0                                        |             |
| 25   | R78         | Acute bronchitis / bronchiolitis | 11           | 1                                       | 0.8                       | p = 0.001   | 1.2                                        |             |
| 26   | S74         | Dermatophytosis      | 11           | 1                                       | 0.1                       | 1.2         | 1.0                                        |             |
| 28   | S72         | Scabies / other acariasis | 10           | 1                                       | 1.5                       | 1.0         | 1.0                                        |             |
| 30   | F70         | Conjunctivitis infectious | 10           | 1                                       | 4.0                       | 1.5         | 1.0                                        |             |

| Rank | ICPC-2-code | ICPC2-diagnosis    | Quantity (N) | Percentage (%) of all primary diagnoses | Gender ratio (women / men) | Result of MC | Season ratio (summer months / winter months | Result of MC |
|------|-------------|---------------------|--------------|-----------------------------------------|---------------------------|-------------|--------------------------------------------|-------------|
| 8    | T90         | Diabetes non-insulin dependent | 25           | 2                                       | 0.7                       | 1.1         | 1.0                                        |             |
| 9    | D82         | Teeth / gum disease | 24           | 2                                       | 1.7                       | 1.2         | 1.0                                        |             |
| 12   | K86         | Hypertension uncomplicated | 21           | 2                                       | 0.8                       | 1.3         | 1.0                                        |             |
| 19   | K85         | Elevated blood pressure | 15           | 1                                       | 2.0                       | 1.3         | 1.0                                        |             |
| 21   | R96         | Asthma              | 13           | 1                                       | 1.2                       | 1.2         | 1.0                                        |             |
| 29   | D87         | Stomach function disorder | 10           | 1                                       | 1.5                       | 1.5         | 1.0                                        |             |
| 16   | W78         | Pregnancy           | 16           | 1                                       | 1.3                       | 1.0         | 1.0                                        |             |
### Table 4  Gender and seasonal distribution for the therapeutics

| Rank | Therapeutics          | Quantity (N) | Percentage (%) of all patients | Gender ratio (women / men) | Season ratio (summer months / winter months) |
|------|-----------------------|--------------|--------------------------------|---------------------------|---------------------------------------------|
| 1    | Pharmaceutical        | 731          | 55                             | 1.7                       | 1.0                                         |
| 2    | No treatment          | 352          | 27                             | 1.7                       | 1.0                                         |
| 3    | Referral              | 163          | 12                             | 2.1                       | 1.1                                         |
| 3    | Other treatment       | 77           | 6                              | 1.8                       | 1.1                                         |
|      | **Total**             | **1323**     | **100**                        | **1.7**                   | **1.0**                                    |

### Table 5  Gender and seasonal distribution for the ten most common drug treatments

| Rank | ATC code | ATC classification             | Quantity (N) | Percentage (%) of all drug treatments | Gender ratio (women / men) | Season ratio (summer months / winter months) |
|------|----------|--------------------------------|--------------|----------------------------------------|---------------------------|---------------------------------------------|
| 1    | M01      | Anti-inflammatory and antirheumatic drugs | 127          | 17                                     | 1.8                       | 1.2                                         |
| 2    | N02      | Analgesic drugs                | 126          | 17                                     | 1.8                       | 0.8                                         |
| 3    | J01      | Antibacterial drugs            | 116          | 16                                     | 2.3                       | 1.0                                         |
| 4    | A02      | Drugs for acid related disorders | 62           | 8                                      | 3.1                       | 1.0                                         |
| 5    | D07      | Topical dermatological corticosteroids | 26           | 4                                      | 1.4                       | 0.5                                         |
| 6    | S01      | Ophthalmological drugs         | 26           | 4                                      | 2.7                       | 1.6                                         |
| 7    | D01      | Antifungals for dermatological use | 20           | 3                                      | 1.9                       | 0.5                                         |
| 8    | N05      | Psycholeptics drugs            | 15           | 2                                      | 1.5                       | 0.3                                         |
| 9    | M02      | Topical products for joint and muscular pain | 15           | 2                                      | 0.9                       | 0.7                                         |
| 10   | R03      | Drugs for obstructive airway diseases | 15           | 2                                      | 2.0                       | 0.1                                         |
|      | **Total** |                                  | **548**      | **75**                                 | **1.9**                   | **0.9**                                    |

### Table 6  Gender and seasonal distribution for referrals

| Rank | Referral recipient     | Quantity (N) | Percentage (%) of all referrals | Gender ratio (women / men) | Season ratio (summer months / winter months) |
|------|------------------------|--------------|---------------------------------|---------------------------|---------------------------------------------|
| 1    | Other recipients       | 86           | 53                              | 2.7                       | 1.0                                         |
| 2    | Emergency room         | 40           | 25                              | 0.9                       | 1.9                                         |
| 3    | Health center          | 29           | 18                              | 2.2                       | 0.9                                         |
| 4    | Abortion clinic        | 8            | 5                               | 2.1                       | 1.7                                         |
|      | **Total**              | **163**      | **100**                         | **2.1**                   | **1.1**                                    |
the proportion of migrants that contraceptives are planned to be used after an abortion [15]. In this study, pregnancy was the sixteenth most common primary diagnosis and half of the pregnancies were referred to an abortion clinic. This gives an abortion ratio of 50% which is considerably higher than the overall Swedish abortion ratio in 2014 which was 24% [17, 18].

A limitation of this study is that it only examined the primary diagnosis for the first visit. At an early stage of investigation, symptom diagnoses become a necessity while waiting for investigation results. It is therefore unclear whether a clearer etiological picture of the health problems could have emerged with a method that included all care visits. The clinic’s limited resources when it comes to laboratory analyzes and X-ray examinations may also have shifted the diagnostic panorama towards more symptom diagnoses, as the etiology has been difficult to determine. The degree of exclusion was 37.6%, primarily due to lack of a primary diagnosis in the medical records, this means that the results must be interpreted with caution.

Conclusions
This study offers an insight into the demographic, diagnostic and therapeutic panorama of vulnerable migrants at DWMCS. Vulnerable migrants have differences in morbidity and therapeutics depending on gender. There is a seasonal difference among the most common drug treatments. This knowledge is important when aiming at using the resources of DWMCS in an effective way when offering free health care to vulnerable migrants. The knowledge is also important for the training of new health workers at Doctors of the World Clinics in Sweden and Europe, and in the communication with Swedish health authority’s when addressing the health problems of this vulnerable population. Migration is an ever-current issue in European societies and new knowledge is constantly needed to follow the development of health problems for migrants.

Abbreviations
DWMCS: Doctors of the World Medical Clinic in Stockholm; ATC: Anatomical-Therapeutic Chemical Classification System; MC: Monte Carlo simulations; χ²: chisquare test’s ; MW: Mann-Whitney test.

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Authors’ contributions
K.Y.N and BC.B conceptualized the study. K.Y.N wrote the main manuscript which was revised by BC.B and JE.O. Data processing was supervised by JE.O. Tables were prepared by JE.O. and K.Y.N. BC.B had the overall supervisor responsibility for the study. All authors reviewed the manuscript. The author(s) read and approved the final manuscript.

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Availability of data and materials
Data cannot be shared publicly. This is due to the following reasons. 1. The dataset contains too many indirect identifiers: Gender, age, time-interval for the study, diagnosis and therapeutics. 2. The study population is considered a vulnerable population, so extra care needs to be shown to their integrity. 3. The study population is relatively small while the risk of being able to identify a participant is increased. This was concluded in dialog with the Swedish national data service https://snd.gu.se/en who states that the data set cannot at all be handled by them. Data are available on request from the authors for researchers who meet the criteria for access to confidential data.

Declarations
Ethics approval and consent to participate
The study was approved by the Regional Ethical Review Board in Stockholm, located at the Karolinska Institute, record number 2018/1430-31/1. The authors guarantee that all protocols are carried out in accordance with relevant guidelines and regulations. The decision to waive informed consent and consent for publication was approved by the Regional Ethical Review Board in Stockholm, located at the Karolinska Institute, record number 2018/1430-31/1. The study was retrospective and descriptive without intervention on the care of any individual patient. Information about the study with contact information to the responsible researcher and the Director General were set up at the clinic in Swedish, English, Russian, Arabic and Romanian. An individual patient could be excluded from the study if desired, without affecting their care. The Regional Ethical Review Board in Stockholm has since 2019 been replaced by the Swedish Ethical Review Authority.

Consent for publication
Not applicable.

Competing interests
No competing interests exist.

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