

Child and adolescent health in northwestern Syria: findings from Healthy-Syria 2017 study

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ABSTRACT

Objectives: Since the uprising in 2011, there has been limited health-care data from inside Syria in the academic literature. This study aims to provide an updated account of pediatric health needs in the northwestern part of Syria; this should help inform the management and delivery of health-care services in this population. **Methods:** This is a prospective study, using a data registry, of all pediatric patients seen in a single center in northwestern Syria, between February and December 2017. We used international classification of diseases (ICD-10) codes to define cases, and tested several covariates, including age, sex, season of the year, and conditions of living for possible correlations with major illness categories. **Results:** We included 11,819 patients, of whom 5,288 (45%) were male and 6,531 (55%) were female. Collectively, these patients had 23,427 encounters. Respiratory diseases were the most encountered illnesses among all age groups (6320 [27%]), except late teen females, among whom gynecological/obstetric complaints dominated. Infectious diseases caused the greatest disease burden across all age groups, with upper respiratory tract infections (URTIs), infectious diarrhea, and otitis media representing almost half (47%) of all cases in this category. Nutritional deficiencies were diagnosed in 978 patients (8%), mostly in infants and toddlers (92%). We identified 1192 (17%) cases of acute diarrhea among all age groups, making it the second most common condition after URTIs. As compared to town residents, patients living in camps for internally displaced people accounted for more cases of infectious diarrhea (58%), chronic anemia (60%), and malnutrition (66%), especially severe acute malnutrition (76% of malnutrition cases). Vaccine-preventable illnesses represented a sizable category; we reported 69 cases of hepatitis A, 2 of poliomyelitis, 9 of pertussis, 37 of varicella, 11 of mumps, 8 of rubella, and 1 case of measles. **Conclusion:** We have identified urgent health-care issues in this population, including extreme malnutrition, high rates of infectious diseases, and high rates of teenage pregnancy. Also, we observed a relapse of some vaccine-preventable illnesses, such as mumps and rubella, which are likely associated with the decline in vaccination rates.

Key words: Atmeh, burden of disease, child and adolescent health, internally displaced people, Syrian crisis, teenage pregnancy

INTRODUCTION

The eruption of conflict in Syria has brought the country's health-care system to collapse. The destruction of health-care

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facilities, critical shortages of supplies and personnel, and mass displacement of people from one part of the country to another have contributed to the failure of health-care delivery that has been described elsewhere extensively.^[1-5] Recent estimates indicate that more than 5.6 million people have fled Syria as refugees, and 6.5 million people have been internally displaced.^[6] Many local, regional, and international organizations have extended their assistance. Their efforts, however, remain limited and often uncoordinated. Among the nongovernmental organizations (NGOs) is the Syrian Expatriate Medical Association (SEMA), formed by a group of health-care professionals who are dedicated to providing the affected population with the much needed health-care services.^[7]

Efforts to implement and maintain health information systems (HIS) in humanitarian crises or conflict areas, which meet international data protection standards, have been challenging. In Syria, further challenges include the exodus of staff who could carry out this work, the volume of work particularly at the time of attacks, the targeting of health facilities, and the intermittent internet connectivity. To address the gap in HIS, SEMA implemented a data collection and reporting system in SEMA-affiliated health-care facilities called “HealthySyria^{TB},” which enables data collection from the field; the main aim is to support reporting and planning for SEMA’s health programs.

The Healthy-Syria project is a comprehensive medical project that aims to highlight the health-care challenges in Syria, especially in areas where internally displaced people (IDP) live. The project is inspired by the Global Burden of Disease (GBD) group experience and findings,^[8] and envisioned to provide a good start, not only for patient care but for clinical research as well. This study is part of the Healthy-Syria 2017 project.

The aim of this study was to review the cohort data obtained prospectively from the routine clinical care of patients using the newly implemented HIS. The focus was on the clinical presentations of children and adolescents with a view to describing their disease burden and understanding their health-care needs.

METHODS

Overview

The SEMA is an NGO that was established in 2011 to serve the medical needs of people in Syria, especially those living in IDP camps. By 2017, it had registered branches in a number of countries including the United States, Turkey, Italy, and France with 40 affiliated medical facilities in Syria and neighboring countries (<http://www.sema-us.org/>).

The HealthySyria^{TB} program includes a simplified electronic medical record system developed by the authors (A.S.T. and B.B.). It is designed to describe morbidity and mortality records. The goal is to provide reliable and updated reports to help optimize health-care efforts, through an improved distribution of resources (financial, logistics, and man power), and to guide future structural improvement projects including a telemedicine system. We introduced this program in one of the SEMA-affiliated centers, in February 2017 and are in the process of gradually implementing it in the rest of our facilities. More information about the system is available as a video at <https://vimeo.com/240285087> and the online version is available at www.healthysyria.net.

The study center is located in the northwest Syrian in a town called Atmeh, which is situated in Idlib governorate; the town is close to several camps that house scores of IDP [Figure 1]. During the study period, the study center served an estimated population of 500,000 people who settled within an area of approximately 65 km². Approximately, 250,000 people lived in this area before 2011.^[9] However, as this area was considered relatively safe, because of its proximity to the Turkish border, the population density in this area continued to increase with each new wave of displacement; the most recent evacuation of civilians from eastern Ghouta in April 2018 resulted in an additional 300,000 to the population in Idlib governorate, some of whom reside in this area.

In the study district, there are a total of five medical centers, one specializing in burns, one in trauma and general surgery, one in trauma and orthopedic surgery, and two in women’s and children’s health. The study center offers free services for women and children health care; it is equipped with a pharmacy and a medical laboratory, which can process all basic laboratory workups. Our center is within 1 km distance from all IDP camps. All services are provided without charge. The children of this area are served by a total of nine physicians (five pediatricians and four pediatric residents). Six of these physicians, including three residents, are based in the study center. One visiting pediatric neurologist contributes to the care of these patients for 8-h shift on a weekly basis.

Data collection

This is a prospective data registry study, conducted under SEMA—institutional review board, approval number (2017-03). Data collection spans from February to December 2017. After the pediatrician makes a diagnosis, data entry is assigned to a dedicated staff member who inputs all the information related to patients’ file using “HealthySyria^{TB}” program. All diagnoses entered are based on the international

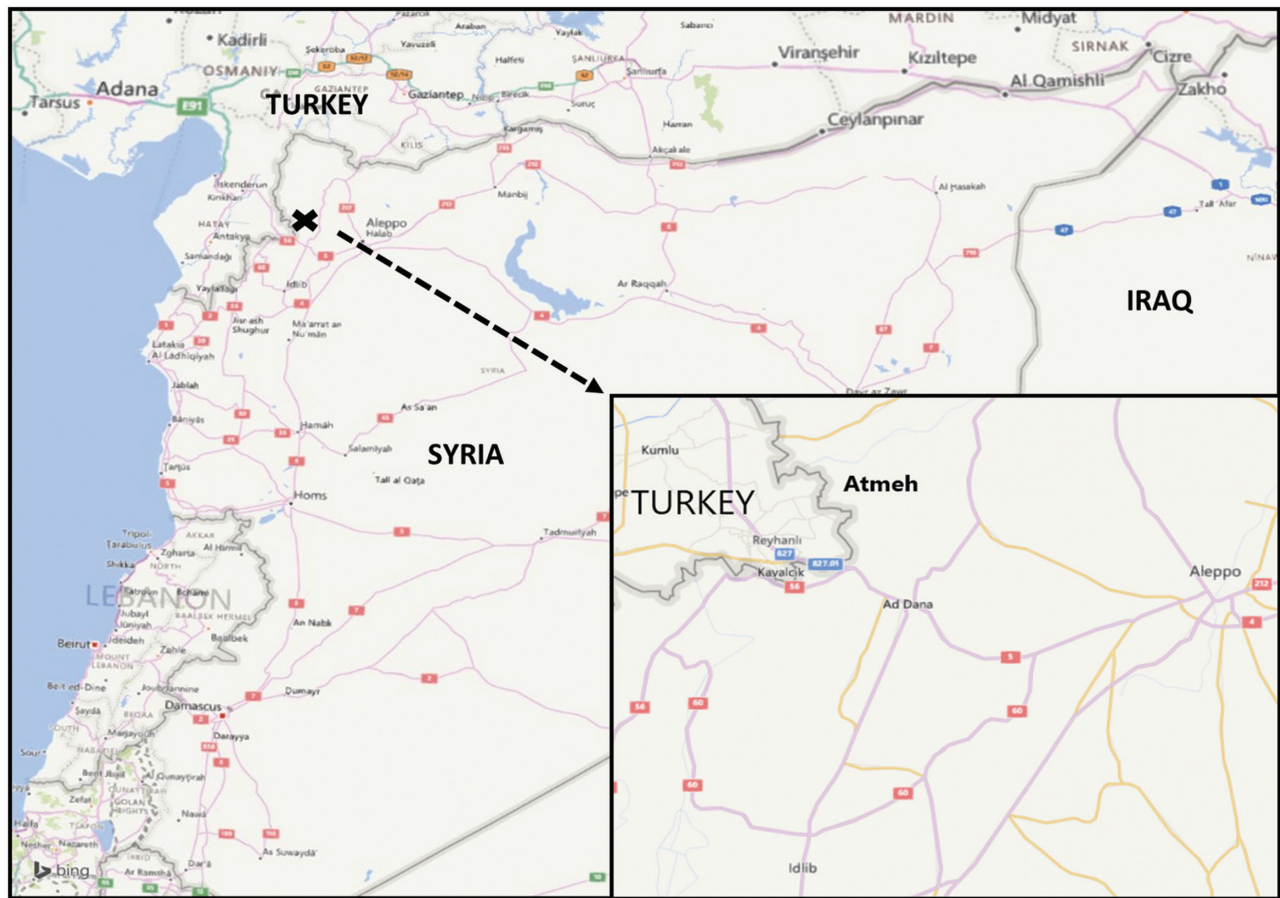


Figure 1: The study center location represented by the (x) sign in the map

classification of diseases (ICD-10) coding system, which has helped to reduce differences in reporting and has decreased the impact of language barriers among providers. Data were entered on daily basis, saved in a local server then synchronized with the mother server. The program designates a unique medical record number (MRN), composed of 12 digital figures and letters for each patient. This unique MRN prevents duplication and maintains anonymity for data analysis and maintains the patients' records for future use. On each subsequent visit, the program will create a new encounter for each department the patient uses. The minimum required data to create a medical record or register a visit include patient's name, date of birth, social number, sex, living conditions (IDP vs. resident), visit date, and diagnosis. Other recommended information includes height, weight, blood group, and drug allergies.

The pediatric clinic is open from Sunday to Thursday from 8 am to 3 pm, and the hospital provides 24-h emergency services. Once the patient arrives, the nurse performs a triage check including the vital signs and anthropometric measurements, then the patient is medically evaluated. On average, the pediatric clinic serves 50 patients a day. Newborn infants are usually assessed soon after birth by the

on-call pediatrician who provides any required resuscitation; after 2 h of the customary care and stabilization, the infant is usually discharged home with his or her mother if they are well.

Data management

We divided patients into six distinct age groups: neonates (1–27 days), infants (28–364 days), toddlers (1–4 years), childhood (5–9 years), early teenage (10–14 years), and late teenage (15–19 years) groups. This classification has been used consistently in large epidemiological studies, such as the GBD 2016 study.^[10]

Prevalence is presented as frequency and percentage for each disease entity. The denominator used for percentages is the total number of patients seen at the center. Thus, patients who visited the center but did not receive a diagnosis (e.g., normal examination) were included in the denominator for calculating the percentage/prevalence rates. The patient's condition of living is based on the location of residence; those who reside in any one of the IDP camps were designated as IDP, whereas those who lived outside the camp, whether renting or owning homes, were classified as town residents; some of this latter group could also be IDP from other areas.

In any given patient, when a diagnosis of an infectious disease was made within 2 weeks of a similar diagnosis, we considered both as a continuum of one disease entity that have not abated yet.

Online Supplementary Table 1 enlists the ICD-10 codes used in grouping diseases/conditions reported in this study, based on definitions used in previous GBD study.^[10]

We used the World Health Organization (WHO) criteria for diagnosing acute malnutrition based on three criteria; mid-upper arm circumference (MUAC), weight-for-height/length (*z* score), and clinical (i.e., presence of edema). Although severe acute malnutrition (SAM) is defined by a very low weight-for-height (below -3 *z* scores of the median WHO growth standards), by visible severe wasting (based on MUAC), or by the presence of nutritional edema.^[11] The MUAC was mainly used for patients aged between 6 and 59 months, plus their *z* score. Although for patients under 6 months old, we mainly used the *z* score.

For acute diarrheal diseases, we used the WHO classification,^[12] which classifies acute diarrhea into three categories:

1. Acute watery diarrhea: lasts several hours or days, and includes cholera
2. Acute bloody diarrhea: also called dysentery
3. Other acute diarrhea: not included in the above two categories

Finally, correlation between the prevalence of encountered diseases/conditions and potentially related variables was explored. We evaluated the effect of age, sex, season of the year, and condition of living (IDP vs. town resident) on the incidence of the most common communicable diseases and nutritional deficiencies.

Statistical analysis

We present descriptive results, using frequency, percentage, mean, standard deviation (SD), median, and minimum and maximum numbers (min – max), as appropriate. We used the chi-square test to calculate *P* values when comparing categorical and frequency results. We used McNemar's test to compare odd ratios (OR). We considered a *P* value of 0.05 or less as statistically significant. Analyses were carried out and graphs were prepared using Excel 2017 (Microsoft) and R version 3.3.2.

RESULTS

We included 11,819 patients in this study, of them 5,288 (45%) were males and 6,531 (55%) were females. Among

these patients, 6300 (53%) lived in an IDP camp and 5,520 (47%) were residents in town. Their age distribution is as follows:

- Neonates: 862 (7%) patients, 467 (9%) males and 395 (6%) females, from all cases
- Infants: 3662 (31%) patients, 1921 (36%) males and 1741 (27%) females, from all cases
- Toddlers: 2383 (20%) patients, 1267 (24%) males and 1116 (17%) females, from all cases
- Childhood: 2103 (18%) patients, 1142 (22%) males and 961 (15%) females, from all cases
- Early teenage: 988 (8%) patients, 455 (9%) males and 533 (8%) females, from all cases
- Late teenage: 1821 (15%) patients, 36 (1%) males and 1785 (27%) females, from all cases

A total of 23,427 patient encounters were observed during the study period; 19,740 resulted in a recorded diagnosis. Encounters because of respiratory diseases topped the list of the most common illness categories for all age groups, 6320 (27%), except in the late teenage, when gynecological/obstetric complaints dominated, pregnancy-related issues represented the most common cause for consultation.

Etiologically, infectious diseases caused most of the burden across all age groups; with upper respiratory tract infections (URTIs), infectious diarrhea, and otitis media representing almost half (47%) of all cases. Nutritional deficiencies were diagnosed in 978 patients (8%), mostly in infants and toddlers (92%). Patients in the IDP camps represented a greater proportion of those with nutritional deficiencies (66% of all cases) compared to town residents ($P \leq 0.001$). SAM cases were also more common among IDP (77% of all cases) ($p \leq 0.001$). Of interest, a similar distribution for dermatological conditions was observed. As for endocrine disorders, children and early teens were more affected (78%) than other age groups. The same pattern was found for the musculoskeletal illnesses with 64% of cases among IDP. Cardiac presentations were encountered only in 44 (0.003%) patients. A total of 59% were diagnosed in patients who were less than 1 year old.

Poisoning was encountered in 100 patients with clear predilection in males and young age; 60% of them occurred in children aged 4 years or younger. No difference was found related to the condition of living (camps vs. town). No cases were reported in newborn infants or late teenage groups. Thirty-two percent ($n = 32$) of cases labeled as "poisoning" were secondary to insect and arthropod envenomation, 41% ($n = 41$) secondary to food poisoning, and the remainder

27% ($n = 27$) were due to the ingestion of household chemicals and medications.

Figure 2 summarizes the top 20 most common diseases encountered by patients.

Table 1 summarizes the top 15 most common diagnoses encountered among different age groups.

Figure 3 summarizes the frequency and distribution of diagnoses classified by category.

A more comprehensive report about the incidence of all diseases is available in the online Supplementary Table 2.

Acute diarrhea

We reported 1192 (17%) cases of acute diarrhea among all age groups, which make this disease the second most common illness after URTI. It was more common in boys (652 [55%]) than in girls (540 [45%]) ($P = 0.008$). The most frequent age groups were infants (694 [58%]) and toddlers (358 [30%]), followed by childhood (68 [6%]), early teenage (37 [3%]), neonates (30 [3%]), and then late teenage (5 [0.4%]). Acute diarrhea was far more common in people who lived in the IDP camps (58% of all cases) compared to town residents (42%), ($P \leq 0.001$). Acute watery diarrhea, including cases of suspected cholera, represented 307 (25.7%) cases; however, none could be confirmed with existing resources.

Malnutrition disorders

We identified 978 (8%) cases of malnutrition among all age groups, which make it the sixth most common disease in the

cohort. No sex predominance was observed, with 500 (51%) girls and 478 (49%) boys. The most common age group was infants (726 [74%]) followed by toddlers (178 [18%]), neonates (30 [3%]), childhood (28 [3%]), early teenage (13 [1%]), and late teenage (3 [0.3%]) cases. It was significantly more common in people who lived in the IDP camps (66% of all cases) than in town residents (33%) ($P \leq 0.001$).

SAM defined by anthropometric measurements, as described in the “Methods” section, was reported in 131 of 978 (13.4%) patients. Most were girls (80 [61%]) with 51 (39%) boys ($P = 0.05$). Infants were the most commonly affected group with 92 (70%) cases, followed by toddlers (34 [26%] cases), neonates (2 cases), childhood (2 cases), and 1 early teenage child. SAM was by far more common in people who lived in the IDP camp versus town residents (76% vs. 24%, $P \leq 0.001$). The incidence of SAM peaked in summer associated with the peak of acute diarrheal diseases.

Vitamin D deficiency was reported in 151 patients. No sex predominance was observed, with 72 (48%) cases in males and 79 (52%) cases in females. The most common age group was infants with 96 (64%) cases, followed by toddlers with 50 (33%) cases, childhood with 3 cases, and 2 cases in neonates. No condition of living was predominant, with 76 (50%) cases in patients living in the IDP camp and 75 (50%) cases in town residents.

Special conditions

Neonatal jaundice represented the most common diagnosis in the newborn age group, accounting for 30% of their visits. It was more frequent in boys (152 [59%]) than in girls

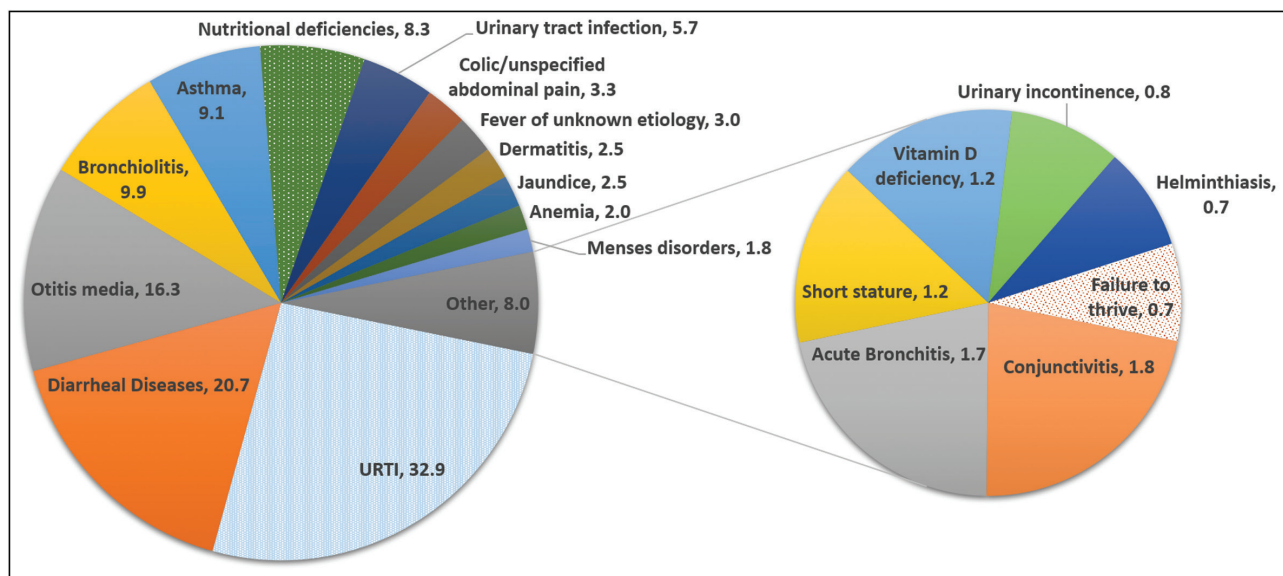


Figure 2: Top 20 causes of diseases in all studied population. Note: Percentages of this figure are of the total numbers of patients with these top 20 illnesses not the total of all cohorts. Values represent percentage among all patients

Table 1: Top 15 most common diagnosis among different age groups

Diagnosis	Total		Male		Female	
	Frequency	Percentage among age group	Frequency	Percentage among age group	Frequency	Percentage among age group
Neonates (1–27 days)	Total (862 patients)		Male (467 patients)		Female (395 patients)	
Neonatal jaundice; due to all reasons	256	29.7	152	32.54	104	26.32
Abdominal colic/other and unspecified abdominal pain	92	10.67	43	9.21	49	12.41
Influenza due to other identified influenza virus	72	9.36	38	8.14	34	8.61
Omphalitis of newborn	67	7.77	31	6.64	36	9.11
Recurrent oral aphthae	57	6.61	27	5.78	30	7.59
Acute bronchiolitis	41	4.76	21	4.50	20	5.06
Conjunctivitis	39	4.52	25	5.35	14	3.54
Nonsuppurative otitis media	25	2.90	13	2.78	12	3.04
Nasopharyngitis, common cold	25	2.90	13	2.78	12	3.04
Infantile colic	24	2.78	18	3.85	6	1.52
Viral and other specified intestinal infections	24	2.78	10	2.14	14	3.54
Dehydration fever	23	2.67	12	2.57	12	3.04
Nausea and vomiting	21	2.44	10	2.14	11	2.78
Diaper (napkin) dermatitis	20	2.32	10	2.14	10	2.53
Fever of other and unknown origin	19	2.20	13	2.78	6	1.52
Infants (28–365 days)	Total (3662 patients)		Male (1921 patients)		Female (1741 patients)	
Nonsuppurative otitis media	901	24.60	502	26.13	399	22.92
Influenza due to other identified influenza virus	855	23.35	438	22.80	417	23.95
Acute bronchiolitis	668	18.24	389	20.25	279	16.03
Viral and other specified intestinal infections	605	16.52	344	17.91	255	14.65
Asthma	436	11.91	309	16.09	127	7.29
Other nutritional deficiencies	419	11.44	229	11.92	190	10.91
Viral intestinal infection, unspecified	266	7.26	140	7.29	123	7.06
Urinary tract infection	191	5.22	66	3.44	125	7.18
Acute watery diarrhea/suspected cholera	188	5.13	84	4.37	98	5.63
Abdominal colic/other and unspecified abdominal pain	156	4.26	88	4.58	68	3.91
Fever of unknown origin	135	3.69	64	3.33	69	3.96
Nasopharyngitis, common cold	129	3.52	70	3.64	59	3.39
Acute bronchitis	125	3.41	62	3.23	63	3.62
Diarrhea and gastroenteritis of presumed infectious origin	121	3.30	76	3.96	43	2.47
Recurrent oral aphthae	115	3.14	57	2.97	58	3.33
Toddlers (above 1–4 years)	Total (2383 patients)		Male (1267 patients)		Female (1116 patients)	
Nonsuppurative otitis media	643	26.98	370	29.20	273	24.46
Influenza due to certain identified influenza viruses	514	21.57	254	20.05	260	23.30
Viral intestinal infection, unspecified	459	19.26	273	21.55	186	16.67
Asthma	380	15.95	238	18.78	142	12.72
Acute bronchiolitis	311	13.05	198	15.63	113	10.13
Acute tonsillitis	177	7.43	107	8.45	70	6.27
Urinary tract infection	158	6.63	39	3.08	119	10.66
Streptococcal, tonsillitis	113	4.74	57	4.50	56	5.02
Fever of unknown origin	107	4.49	47	3.71	60	5.38
Acute pharyngitis	102	4.28	52	4.10	50	4.48
Acute watery diarrhea/suspected cholera	89	3.73	47	3.71	42	3.76
Streptococcal pharyngitis	88	3.69	41	3.24	47	4.21
Gastroenteritis and colitis of unspecified origin	63	2.64	27	2.13	36	3.23
Diarrhea and gastroenteritis of presumed infectious origin	62	2.60	40	3.16	22	1.97
Nasopharyngitis, common cold	57	2.39	30	2.37	27	2.42
Childhood (5–9 years)	Total (2103 patients)		Male (1142 patients)		Female (961 patients)	
Influenza due to other identified influenza virus	256	12.17	180	15.76	176	18.31
Asthma	177	8.42	107	9.37	70	7.28
Acute tonsillitis	173	8.23	99	8.67	74	7.70
Nonsuppurative otitis media	162	7.70	86	7.53	76	7.91
Streptococcal, tonsillitis	162	7.70	87	7.62	75	7.80
Urinary tract infection	126	5.99	26	2.28	100	10.41
Acute bronchiolitis	113	5.37	59	5.17	54	5.62
Viral and other specified intestinal infections	102	4.85	56	4.90	46	4.79
Streptococcal pharyngitis	79	3.76	40	3.50	39	4.06
Fever of unknown origin	70	3.33	27	2.36	43	4.47
Acute pharyngitis	65	3.09	37	3.24	28	2.91
Cystitis	60	2.85	12	1.05	48	4.99
Anorexia	59	2.81	28	2.45	31	3.23

Table 1: Continued

Diagnosis	Total		Male		Female	
	Frequency	Percentage among age group	Frequency	Percentage among age group	Frequency	Percentage among age group
Childhood (5–9 years)	Total (2103 patients)		Male (1142 patients)		Female (961 patients)	
Unspecified urinary incontinence	57	2.71	19	1.66	38	3.95
Chronic sinusitis	53	2.52	25	2.19	28	2.91
Early teenage (10–14 years)	Total (988 patients)		Male (455 patients)		Female (533 patients)	
Influenza due to other identified influenza virus	142	14.37	70	15.38	72	13.51
Urinary tract infection	87	8.81	11	2.42	76	14.26
Short stature	74	7.49	31	6.81	43	8.07
Asthma	69	6.98	49	10.77	20	3.75
Acute tonsillitis	68	6.88	29	6.37	39	7.32
Streptococcal, tonsillitis	62	6.28	27	5.93	35	6.57
Viral and other specified intestinal infections	52	5.26	28	6.15	24	4.50
Nonsuppurative otitis media	44	4.45	22	4.84	22	4.13
Acute pharyngitis	36	3.64	15	3.30	21	3.94
Acute bronchiolitis	35	3.54	21	4.62	14	2.63
Abdominal and pelvic pain	34	3.44	6	1.32	28	5.25
Acute sinusitis	30	3.04	16	3.52	14	2.63
Chronic sinusitis	29	2.94	9	1.98	20	3.75
Unspecified urinary incontinence	27	2.73	10	2.20	17	3.19
Fever of unknown origin	25	2.53	14	3.08	11	2.06
Late teenage (15–19 years)	Total (1822 patients)		Male (36 patients)		Female (1785 patients)	
Pregnancy	1183	64.93	NA	NA	1183	66.27
Excessive, frequent, and irregular menstruation	108	5.93	NA	NA	108	6.05
Urinary tract infection	103	5.65	0	0.00	103	5.77
Infection of vagina and vulva	81	4.45	NA	NA	81	4.54
Absent, scanty, and rare menstruation	80	4.39	NA	NA	80	4.48
Malaise and fatigue	29	1.59	0	0.00	29	1.62
Abdominal and pelvic pain	26	1.43	0	0.00	26	1.46
Female infertility, unspecified	23	1.26	NA	NA	23	1.29
Urethritis and urethral syndrome	22	1.21	0	0.00	22	1.23
Abortion: spontaneous	16	0.88	NA	NA	16	0.90
Other abnormal uterine and vaginal bleeding	14	0.77	NA	NA	14	0.78
Dorsalgia	14	0.77	0	0.00	14	0.78
Delayed menses	13	0.71	NA	NA	13	0.73
Dysmenorrhea, unspecified	11	0.60	NA	NA	11	0.62
Unspecified ovarian cysts	11	0.60	NA	NA	11	0.62

NA = Not applicable

(104 [41%]) ($P = 0.02$), with no significant difference between patients who lived in the IDP camp (146 [57%]) compared to those who resided in town (110 [43%]) ($P = 0.17$). The patients' median (IQRs) age at first presentation was 11 (9–19) days. More than half (51%) of them presented between days 3 and 11. Notably, one-third of these patients had delayed presentation at the age of 15 days and beyond.

Omphalitis was yet another common condition in the newborn age group, with an overall incidence of 8%. We reported 36 (53%) cases in girls and 31 (46%) cases in boys; 35 (52%) patients were living in an IDP camp, whereas 32 (48%) patients were town residents; no statistical differences were found. The mean (standard deviation [SD]) age at diagnosis was 12 (5.4) days, with median (IQRs) of 12 (3–15) days.

Undifferentiated febrile illnesses (UFIs) were an important issue in this cohort of patients, especially in infants (4%) and childhood (3%) age groups. We identified 344 patients

(almost 3% of total cohort) who were treated for UFIs. No statistical difference was observed in sex or living conditions. One hundred and sixty-two (47%) patients were males and 182 (53%) patients were females. One hundred and sixty-four (47%) patients lived in an IDP camp, whereas 180 (53%) were town residents. Their median (IQRs) age was 1.5 years (8 month to 4.4 years). The incidence of these illnesses peaked in July, August, and September [Figure 4].

Vaccination-preventable diseases

- Measles, mumps, rubella, and varicella (MMRV): Collectively, we reported 57 cases of MMRV infections, of them 37 cases were of varicella, 11 were of mumps, 8 were of rubella, and 1 case of measles. Thirty cases were diagnosed in patients who lived in the IDP camp and 27 cases were town residents. Toddlers age group was the most commonly affected one with 23 cases. The mean (SD) age of presentation was 5.0 (3.3) years, with median (min–max) of 3.3 (0.5–13) years. The incidence

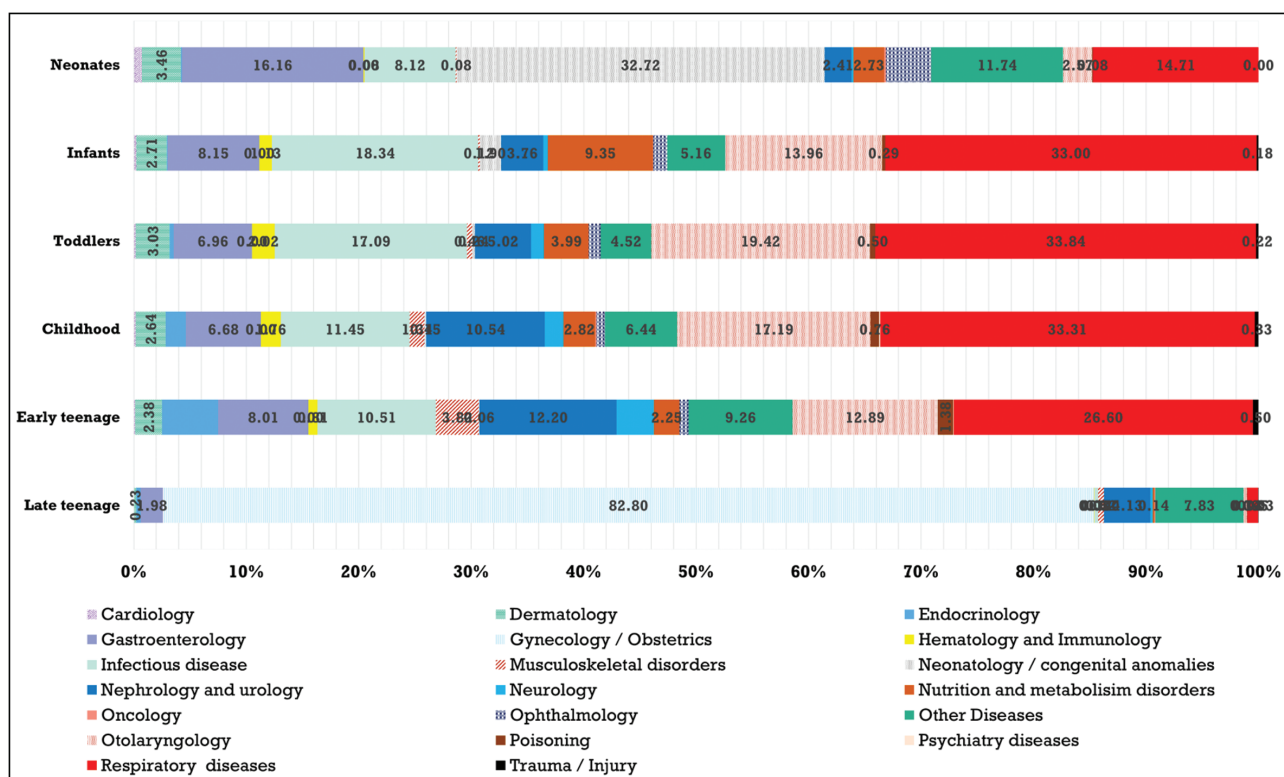


Figure 3: Frequency and distribution of diagnoses classified by category among different age groups. Values represent percentage among each age category

Table 2: Incidence of different diseases among town residents versus refugees

Diseases/conditions	Total number	Residents		Refugees		P value
		Frequency	Percentage	Frequency	Percentage	
URTI	4139	2339	57	1796	43	<0.001
LRTI	80	43	54	37	46	0.681
Infectious diarrhea	1192	502	42	689	58	<0.001
Otitis media	1949	961	49	988	51	0.637
Conjunctivitis	210	98	47	112	53	0.481
Infectious hepatitis	70	32	46	38	54	0.660
Chronic anemia	260	104	40	156	60	0.010
Malnutrition disorders	978	329	34	649	66	<0.001
Severe acute malnutrition	131	101	77	30	23	<0.001

of MMRV illnesses seemed to be steadily low until December 2017 when it started to increase.

- Poliomyelitis: We reported two cases of poliomyelitis, both presented with acute flaccid paralysis. The first one was in March 2017 in a 1-year-old girl who lived in an IDP camp. She was displaced from Deir ez-Zor district and her diagnosis was confirmed by laboratory tests. The second patient was identified in April 2017, a 9-year-old boy who was a town resident with a known diagnosis.
- Pertussis: We reported nine cases of pertussis (eight females and one male). Four of them were diagnosed in March, one patient in April, and four patients in May. Only two patients lived in an IDP camp and seven were town residents. Their mean (SD) age was 2 (2.4) years with a median (min-max) of 0.8 (0.3-8) years, and the most commonly affected age group was the infants. The diagnosis in these cases was

made based on clinical presentation and supported by the presence of leukocytosis.

- Hepatitis A: We reported 69 cases of hepatitis A, of them, 31 cases were in females and 38 in males. As for living conditions, 38 of these patients lived in an IDP camp and 31 in town. Their mean (SD) age was 5.3 (3.0) years with median (min-max) of 5 (0.2-13) years. The incidence peaked in November and December 2017. The diagnosis in these cases was made based on clinical findings and supported by the presence of abnormal liver function tests, and occasionally, confirmed by definite virology markers.

Asthma

During the study period, asthma was diagnosed in 702 patients with 1090 acute episodes. Of them, 452 (64%) were in boys and 250 (36%) were in girls ($P \leq 0.001$). The incidence was

not different according to living conditions with 361 (52%) patients living in an IDP camp and 339 (49%) patients in town, ($P = 0.52$). Their age group distribution was as follows: 284 (40%) infants, 228 (32%) toddlers, 129 (18%) childhood, 52 (7%) early teenage, and 5 (0.7%) late teenage. Their median (IQRs) age was equal to 1.2 years (1 month to 3.3 years).

Pregnancy

Gynecological/obstetrical illnesses/conditions among late teenage girls represented 89% of all their visits, and pregnancy-related encounters were 66% of the total cases. We reported 1183 pregnancies in the adolescents who visited our center during the study period. Of them, 750 (63%) lived in an IDP camp and 433 (37%) were residents in town. Their mean (SD) age was 17 (1) years with median (IQRs) of 18 (17–19) years. The largest group of patients (319 [27%]) were the 18-year-old patients, followed by 19-year-olds (310 [26%]), 17-year-olds (266 [23%]), and 16-year-olds (169 [14%]). However, 15-year-olds accounted for 97 (8%) cases and 14-year-olds for 22 (2%) cases. Notably, pregnant teens who were less than 18 years old represented 48% of the total pregnant patients in this cohort. Despite their higher absolute numbers, pregnant IDP received less antenatal care visits than town residents (1.7 vs. 2.0 visits), OR (95% confidence interval) = 1.5 (1.3–1.7), ($p \leq 0.001$).

Effects of seasonal changes

We observed an increased incidence of diarrheal diseases and cases of UFIs during summer and an increased incidence

of URTI during winter. MMRV infections showed moderate increase during spring and early summer with a surge during December. However, the prevalence of other communicable diseases was stable throughout the year. [Figure 4] shows the incidence of selected communicable diseases plotted by time. The incidence of lower respiratory tract infection (LRTI), acute conjunctivitis, and acute hepatitis seems to be stable over the course of the year.

Effects of age

We observed differences in the incidence of certain diseases according to patient's age. For example, the incidence of conjunctivitis was highest in neonates, malnutrition in infants, chronic anemia in toddlers, otitis media in infants and toddlers, and URTIs in childhood [Figure 5].

Effects of living conditions

We observed significantly higher rates of infectious diarrhea (58% of cases), chronic anemia (60% of cases), and malnutrition (66% of cases), especially the severe forms (76% of cases), among patients who lived in an IDP camp as opposed to town residents [Table 2].

DISCUSSION

In 2017, according to the United Nations High Commissioner for Refugees (UNHCR), 2.8 million children were displaced in Syria of a total of 6.5 million refugees, with 48% of Syrian registered refugees under 18 years of age. The United Nations

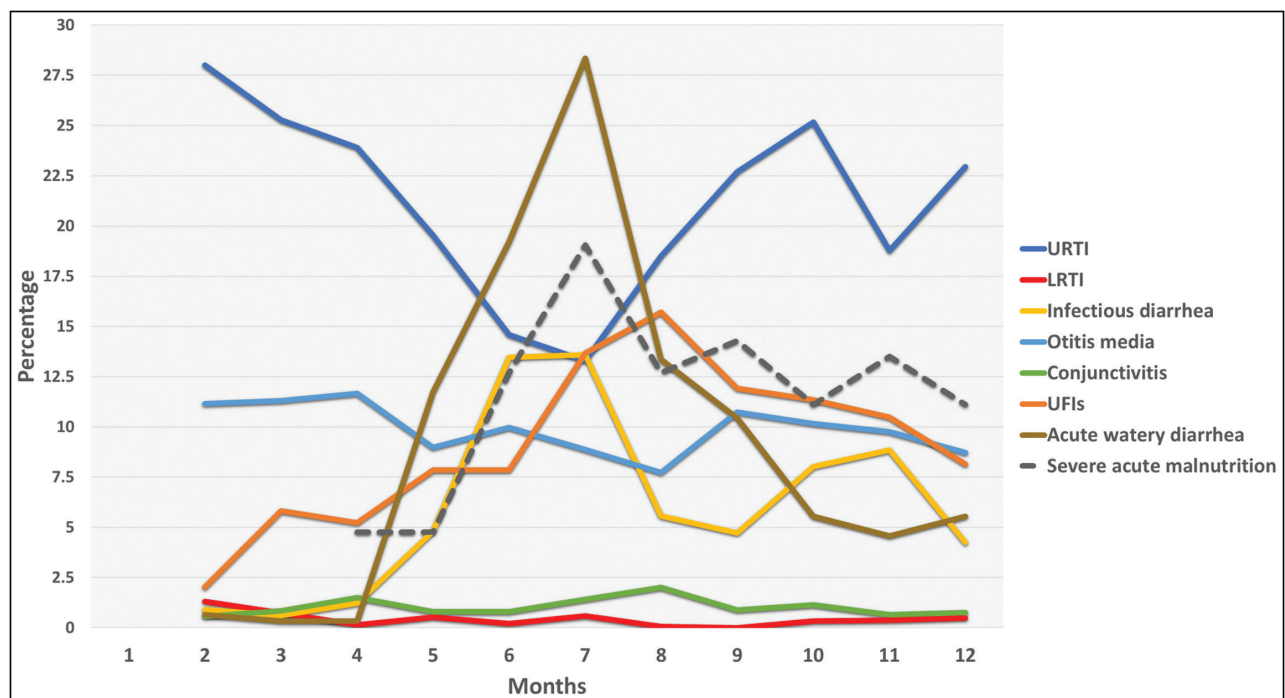


Figure 4: Selected communicable diseases plotted over months. Notice the significant seasonal changes in incidence of the URTI and infectious diarrheal diseases. URTIs peak in winter and infectious diarrhea peaks in summer. Spring season includes months of March, April, and May; summer includes June, July, and August; fall includes September, October, and November; and winter includes December, January, and February. Values represent percentage among all patients

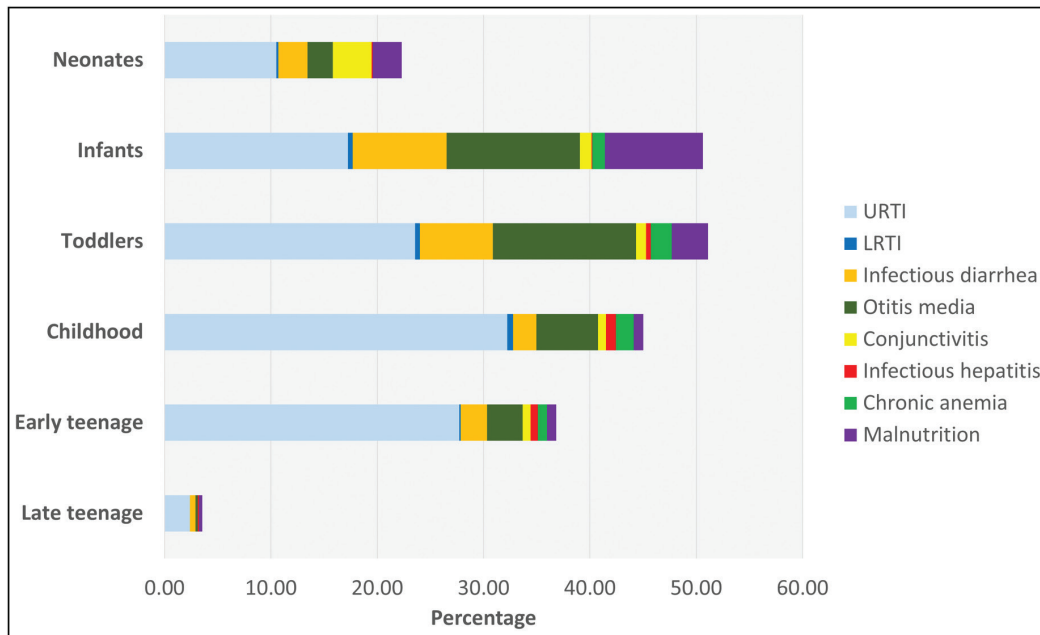


Figure 5: Most common diseases plotted against age group. Notice how the incidence varies among age groups. For example, otitis media is highest in infants and toddlers, and malnutrition is highest in infants and neonates. URTI is the most common disease among all age groups. Values represent percentage among each age category.



Figure 6: (A) and (B) Selected pictures from the refugee camp where people live in poorly made tents, during Winter 2017, they give an idea how bad the sanitation is and how challenging transportation is.

International Children's Emergency Fund (UNICEF) estimates that six million children still living in Syria are in need of humanitarian assistance and 420 thousand children living in besieged areas lack access to vital humanitarian aid. Studies have shown that IDP and refugee children are at risk of malnutrition (including severe malnutrition and death).^[9,13] In 2016, the WHO reported a drop in children vaccination rates in Syria to below 60% for all vaccines.^[14] This percentage may be even lower in IDP and refugee populations as accurate data are extremely difficult to obtain. Reports have shown increased incidence of deadly preventable infectious diseases such as meningitis, measles, and polio.^[15] Nonetheless, quantitative studies describing nutritional and infectious status of this population are still lacking.

To the best of our knowledge, this is the first quantitative description dedicated to child and adolescent health focusing on northwestern Syria in the academic literature. In this cohort, infants have surpassed all other age groups in

terms of number of medical encounters (2.6 encounter per patient), whereas newborns and childhood age groups have the least (1.6 encounter per patient). Adjusting for the short time span of the neonatal period (27 days), newborn infants are the clear leading age group in encounters burden (21.6 encounter/patient/year). The contribution of male patients to the disease burden was higher throughout all age groups except in teenage, when female patients' contribution to the burden became more prominent because of pregnancy-related issues. In the late teenage years, consultations for females outnumbered males by 50 to 1. This was mainly driven by pregnancy-related issues, making gynecologic and obstetrical presentations rank fourth among all disease/condition categories. In 2013, UNICEF reported that 21.7% of the Syrian population were aged 10–19 years, and that 10% of the females in this age group were married.^[16] Assuming that this is true for the study center population, then the expected number of married teens in this population would exceed 3000. This conservative estimate indicates that the

study cohort encounters (1183 pregnancies) represent no more than 35% of the potential burden.

The complex social and economic factors, which promote early marriage, are exacerbated by conflict and the resultant poverty and suffering. For some families, economic drivers and a desire to protect girls drive early marriage. However, this can have significant impacts on the child brides, their pregnancies, and associated complications, their newborn infants, and societal implications.

The communicable diseases, as expected, represented the major bulk of the disease burden in this cohort. It accounted for more than half of all consultations across all age groups, infants and toddlers were the most affected, a pattern not out of the norm considering the conditions of living in this region. Notably, GBD 2016 study reported the incidence of URTIs, otitis media, and diarrheal diseases among Syrian children to peak in the first year of life.^[17] The observed seasonal variations of these disorders were consistent with published literature, but the incidence of some infections based on the area of residence was relatively unfamiliar. For example, infectious diarrhea was more common in IDP camp inhabitants, whereas URTIs were more likely among town residents. This finding may be partially explained by the reluctance of refugees to make the “hard” journey to the medical center for seemingly simple issues, such as URTIs, compared to more threatening ones, such as diarrhea complicated by fever and dehydration [Figure 6]. However, this finding is more likely to be associated with the unsanitary living conditions in the camp as compared to town residence, such as overcrowding, shared toilets, contaminated water supplies, and deteriorated food quality. Other infections, however, were encountered almost equally among these two groups.

The IDP predominance was again observed for most of the vaccination-preventable illnesses. Pertussis infection, however, revealed a predilection toward town residents (seven of nine), which was reminiscent of URTIs distribution noted earlier. Of note was the case of the 9-year-old boy diagnosed with poliomyelitis. He had no verifiable records of his vaccination status, nonetheless, he would be expected to have full vaccination against poliomyelitis before 2011, raising the suspicion of a possible underlying immunodeficiency disorder or vaccine failure because of unidentified reason. Notably, WHO and UNICEF reported that vaccination rates among Syrian children have deteriorated remarkably over the past 7 years.^[14] For example, in 2017, only 30% of infants had completed all three doses of poliomyelitis or diphtheria, tetanus, and pertussis vaccines as opposed to 80% of infants

in 2010. However, despite this drop of vaccination rates, no cases of the wild poliovirus infection have been reported in Syria since 1999. Indeed, all cases reported thereafter were due to the circulating vaccine-related poliovirus type-2.^[18] Importantly, no accurate data about the vaccination coverage in Atmeh were available during the study period, and it was probably the case in other parts of the country where IDP were heavily present.^[19]

Cases of UFIs, especially in infants and young children, accounted for almost 3% of total disease burden in this cohort, with a trend toward increased incidence in females and town residents (53%). Their peak incidence occurred in July, August, and September, in parallel with infectious diarrhea, suggested a possible etiological association that should be explored. Major limitations in diagnostic capabilities of this center are obvious, however, the impact of these limitations on UFIs rates is hard to quantify.

The nutritional deficiencies and their complications, especially iron-deficiency anemia, were more encountered in the IDP (66%) and in infants and toddlers, with no gender differences in incidence rates. Almost 77% of all malnourished children were less than a year old. This could be partially attributed to the diminished quantities and deteriorated qualities of the food supplies and reduced breast milk in stressed, malnourished mothers. Furthermore, the high proportion of young mothers in this cohort (almost half are less than 18 years old) and their limited access to proper education, especially in terms of infants’ care and nutrition, make it more likely for these infants to have reduced breastfeeding and malnutrition even in the absence of drastic food shortages. More attention to maternal education along with other measures is needed to mitigate the impact of malnutrition on these infants.

Cases of vitamin D and/or calcium deficiency were of special importance, they represented 18% of all nutritional deficiency cases. Anecdotally, rates of exclusive breast feeding without proper supplementations were as high as 80% in these infants. As breast milk is known to be a poor source of vitamin D, this probably played a significant role in predisposing them to vitamin D deficiency and its consequences.

The cases labeled as “poisoning” were mostly in boys younger than 4 years of age. Seemingly, many patients of this category were grouped together based on a semantic association; thus, food poisoning cases were joined to “poisoning” because of insect envenomation, whereas they would have been more

accurately placed along cases of gastroenteritis and other gastrointestinal conditions.

Neonatal jaundice contribution to the newborn infants' burden of disease, especially among boys and refugees, was remarkable; it accounted for 30% of this burden. Although jaundice was encountered more frequently among refugee infants as opposed to town residents, the difference was not statistically significant ($P = 0.17$), probably as a result of inadequate sample size. Furthermore, the fact that one-third of these patients presented at an age of 15 days and beyond argues against a simple "physiological jaundice" and suggests a pathological process induced, perhaps, by deficient breastfeeding practices complicated by dehydration. Of note, a good proportion of these infants is cared for by inexperienced young mothers. Lastly, the contribution of other diseases, such as congenital hemoglobinopathies and hemolytic disease of the newborn, to the development of this prolonged jaundice, is hard to quantify, nonetheless, it should not be discounted altogether.

Cardiac illnesses were apparently underrepresented in this cohort, only 44 cases were diagnosed. Having 59% of these conditions encountered in less than 1-year-old patients is probably driven by the inability of our center to deliver the advanced services, such as surgical interventions, that older patients with more complex conditions may need. Furthermore, our data cover a period of 1 year; older patients with congenital heart diseases are more likely to be diagnosed before the study period and mostly would be followed in a specialized center. Similarly, a plausible explanation of less-than-expected rate of trauma cases in this cohort is the presence of other centers in the vicinity with trauma as their primary focus of care. Thus, it would be unwise to estimate the incidence of trauma in this population based on the figures we reported. The same caution should be exercised when it comes to psychiatric illnesses; despite the stressful conditions of these patients, which favor the development of conditions, such as depression and anxiety disorders, the psychiatric illnesses were almost absent in this cohort; only four cases were reported. This underrepresentation makes any estimate related to this category of illnesses in this population far from reality.

The profound shortages of health-care workers as a result of the unsafe operational conditions are another issue that needs to be addressed. The WHO reported 678 attacks on health-care personnel and facilities between early 2014 and March 2018.^[20] SEMA and other organizations reported 382 attacks in 2017, with 61 casualties and 239 seriously injured among health-care workers. This unsafe environment has

led many health-care providers, especially physicians, to flee the country. In Idlib governorate, for example, there are 492 fully trained physicians (of them 61 pediatricians) who serve an estimated population of more than three million. Notably, the average physician density (physician/10,000 people) in Syria before 2011 was 14.6, which is higher than both global (13.9) and regional (12.7) ones.^[21] The UNICEF report issued in 2013^[16] may clarify this further. It reports that 42% of the Syrian population is younger than 18 years of age, thus, the pediatric population in the region of our study center would have exceeded 210,000 people, served by only nine pediatricians (i.e., 23,500 patients per physician), a far larger number than the reported average of 1,546 patients per pediatrician in the USA during 1990s.^[22] This severe shortage led many centers to rely on physicians-in-training to fill some of these gaps.

Limitations

Several limitations in our study need to be considered. First, the recent deployment of "HealthySyria^{TB}" program limited the analyzed data to the year 2017 only, which made it hard to generalize some of the findings related to the incidence/prevalence of diseases. Second, the limited diagnostic capabilities and suboptimal training and staffing of this facility along with many difficulties the patients face on seeking consultation may have skewed some of the study results, such as the incidence of URTIs or UFIs. Third, the uncertainties in terms of population totals and mix make it hard to predict the future trends in actual needs and specific burdens. Lastly, as the data of this study are derived from a single medical center in the northwestern Syria, it may not reliably represent other affected areas in Syria nor the diaspora communities in the neighboring countries.

Future directions

We are expecting to complete the implementation of "HealthySyria^{TB}" program in all SEMA-affiliated centers within the upcoming year. We also have invited other organizations to consider using this program in their affiliated centers, should this implementation proceed as planned, the reliability and the scope of collected data will improve, leading to a positive impact on the quality of future iterations of this study. For the next years of the Healthy-Syria studies, we expect a better data collection and coding that should lead to a more accurate estimation of prevalence of vaccination-preventable diseases, malnutrition, and other communicable and chronic diseases. We are also planning to have more centers in different areas, using the program to have a more generatable picture. This should improve the health needs assessments for the IDP and responsiveness. Importantly, it can inform the public health and population

health measures needed to address particular conditions in this population.

CONCLUSION

In this study, we provide a quantitative description of the burden of different diseases and conditions among children and adolescents in northwestern Syria. We found that infectious diseases represent the majority of the burden across all age groups, with URTIs, infectious diarrhea, and otitis media representing almost half of all cases in this category. There was also a high burden of nutritional deficiencies, with acute severe malnutrition that may contribute. We identify relapse of vaccination-preventable diseases including measles, mumps, and rubella, unsurprising given the decline in vaccination coverage in this area and others in Syria. The majority of infectious diarrheal diseases and malnutrition occurred in people living in IDP camps, likely related to poor sanitation and food supply. We reported a seasonal variation in the incidence of URTIs and infectious diarrhea and a high number of pregnancy and delivery in adolescents.

Our findings offer some insights that could help the medical and humanitarian organizations to better understand the scope of problems encountered and how to address the most urgent needs of the impoverished and displaced people living in this region. On the basis of these findings, a number of recommendations can be made around improving sanitation and living conditions for those in the IDP camps. Improving health services for them as well as education and public health measures (for both residents and IDP) can support the health of children and adolescents. Our data on the nutritional status may not represent all cases in the catchment area and may only be the more severe cases, as such, addressing nutrition and feeding at a population level can help reduce micro- and macronutrient deficiencies. Syria's war has led to an exodus of its health workers with those remaining being under increased pressure, some may not have been able to complete their specialty training. As such, supporting them with updated courses on conditions of particular concern, which are identified here, for example, infectious diseases, teenage pregnancies, and malnutrition can lead to improvements in the health of the populations.

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Conflicts of interest

There are no conflicts of interest.

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Supplementary Table 1:

Diagnosis category	ICD-10 codes used
Upper Respiratory Tract Infections (URTI)	J01 - Acute sinusitis, J02 - Acute pharyngitis, J020 - Streptococcal pharyngitis, J03 - Acute tonsillitis, J030 - Streptococcal tonsillitis, J04 - Acute laryngitis and tracheitis, J040 - Acute laryngitis, J05 - Acute obstructive laryngitis [croup] and epiglottitis, J06 - Acute upper respiratory infections of multiple and unspecified sites, J09 - Influenza due to certain identified influenza viruses, J10 - Influenza due to other identified influenza virus, J11 – Influenza, J31 - Chronic rhinitis, nasopharyngitis and pharyngitis, J32 - Chronic sinusitis, J340 - Abscess, furuncle and carbuncle of nose, J36 - Peritonsillar abscess, J37 - Chronic laryngitis and laryngo-tracheitis, A36 – Diphtheria, and A37 - Whooping cough.
Lower Respiratory Tract Infections (LRTI)	J041 - Acute tracheitis, J12 - Viral pneumonia, not elsewhere classified, J13 - Pneumonia due to Streptococcus pneumoniae, J14 - Pneumonia due to Hemophilus influenzae, J15 - Bacterial pneumonia, not elsewhere classified, J16 - Pneumonia due to other infectious organisms, not elsewhere classified, J17 - Pneumonia in diseases classified elsewhere, J18 – Pneumonia, J20 - Acute bronchitis, J21 - Acute bronchiolitis, J22 - Unspecified acute lower respiratory infection, J40 - Bronchitis, not specified as acute or chronic, and J41 - Simple and mucopurulent chronic bronchitis
Infectious Diarrheal diseases	A06 – Amebiasis, A084 - Viral Gastroenteritis, A09 - Bacterial Gastroenteritis, A090 - Acute Bloody Diarrhea (suspected Shigella), A099 - Gastroenteritis of unspecified infectious origin, A03 – Shigellosis, A04 - Other bacterial intestinal infections, and A00 - Cholera / acute watery diarrhea.
Chronic anemia	D50 - Iron deficiency anemia, D51 - Vitamin B12 deficiency anemia, D52 - Folate deficiency anemia, D53 - Other nutritional anemias, D55.0 - Favism - G6PD Deficiency, D55 - Anemia due to enzyme disorders, D56 – Thalassemia, D57 - Sickle-cell disorders, D58 - Other hereditary hemolytic anemias, D59 - Acquired hemolytic anemia, D60 - Acquired pure red cell aplasia [erythroblastopenia], D61 - Other aplastic anemias and other bone marrow failure syndromes, D62 - Acute posthemorrhagic anemia, D63 - Anemia in chronic diseases classified elsewhere, D64 - Other anemias, and D649 – Anemia.
Malnutrition disorders	E45 - Retarded development following protein-energy malnutrition, E64 - Sequelae of malnutrition and other nutritional deficiencies, E63 - Other nutritional deficiencies, E55 - Vitamin D deficiency, E61 - Deficiency of other nutrient elements, E46 - Unspecified protein-calorie malnutrition, E58 - Dietary calcium deficiency, E56 - Other vitamin deficiencies, R62.51 - Failure to thrive, E43 - Unspecified severe protein-calorie malnutrition, Rickets, E44 - Protein-calorie malnutrition of moderate and mild degree, E60 - Dietary zinc deficiency.

Supplementary Table 2:

Neonates (1 to 27 days)		Total number of patients		862	Total number of diagnoses		1244
Diagnosis	ICD-10 code	Total		Male (467 patients)		Female (395 patients)	
		Frequency	Percentage among age group	Frequency	Percentage among age group	Frequency	Percentage among age group
Cardiology		9	1.04	4	0.86	5	1.27
Cardiac murmurs and other cardiac sounds	R01	9	1.04	4	0.86	5	1.27
Dermatology		42	4.87	22	4.71	20	5.06
Rash and other nonspecific skin eruption	R21	6	0.70	4	0.86	2	0.51
Other erythematous conditions	L53	5	0.58	2	0.43	3	0.76
Diaper [napkin] dermatitis	L22	20	2.32	10	2.14	10	2.53
Allergic contact dermatitis	L23	2	0.23	1	0.21	1	0.25
Exfoliatn due to erythemat cond accord extent body involv	NA	1	0.12	0	0.00	1	0.25
Impetigo	L01	1	0.12	1	0.21	0	0.00
Infective dermatitis/Eczematoid dermatitis	L303	3	0.35	2	0.43	1	0.25
Erythema multiforme	L51	1	0.12	0	0.00	1	0.25
Erythema in diseases classified elsewhere	L54	1	0.12	0	0.00	1	0.25
Unspecified contact dermatitis	L25	1	0.12	1	0.21	0	0.00
Pemphigus	L10	1	0.12	1	0.21	0	0.00
Endocrinology		1	0.12	0	0.00	1	0.25
Hypoglycemia	NA	1	0.12	0	0.00	1	0.25
Gastroenterology		200	23.20	96	20.56	104	26.33
Abdominal Colic/Other and unspecified abdominal pain	R104	92	10.67	43	9.21	49	12.41
Anal fissure, unspecified	K602	1	0.12	1	0.21	0	0.00
Cellulitis and abscess of mouth	K122	2	0.23	0	0.00	2	0.51
Constipation	K590	3	0.35	0	0.00	3	0.76
Flatulence and related conditions	R14	1	0.12	0	0.00	1	0.25
Gastro oesophageal reflux disease	K219	2	0.23	1	0.21	1	0.25
Gastrointestinal bleeding	NA	1	0.12	1	0.21	0	0.00
Inguinal hernia	K40	3	0.35	3	0.64	0	0.00
Intestinal malabsorption	K90	1	0.12	0	0.00	1	0.25
Nausea and vomiting	R11	21	2.44	10	2.14	11	2.78
Other and unsp noninfective gastroenteritis and colitis	K52	4	0.46	3	0.64	1	0.25
Other diseases of anus and rectum	K62	2	0.23	2	0.43	0	0.00
Other diseases of lip and oral mucosa	K13	3	0.35	2	0.43	1	0.25
Recurrent oral aphthae	K120	57	6.61	27	5.78	30	7.59
Stomatitis and related lesions	K12	6	0.70	2	0.43	4	1.01
Ventral hernia	K43	1	0.12	1	0.21	0	0.00
Hematology & Immunology		1	0.12	1	0.21	0	0.00
Other and unsp diseases of blood and blood-forming organs	D75	1	0.12	1	0.21	0	0.00
Infectious disease		100	11.60	51	10.92	49	12.41
Viral and other specified intestinal infections	A08	24	2.78	10	2.14	14	3.54
Other bacterial intestinal infections	A04	1	0.12	0	0.00	1	0.25
Fever of other and unknown origin	R50	19	2.20	13	2.78	6	1.52
Dehydration fever	NA9	23	2.67	12	2.57	12	3.04
Cholera/ AWD/ Suspected Cholera	A00	12	1.39	5	1.07	7	1.77
Viral intestinal infection, unspecified	A084	5	0.58	3	0.64	2	0.51
Gastroenteritis and colitis of unspecified origin	A099	5	0.58	2	0.43	3	0.76
Circumcision infection	NA10	1	0.12	1	0.21	0	0.00
Diarrhea and gastroenteritis of presumed infectious origin	A09	6	0.70	3	0.64	3	0.76
septicaemia/Sepsis	A41	2	0.23	1	0.21	1	0.25
Acute hepatitis A	B15	1	0.12	1	0.21	0	0.00
Musculoskeletal disorders		1	0.12	1	0.21	0	0.00
Other disorders of bone	M89	1	0.12	1	0.21	0	0.00
Neonatology / congenital anomalies		389	45.13	219	46.90	170	43.04
Birth injury to skeleton	P13	2	0.23	1	0.21	1	0.25
Chronic respiratory disease origin in the perinatal period	P27	6	0.70	4	0.86	2	0.50
Cleft lip	Q36	2	0.23	0	0.00	2	0.51
clitroreomegaly	NA	1	0.12	0	0.00	1	0.25
Congenital deformities of feet	Q66	1	0.12	0	0.00	1	0.25
Congenital deformities of hip	Q65	1	0.12	0	0.00	1	0.25
Cri de chat syndrome	Q93.4	1	0.12	0	0.00	1	0.25
Disord of NB related to slow fetal growth and fetal malnut	P05	2	0.23	0	0.00	2	0.51
Down syndrome	Q90	1	0.12	1	0.21	0	0.00
Erb Duchenn palsy	P14.0	5	0.58	3	0.64	2	0.51
infantile colic	NA	24	2.78	18	3.85	6	1.52
Inflammatory disorders of breast	N61	1	0.12	0	0.00	1	0.25
Intracranial laceration and hemorrhage due to birth injury	P10	1	0.12	1	0.21	0	0.00
Labia migora megaly	NA	2	0.23	0	0.00	2	0.51
Neoborn vaginal hemorrhage	NA	1	0.12	0	0.00	1	0.25
Neonatal Breast Enlargement	NA	1	0.12	1	0.21	0	0.00
Neonatal jaundice due to other excessive haemolysis	NA	167	19.37	103	22.06	64	16.20
Neonatal jaundice from other and unspecified causes	P59	80	9.28	45	9.64	35	8.86
Newborn affected by maternal complications of pregnancy	NA	1	0.12	0	0.00	1	0.25
Omphalitis of newborn	P38	67	7.77	31	6.64	36	9.11
open posterior fontanelle	NA	2	0.23	0	0.00	2	0.51
Other congenital malformations of digestive system	Q45	1	0.12	1	0.21	0	0.00
Other disorders of breast	O92	1	0.12	0	0.00	1	0.25
Other infections specific to the perinatal period	P39	1	0.12	0	0.00	1	0.25
Respiratory distress of newborn	P22	5	0.58	3	0.64	2	0.51
Swallowed blood syndrome	P78.2	2	0.23	1	0.21	1	0.25
Umbilical hemorrhage of newborn	P51	5	0.58	4	0.86	1	0.25
Unspecified jaundice	R17	5	0.58	2	0.43	3	0.76
Nephrology and urology		29	3.36	16	3.43	13	3.29
Cystitis	N30	3	0.35	3	0.64	0	0.00
Urinary tract infection	N390	11	1.28	4	0.86	7	1.77
Pyelonephritis	N12	2	0.23	2	0.43	0	0.00
Hematuria	R31	5	0.58	3	0.64	2	0.51
Oth and unsp symptoms and signs involving the GU sys	R39	2	0.23	1	0.21	1	0.25
Urethritis and urethral syndrome	N34	2	0.23	2	0.43	0	0.00
Anuria and oliguria	R34	2	0.23	1	0.21	1	0.25
Pain associated with micturition	R30	1	0.12	0	0.00	1	0.25
Retention of urine	R33	1	0.12	0	0.00	1	0.25
Neurology		2	0.23	0	0.00	2	0.51

Supplementary Table 2: Continued

Other paralytic syndromes	G83	1	0.12	0	0.00	1	0.25
Febrile Convulsion	R560	1	0.12	0	0.00	1	0.25
Nutrition and metabolism disorders		34	3.94	20	4.28	14	3.54
Other nutritional deficiencies	E63	18	2.09	13	2.78	0	0.00
suboptimal breastfeeding	NA	3	0.35	3	0.64	0	0.00
Failure to thrive	R62.51	2	0.23	1	0.21	1	0.25
Deficiency of other nutrient elements	E61	3	0.35	0	0.00	3	0.76
Sequelae of malnutrition and other nutritional deficiencies	E64	3	0.35	0	0.00	3	0.76
Other nutritional deficiencies	E63	18	2.09	0	0.00	5	1.27
Vitamin D deficiency	E55	2	0.23	0	0.00	2	0.51
Retarded development following protein-energy malnutrition	E45	2	0.23	2	0.43	0	0.00
Anorexia	R630	1	0.12	1	0.21	0	0.00
Oncology		2	0.23	0	0.00	2	0.51
Hemangioma	NA	1	0.12	0	0.00	1	0.25
Neoplasm of uncertain behavior of brain and cns	NA	1	0.12	0	0.00	1	0.25
Ophthalmology		52	6.03	34	7.28	18	4.56
Conjunctivitis	H10	39	4.52	25	5.35	14	3.54
Stenosis and insufficiency of lacrimal passages	H045	9	1.04	6	1.28	3	0.76
Dacryoadenitis	H040	1	0.12	1	0.21	0	0.00
Disorders of lacrimal system	H04	1	0.12	1	0.21	0	0.00
Other disorders of conjunctiva	H11	2	0.23	1	0.21	1	0.25
Otolaryngology		29	3.36	17	3.64	12	3.04
Nonsuppurative otitis media	H65	25	2.90	13	2.78	12	3.04
coanal atresia	NA	1	0.12	1	0.21	0	0.00
Acute tonsillitis	J03	2	0.23	2	0.43	0	0.00
Acute suppurative otitis media	H660	1	0.12	1	0.21	0	0.00
Poisoning		1	0.12	1	0.21	0	0.00
Venom of other arthropods/ Insect bite	T634	1	0.12	1	0.21	0	0.00
Respiratory diseases		179	20.77	93	19.91	86	21.77
Acute bronchiolitis	J21	35	4.06	16	3.43	19	4.81
Acute bronchitis	J20	9	1.04	6	1.28	3	0.76
Acute laryngitis	J040	1	0.12	0	0.00	1	0.25
Acute pharyngitis	J02	3	0.35	1	0.21	2	0.51
Acute respiratory distress syndrome	J80	1	0.12	1	0.21	0	0.00
Acute upper resp infections of multiple and unsp sites	J06	11	1.28	5	1.07	6	1.52
Asthma	J45	6	0.70	5	1.07	1	0.25
Bacterial pneumonia, not elsewhere classified	J15	1	0.12	1	0.21	0	0.00
Cough	R05	3	0.35	1	0.21	2	0.51
Diseases of vocal cords and larynx, not elsewhere classified	J38	2	0.23	1	0.21	1	0.25
Influenza due to other identified influenza virus	J10	72	9.36	38	8.14	34	8.61
Laryngeal spasm	J385	2	0.23	0	0.00	2	0.51
Laryngomalacia	NA	3	0.35	0	0.00	3	0.76
Meconium aspiration	NA	1	0.12	1	0.21	0	0.00
NASOPHARYNGITIS, Common cold	J29	25	2.90	13	2.78	12	3.04
Edema of larynx	J384	1	0.12	1	0.21	0	0.00
Other interstitial pulmonary diseases	J84	1	0.12	1	0.21	0	0.00
Pneumonia	J18	1	0.12	1	0.21	0	0.00
Streptococcal pharyngitis	J020	1	0.12	1	0.21	0	0.00
Infants (28 to 365 days)			Total number of patients	3662	Total number of diagnoses	8303	
			Total	Male (1921 patients)	Female (1741 patients)		
Diagnosis	ICD-10 code	Frequency	Percentage among age group	Frequency	Percentage among age group	Frequency	Percentage among age group
Cardiology		17	0.46	12	0.62	5	0.29
Cardiac murmurs and other cardiac sounds	R01	11	0.30	7	0.36	4	0.23
Nonrheumatic pulmonary valve disorders	I37	2	0.05	2	0.10	0	0.00
Obstructive hypertrophic cardiomyopathy	I421	1	0.03	1	0.05	0	0.00
Other and unspecified disorders of circulatory system	I99	1	0.03	1	0.05	0	0.00
Rheumatic chorea with heart involvement	I020	2	0.05	1	0.05	1	0.06
Dermatology		224	6.12	116	6.04	108	6.20
Abscess furuncle and carbuncle of nose	NA	2	0.05	0	0.00	2	0.11
Allergic contact dermatitis	L23	13	0.35	7	0.36	6	0.34
Cellulitis	L03	2	0.05	1	0.05	1	0.06
Cicatricial alopecia [scarring hair loss]	L66	1	0.03	1	0.05	0	0.00
Cutaneous abscess, furuncle and carbuncle, unspecified	L029	10	0.27	2	0.10	8	0.44
Diaper [napkin] dermatitis	L22	109	2.98	50	2.60	59	3.39
Eczema	L303	9	0.25	8	0.42	1	0.06
Impetigo	L01	7	0.19	4	0.21	3	0.17
Infective dermatitis/Eczematoid dermatitis	L303	21	0.57	7	0.36	14	0.80
Mongolian spot	NA	1	0.03	0	0.00	1	0.06
Nail disorders	L60	2	0.05	2	0.10	0	0.00
oral thrush (candidiasis)	B37.0	1	0.03	1	0.05	0	0.00
Other and unspecified dermatitis	L30	5	0.14	5	0.26	0	0.00
Other local infections of skin and subcutaneous tissue	L08	1	0.03	1	0.05	0	0.00
Pityriasis rosea	L42	2	0.05	2	0.10	0	0.00
Psoriasis	L40	1	0.03	0	0.00	1	0.06
Rash and other nonspecific skin eruption	R21	30	0.82	19	0.99	11	0.63
Scalp infection	NA	1	0.03	1	0.05	0	0.00
Skin wort	NA	1	0.03	1	0.05	0	0.00
Unspecified contact dermatitis	L25	1	0.03	1	0.05	0	0.00
Urticaria	L50	4	0.11	3	0.16	1	0.06
Endocrinology		6	0.16	2	0.10	4	0.23
Disorders of glycoprotein metabolism	E77	1	0.03	0	0.00	1	0.06
Porphyria	E80.20	1	0.03	0	0.00	1	0.06
Short stature	R62.52	1	0.03	1	0.05	0	0.00
Subclinical iodine-deficiency hypothyroidism	E02	3	0.08	1	0.05	2	0.11
Gastroenterology		651	17.78	358	18.64	293	16.83
Abdominal and pelvic pain	R10	3	0.08	2	0.10	1	0.06
Abdominal Colic/Other and unspecified abdominal pain	R104	156	4.26	88	4.58	68	3.91
Anal fissure, unspecified	K602	5	0.14	4	0.21	1	0.06
Cellulitis and abscess of mouth	K122	28	0.76	17	0.88	11	0.63
Celiac disease	K900	7	0.19	3	0.16	4	0.23
Constipation	K590	33	0.90	15	0.78	18	1.03
Diseases of salivary glands	K11	1	0.03	1	0.05	0	0.00
Disorders of esophagus in diseases classified elsewhere	K23	1	0.03	0	0.00	1	0.06

Supplementary Table 2: Continued

Dyspepsia	R101	18	0.49	6	0.31	12	0.69
Fecal incontinence	R15	1	0.03	0	0.00	1	0.06
Femoral hernia	K41	1	0.03	1	0.05	0	0.00
Fissure and fistula of anal and rectal regions	K60	6	0.16	1	0.05	5	0.29
Flatulence and related conditions	R14	2	0.05	1	0.05	1	0.06
Food allergy	NA	1	0.03	0	0.00	1	0.06
Foreign body in jejunum	NA	2	0.05	1	0.05	1	0.06
Functional dyspepsia	K30	2	0.05	2	0.10	0	0.00
Gastro-esophageal reflux disease	K219	6	0.16	5	0.26	1	0.06
Hemorrhoids and perianal venous thrombosis	K64	1	0.03	1	0.05	0	0.00
Inguinal hernia	K40	14	0.38	12	0.62	2	0.11
Intestinal malabsorption	K90	2	0.05	0	0.00	2	0.11
Lactose intolerance	F73	2	0.05	0	0.00	2	0.11
Nausea and vomiting	R11	91	2.48	46	2.39	45	2.58
Oth symptoms and signs involving the dgstv sys and abdomen	R19	8	0.22	7	0.36	1	0.06
Other and unsp noninfective gastroenteritis and colitis	K52	88	2.40	50	2.60	38	2.18
Other diseases of anus and rectum	K62	1	0.03	1	0.05	0	0.00
Other diseases of biliary tract	K83	1	0.03	0	0.00	1	0.06
Other diseases of lip and oral mucosa	K13	4	0.11	3	0.16	1	0.06
Recurrent oral aphthae	K120	115	3.14	57	2.97	58	3.33
Sialoadenitis	K112	1	0.03	1	0.05	0	0.00
Stomatitis and related lesion	K12	43	1.17	28	1.46	15	0.86
Umbilical hernia	K42	5	0.14	2	0.10	3	0.17
Unspecified jaundice	R17	3	0.08	2	0.10	1	0.06
Vascular disorders of intestine	K55	1	0.03	1	0.05	0	0.00
Hematology & immunology		91	2.48	50	2.60	41	2.35
Anaemia, unspecified	D649	21	0.57	12	0.62	9	0.51
Favism - G6PD Deficiency	D55.0	1	0.03	1	0.05	0	0.00
Folate deficiency anemia	D52	21	0.57	13	0.68	8	0.46
Other and unsp diseases of blood and blood-forming organs	D75	1	0.03	1	0.05	0	0.00
Other hereditary hemolytic anemias	D58	1	0.03	1	0.05	0	0.00
Other nutritional anemias	D53	40	1.09	17	0.88	23	1.32
Thalassemia	D56	5	0.14	5	0.26	0	0.00
Iron deficiency anemia	D50	1	0.03	0	0.00	1	0.06
Infectious disease		1501	40.99	810	42.17	671	38.54
Acute bloody Diarrhea	A090	5	0.14	1	0.05	4	0.23
Acute hepatitis A	B15	4	0.11	2	0.10	2	0.11
Acute hepatitis B	B16	1	0.03	1	0.05	0	0.00
Acute poliomyelitis	A80	1	0.03	0	0.00	1	0.06
Bacteremia	NA	3	0.08	0	0.00	3	0.17
Cholera/ AWD/ Suspected Cholera	A00	188	5.13	84	4.37	98	5.63
Circumcision infection	NA10	4	0.11	4	0.21	0	0.00
Dehydration fever	NA9	29	0.79	18	0.94	11	0.63
Diarrhea and gastroenteritis of presumed infectious origin	A09	121	3.30	76	3.96	43	2.47
Fever of other and unknown origin	R50	135	3.69	64	3.33	69	3.96
Gastroenteritis and colitis of unspecified origin	A099	95	2.59	54	2.81	41	2.35
Hand, foot and mouth disease	B08.4	6	0.16	3	0.16	3	0.17
Helminthiasis/Other helminthiasis	B83	2	0.05	1	0.05	1	0.06
Influenza due to certain identified influenza viruses	J09	2	0.05	2	0.10	0	0.00
Mumps	B26	2	0.05	1	0.05	1	0.06
Osteomyelitis	M86	1	0.03	1	0.05	0	0.00
Other bacterial intestinal infections	A04	5	0.14	2	0.10	3	0.17
Other intestinal helminthiasis, not elsewhere classified	B81	1	0.03	1	0.05	0	0.00
Other protozoal intestinal diseases	A07	2	0.05	2	0.10	0	0.00
Rat-bite fevers	A25	1	0.03	1	0.05	0	0.00
Salivary gland abscess	K113	1	0.03	0	0.00	1	0.06
Septicemia/Sepsis	A41	2	0.05	2	0.10	0	0.00
Stomatitis and related lesion	NA	1	0.03	1	0.05	0	0.00
Streptococcal sepsis	A40	4	0.11	1	0.05	3	0.17
Typhoid and paratyphoid fevers	A01	1	0.03	0	0.00	1	0.06
Unspecified viral hepatitis	B19	1	0.03	1	0.05	0	0.00
Varicella chickenpox	B01	4	0.11	1	0.05	2	0.11
Viral and other specified intestinal infections	A08	605	16.52	344	17.91	255	14.65
Viral intestinal infection, unspecified	A084	266	7.26	140	7.29	123	7.06
Viral meningitis	A87	2	0.05	1	0.05	1	0.06
Whooping cough	A37	6	0.16	1	0.05	5	0.29
Musculoskeletal disorders		8	0.22	3	0.16	5	0.29
Muscle fibrosis after injections	NA	1	0.03	0	0.00	1	0.06
Osteoarthritis of hip	M16	3	0.08	0	0.00	3	0.17
Other disorders of cartilage	M94	1	0.03	1	0.05	0	0.00
Other joint disorder, not elsewhere classified	M25	1	0.03	1	0.05	0	0.00
Shoulder lesions	M75	2	0.05	1	0.05	1	0.06
Neonatology / congenital anomalies		149	4.07	90	4.69	59	3.39
Birth injury to scalp	P12	1	0.03	1	0.05	0	0.00
Cardiovascular disorders originating in the perinatal period	P29	3	0.08	1	0.05	2	0.11
Cleft lip	Q36	1	0.03	1	0.05	0	0.00
Cleft palate with cleft lip	Q37	1	0.03	1	0.05	0	0.00
Congenital malformation of heart, unspecified/Other congenital malformations of heart	Q249	8	0.22	4	0.21	4	0.23
Congenital torticollis	NA	3	0.08	3	0.16	0	0.00
Disord of NB related to slow fetal growth and fetal malnut	P05	4	0.11	1	0.05	3	0.17
excessive crying (isolated)	NA	3	0.08	2	0.10	1	0.06
excessive crying and hypotonia	NA	6	0.16	0	0.00	6	0.34
infantile colic	NA	61	1.67	43	2.24	18	1.03
Microcephaly	Q02	3	0.08	3	0.16	0	0.00
Neonatal jaundice due to other excessive haemolysis	P58	19	0.52	11	0.57	8	0.46
Neonatal jaundice from other and unspecified causes	P59	13	0.35	7	0.36	6	0.34
Newborn affected by oth complications of labor and delivery	P03	1	0.03	0	0.00	1	0.06
Omphalitis of newborn	P38	9	0.25	5	0.26	4	0.23
Oth respiratory conditions origin in the perinatal period	P28	1	0.03	1	0.05	0	0.00
Other disturbances of cerebral status of newborn	P91	4	0.11	2	0.10	2	0.11
Other infections specific to the perinatal period	P39	1	0.03	0	0.00	1	0.06
Other problems with newborn	P84	1	0.03	1	0.05	0	0.00
Respiratory distress of newborn	P22	3	0.08	2	0.10	1	0.06
Umbilical hemorrhage of newborn	P51	2	0.05	1	0.05	1	0.06

Supplementary Table 2: Continued

Nephrology and urology		311	8.49	118	6.14	195	11.20
Calculus of ureter	N201	1	0.03	1	0.05	0	0.00
Calculus of urinary tract in diseases classified elsewhere	N22	1	0.03	1	0.05	0	0.00
Cystitis	N30	34	0.93	17	0.88	17	0.98
Hematuria	R31	2	0.05	1	0.05	1	0.06
Hydrocele	NA	5	0.14	5	0.26	0	0.00
Hypospadias	NA	1	0.03	1	0.05	0	0.00
Kidney calculus	N200	1	0.03	1	0.05	0	0.00
Noninflammatory disorders of testis	N44	3	0.08	3	0.16	0	0.00
Orchitis and epididymitis	N45	1	0.03	0	0.00	1	0.06
Oth and unsp symptoms and signs involving the GU sys	R39	46	1.26	4	0.21	42	2.41
Other disorders of bladder	N32	2	0.05	2	0.10	0	0.00
Other disorders of penis	N48	2	0.05	2	0.10	0	0.00
Pain associated with micturition	R30	4	0.11	2	0.10	2	0.11
Pyelonephritis	N12	12	0.33	9	0.47	3	0.17
Recurrent and persistent hematuria	N02	1	0.03	1	0.05	0	0.00
Retention of urine	R33	1	0.03	0	0.00	1	0.06
Unspecified urinary incontinence	R32	1	0.03	0	0.00	1	0.06
Urethral stricture	N35	1	0.03	1	0.05	0	0.00
Urethritis and urethral syndrome	N34	3	0.08	1	0.05	2	0.11
Urinary tract infection	N390	191	5.22	66	3.44	125	7.18
Nutrition		38	1.04	15	0.78	23	1.32
Abnormalities of gait and mobility	R26	3	0.08	0	0.00	3	0.17
brain atrophy	NA	1	0.03	1	0.05	0	0.00
Febrile Convulsion	R560	10	0.27	3	0.16	7	0.40
Hydrocephalus	NA	1	0.03	1	0.05	0	0.00
Meningitis	G03	1	0.03	1	0.05	0	0.00
Other disorders of brain	G93	1	0.03	0	0.00	1	0.06
Other disorders of brain in diseases classified elsewhere	G94	2	0.05	2	0.10	0	0.00
Oth symptoms and signs involving the nervous and ms systems	NA	3	0.08	2	0.10	1	0.06
Other mononeuropathies	G58	1	0.03	0	0.00	1	0.06
Other paralytic syndromes	G83	1	0.03	0	0.00	1	0.06
Seizure	NA	2	0.05	0	0.00	2	0.11
Somnolence, stupor and coma	R40	8	0.22	3	0.16	5	0.29
Tremor	NA	1	0.03	0	0.00	1	0.06
Specific developmental disorder of motor function	F82	3	0.08	2	0.10	1	0.06
Nutrition and metabolism disorders		742	20.26	377	19.63	365	20.96
Anorexia	R630	22	0.60	12	0.62	10	0.57
Breastfeeding misconceptions	NA	1	0.03	0	0.00	1	0.06
Cow's milk allergy	NA	1	0.03	0	0.00	1	0.06
Deficiency of other nutrient elements	E61	11	0.30	7	0.36	4	0.23
Dietary calcium deficiency	E58	5	0.14	2	0.10	3	0.17
Disorders of glycoprotein metabolism	E77	1	0.03	1	0.05	0	0.00
Failure to thrive	R62.51	50	1.37	24	1.25	26	1.49
Food allergy	NA	2	0.05	0	0.00	2	0.11
Lactose intolerance	E73	5	0.14	2	0.10	3	0.17
Milk protein allergy	NA	1	0.03	1	0.05	0	0.00
Nutritional deficiency	NA	1	0.03	1	0.05	0	0.00
Other nutritional deficiencies	E63	419	11.44	229	11.92	190	10.91
Other vitamin deficiencies	E56	5	0.14	2	0.10	3	0.17
Protein-calorie malnutrition of moderate and mild degree	E44	5	0.14	1	0.05	4	0.23
Retarded development following protein-energy malnutrition	E45	86	2.35	35	1.82	51	2.93
Sequelae of malnutrition and other nutritional deficiencies	E64	17	0.46	9	0.47	8	0.46
Suboptimal breastfeeding	NA	6	0.16	2	0.10	4	0.23
Unspecified protein-calorie malnutrition	E46	9	0.25	2	0.10	7	0.40
Unspecified severe protein-calorie malnutrition	E43	5	0.14	1	0.05	4	0.23
Vitamin D deficiency	E55	90	2.46	46	2.39	44	2.53
Oncology		1	0.03	0	0.00	1	0.06
Hemangioma	NA	1	0.03	0	0.00	1	0.06
Ophthalmology		106	2.89	55	2.86	51	2.93
Conjunctivitis	H10	86	2.35	44	2.29	42	2.41
Stenosis and insufficiency of lacrimal passages	H045	15	0.41	9	0.47	6	0.34
Hypopigmented lesions on eyelids	NA	1	0.03	1	0.05	0	0.00
Other disorders of conjunctiva	H11	1	0.03	1	0.05	0	0.00
Disorders of lacrimal system	H04	3	0.08	0	0.00	3	0.17
Other Diseases		43	1.17	28	1.46	15	0.86
Teething pain	NA3	29	0.79	18	0.94	11	0.63
Delayed teething	NA	1	0.03	1	0.05	0	0.00
Drug allergy	NA	2	0.05	1	0.05	1	0.06
Edema, not elsewhere classified	R60	3	0.08	2	0.10	1	0.06
Enlarged lymph nodes	R59	4	0.11	3	0.16	1	0.06
Malaise and fatigue	R53	4	0.11	3	0.16	1	0.06
Otolaryngology		1139	31.10	632	32.90	507	29.12
Nonsuppurative otitis media	H65	901	24.60	502	26.13	399	22.92
Suppurative and unspecified otitis media	H66	31	0.85	18	0.94	13	0.75
Other disorders of external ear	H61	32	0.87	17	0.88	15	0.86
Otitis externa	H60	13	0.35	8	0.42	5	0.29
Acute tonsillitis	J03	51	1.39	33	1.72	18	1.03
Streptococcal, TONSILLITIS	J030	44	1.20	24	1.25	20	1.15
Acute suppurative otitis media	H660	27	0.74	13	0.68	14	0.80
Eczema of external auditory canal	L303	2	0.05	2	0.10	0	0.00
snuffling or snorting	NA	2	0.05	1	0.05	1	0.06
Deafness	NA	1	0.03	1	0.05	0	0.00
Otitis media, unspecified	H669	10	0.27	4	0.21	6	0.34
External auditory canal abscess	NA	1	0.03	1	0.05	0	0.00
Ear canal obstruction	NA	1	0.03	1	0.05	0	0.00
Stenosis and insufficiency of lacrimal passages	H045	1	0.03	1	0.05	0	0.00
Foreign body in the nose	NA	1	0.03	1	0.05	0	0.00
Nasal discharge	NA	2	0.05	2	0.10	0	0.00
Disorders of external ear in diseases classified elsewhere	H62	6	0.16	1	0.05	5	0.29
Nasal discharge	NA	2	0.05	2	0.10	0	0.00
Impacted cerumen	H612	2	0.05	0	0.00	2	0.11
Other and unspecified hearing loss	H91	1	0.03	0	0.00	1	0.06
Eczema	L303	1	0.03	0	0.00	1	0.06

Supplementary Table 2: Continued

Otitis media in diseases classified elsewhere	H67	2	0.05	0	0.00	2	0.11
Foreign body in the ear	T16	1	0.03	0	0.00	1	0.06
Poisoning		24	0.66	12	0.62	12	0.69
Bacterial foodborne intoxication	A05	3	0.08	1	0.05	2	0.11
Chlore poisoning	NA	1	0.03	0	0.00	1	0.06
Detergent poisoning	NA	1	0.03	0	0.00	1	0.06
Oil poisoning	NA	1	0.03	0	0.00	1	0.06
Oth bacterial foodborne intoxications, NEC	A05	3	0.08	1	0.05	2	0.11
Petroleum poisoning	NA	2	0.05	0	0.00	2	0.11
Sequelae of poisoning by drugs, medicaments and biological substances	T96	2	0.05	1	0.05	1	0.06
Toxic injestion	NA	1	0.03	1	0.05	0	0.00
Venom of other arthropods/ Insect bite	T634	10	0.27	8	0.42	2	0.11
Respiratory diseases		2621	71.57	1514	78.81	1107	63.58
Acute bronchiolitis	J21	668	18.24	389	20.25	279	16.03
Acute bronchitis	J20	125	3.41	62	3.23	63	3.62
Acute laryngitis	J040	10	0.27	7	0.36	3	0.17
Acute laryngitis and tracheitis	J04	13	0.35	7	0.36	6	0.34
Acute obstructive laryngitis [croup] and epiglottitis	J05	2	0.05	2	0.10	0	0.00
Acute pharyngitis	J02	87	2.38	57	2.97	30	1.72
Acute sinusitis	J01	4	0.11	3	0.16	1	0.06
Acute upper resp infections of multiple and unsp sites	J06	43	1.17	25	1.30	18	1.03
Asthma	J45	436	11.91	309	16.09	127	7.29
Bronchiectasis	J47	4	0.11	3	0.16	1	0.06
Bronchitis, not specified as acute or chronic	J40	9	0.25	4	0.21	5	0.29
Chronic diseases of tonsils and adenoids	J35	1	0.03	1	0.05	0	0.00
Chronic laryngitis and laryngotracheitis	J37	4	0.11	4	0.21	0	0.00
Chronic rhinitis, nasopharyngitis and pharyngitis	J31	6	0.16	2	0.10	4	0.23
Chronic sinusitis	J32	3	0.08	2	0.10	1	0.06
Cough	R05	25	0.68	11	0.57	14	0.80
Diseases of vocal cords and larynx, not elsewhere classified	J38	12	0.33	10	0.52	2	0.11
Hypertrophy of tonsils with hypertrophy of adenoids	J353	2	0.05	2	0.10	0	0.00
Influenza due to other identified influenza virus	J10	855	23.35	438	22.80	417	23.95
Laryngeal spasm	J385	17	0.46	10	0.52	7	0.40
NASOPHARYNGITIS, Common cold	J00	129	3.52	70	3.64	59	3.39
Edema of larynx	J384	3	0.08	2	0.10	1	0.06
Other diseases of upper respiratory tract	J39	14	0.38	8	0.42	6	0.34
Pneumonia	J18	17	0.46	12	0.62	5	0.29
Pneumonia due to oth infectious organisms, NEC	J16	1	0.03	1	0.05	0	0.00
Pneumonia in diseases classified elsewhere	J17	1	0.03	1	0.05	0	0.00
Pulmonary edema	J81	11	0.30	10	0.52	1	0.06
Streptococcal pharyngitis	J020	91	2.48	55	2.86	36	2.07
Unspecified chronic bronchitis	J42	9	0.25	3	0.16	6	0.34
Respiratory disorders in diseases classified elsewhere	J99	3	0.08	1	0.05	2	0.11
Acute respiratory distress syndrome	J80	2	0.05	1	0.05	1	0.06
Foreign body inhalation	NA	2	0.05	1	0.05	1	0.06
Emphysema	J43	1	0.03	1	0.05	0	0.00
Laryngomalacia	NA	4	0.11	0	0.00	4	0.23
Bacterial pneumonia, not elsewhere classified	J15	2	0.05	0	0.00	2	0.11
Other respiratory disorders	J98	1	0.03	0	0.00	1	0.06
Other interstitial pulmonary diseases	J84	1	0.03	0	0.00	1	0.06
Allergic rhinitis, unspecified	J304	1	0.03	0	0.00	1	0.06
Abnormalities of breathing	R06	1	0.03	0	0.00	1	0.06
Viral pneumonia, not elsewhere classified	J12	1	0.03	0	0.00	1	0.06
Trauma / Injury		15	0.41	6	0.31	9	0.52
Drowning and nonfatal submersion	T751	1	0.03	0	0.00	1	0.06
Ecchymosis on the chest	NA	1	0.03	1	0.05	0	0.00
Ecchymosis on the foot	NA	1	0.03	0	0.00	1	0.06
Ecchymosis on the genital area	NA	1	0.03	0	0.00	1	0.06
Ecchymosis on the hand	NA	1	0.03	0	0.00	1	0.06
Ecchymosis on the head	NA	4	0.11	2	0.10	2	0.11
Ecchymosis on the nose	NA	1	0.03	0	0.00	1	0.06
Fall down	NA	1	0.03	1	0.05	0	0.00
Fall from, out of or through building or structure	W13	1	0.03	0	0.00	1	0.06
Head ecchymosis	NA	1	0.03	0	0.00	1	0.06
Other fall from one level to another	W17	1	0.03	1	0.05	0	0.00
Unspecified fall	W19	1	0.03	1	0.05	0	0.00
Toddlers (above 1 to 4 years)			Total number of patients	2383	Total number of diagnoses	5443	
			Total	Male (1267 patients)	Female (1116 patients)		
Diagnosis	ICD-10 code	Frequency	Percentage among age group	Frequency	Percentage among age group	Frequency	Percentage among age group
Cardiology		9	0.38	6	0.47	3	0.27
Cardiac murmurs and other cardiac sounds	R01	7	0.29	5	0.39	2	0.18
Heart Failure	I50	1	0.04	1	0.08	0	0.00
Other cardiac arrhythmias	I49	1	0.04	0	0.00	1	0.09
Dermatology		163	6.84	84	6.63	79	7.08
Allergic contact dermatitis	L23	29	1.22	17	1.34	12	1.08
Alopecia areata	L63	1	0.04	0	0.00	1	0.09
Atopic dermatitis	L20	1	0.04	1	0.08	0	0.00
Cellulitis	L03	4	0.17	1	0.08	3	0.27
Cutaneous abscess, furuncle and carbuncle, unspecified	L029	7	0.29	4	0.32	3	0.27
Diaper [napkin] dermatitis	L22	40	1.68	14	1.10	26	2.33
Dryness	NA	1	0.04	0	0.00	1	0.09
Eczema	L303	2	0.08	2	0.16	0	0.00
Erythema multiforme	L51	1	0.04	1	0.08	0	0.00
Impetigo	L01	18	0.76	12	0.95	6	0.54
Infective dermatitis/Eczematoid dermatitis	L303	11	0.46	4	0.32	7	0.63
Leishmaniasis	B55	3	0.13	1	0.08	2	0.18
Skin wort	NA	1	0.04	1	0.08	0	0.00
Other and unspecified dermatitis	L30	2	0.08	1	0.08	1	0.09
Other disorders of skin and subcutaneous tissue	L98	3	0.13	2	0.16	1	0.09
Pilonidal cyst and sinus	I05	1	0.04	0	0.00	1	0.09
Pityriasis rosea	L42	4	0.17	2	0.16	2	0.18
Pruritus	L29	2	0.08	2	0.16	0	0.00
Rash and other nonspecific skin eruption	R21	16	0.67	10	0.79	6	0.54

Supplementary Table 2: Continued

Scalp infection	NA	1	0.04	1	0.08	0	0.00
Tinea	NA	1	0.04	1	0.08	0	0.00
Tinea barbae and tinea capitis	B350	1	0.04	0	0.00	1	0.09
Tinea capitis	NA	1	0.04	1	0.08	0	0.00
Urticaria	L50	11	0.46	6	0.47	5	0.45
Vitiligo	L80	1	0.04	0	0.00	1	0.09
Endocrinology		18	0.76	7	0.55	11	0.99
Growth hormone deficiency	NA	1	0.04	0	0.00	1	0.09
Hypoglycemia	NA	1	0.04	1	0.08	0	0.00
Other disorders of thyroid	E07	1	0.04	0	0.00	1	0.09
Short stature	R62.52	14	0.59	6	0.47	8	0.72
Gastroenterology		354	14.86	177	13.97	177	15.86
Abdominal and pelvic pain	R10	19	0.80	4	0.32	15	1.34
Abdominal Colic/Other and unspecified abdominal pain	R104	25	1.05	10	0.79	15	1.34
Abscess of anal and rectal regions	K61	1	0.04	1	0.08	0	0.00
Anal fissure, unspecified	K602	2	0.08	2	0.16	0	0.00
Cellulitis and abscess of mouth	K122	20	0.84	15	1.18	5	0.45
Coeliac disease	K900	26	1.09	12	0.95	14	1.25
Constipation	K590	14	0.59	4	0.32	10	0.90
Diseases of salivary glands	K11	1	0.04	0	0.00	1	0.09
Disord of GB, biliary trac and pancreas in dis classd elswr	K87	1	0.04	0	0.00	1	0.09
Dyspepsia	R101	10	0.42	5	0.39	5	0.45
Fissure and fistula of anal and rectal regions	K60	3	0.13	0	0.00	3	0.27
Foreign body injection	NA	2	0.08	0	0.00	2	0.18
Functional dyspepsia	K30	2	0.08	1	0.08	1	0.09
GI bleeding	NA	1	0.04	1	0.08	0	0.00
Inguinal hernia	K40	7	0.29	6	0.47	1	0.09
Intestinal malabsorption	K90	14	0.59	6	0.47	8	0.72
Nausea and vomiting	R11	37	1.55	15	1.18	22	1.97
Oth symptoms and signs involving the dgstv sys and abdomen	R19	7	0.29	2	0.16	5	0.45
Other and unsp noninfective gastroenteritis and colitis	K52	40	1.68	21	1.66	19	1.70
Other diseases of anus and rectum	K62	7	0.29	4	0.32	3	0.27
Other diseases of digestive system	K92	1	0.04	1	0.08	0	0.00
Other diseases of lip and oral mucosa	K13	8	0.34	3	0.24	5	0.45
Other diseases of liver	K76	2	0.08	1	0.08	1	0.09
Other diseases of stomach and duodenum	K31	1	0.04	0	0.00	1	0.09
Other functional intestinal disorders	K59	2	0.08	0	0.00	2	0.18
Periapical abscess without sinus	K047	1	0.04	1	0.08	0	0.00
Recurrent oral aphthae	K120	55	2.31	31	2.45	24	2.15
Stomatitis and related lesions	K12	40	1.68	29	2.29	11	0.99
Symp and signs specifically assoc w sys inflam and infct	R65	1	0.04	1	0.08	0	0.00
Ulcerative colitis	K51	1	0.04	0	0.00	1	0.09
Umbilical hernia	K42	1	0.04	0	0.00	1	0.09
Unspecified jaundice	R17	2	0.08	1	0.08	1	0.09
Hematology & Immunology		104	4.36	65	5.13	39	3.49
Anemia, unspecified	D649	38	1.59	23	1.82	15	1.34
Other nutritional anemias	D53	33	1.38	21	1.66	12	1.08
Folate deficiency anemia	D52	24	1.01	13	1.03	11	0.99
Acquired hemolytic anemia	D59	1	0.04	1	0.08	0	0.00
Primary thrombocytopenia	NA	1	0.04	1	0.08	0	0.00
Hemorrhagic condition, unspecified	D699	2	0.08	2	0.16	0	0.00
Thalassemia	D56	2	0.08	2	0.16	0	0.00
Purpura and other haemorrhagic conditions	D69	2	0.08	2	0.16	0	0.00
Other immunodeficiencies	D84	1	0.04	0	0.00	1	0.09
Infectious disease		929	38.98	507	40.02	422	37.81
Dehydration fever	NA9	16	0.67	6	0.47	10	0.90
Abscesses	NA	1	0.04	0	0.00	1	0.09
Acute bloody Diarrhea	A090	1	0.04	1	0.08	0	0.00
Acute hepatitis A	B15	24	1.01	13	1.03	11	0.99
Acute lymphadenitis	L04	1	0.04	1	0.08	0	0.00
Brucellosis	A23	1	0.04	0	0.00	1	0.09
Cholera/ AWD/ Suspected Cholera	A00	89	3.73	47	3.71	42	3.76
Dehydration fever	NA9	16	0.67	6	0.47	10	0.90
Diarrhea and gastroenteritis of presumed infectious origin	A09	62	2.60	40	3.16	22	1.97
Fever of other and unknown origin	R50	107	4.49	47	3.71	60	5.38
Gastroenteritis and colitis of unspecified origin	A099	63	2.64	27	2.13	36	3.23
Hand, foot and mouth disease	B08.4	11	0.46	4	0.32	7	0.63
Helminthiasis/Other helminthiases	B83	10	0.42	4	0.32	6	0.54
Measles	B05	1	0.04	1	0.08	0	0.00
Mumps	B26	6	0.25	4	0.32	2	0.18
Osteomyelitis	M86	2	0.08	0	0.00	2	0.18
Other bacterial intestinal infections	A04	1	0.04	0	0.00	1	0.09
Other intestinal helminthiases, not elsewhere classified	B81	14	0.59	7	0.55	7	0.63
Other protozoal intestinal diseases	A07	1	0.04	1	0.08	0	0.00
Rubella [German measles]	B06	5	0.21	1	0.08	4	0.36
Scabies	B86	5	0.21	2	0.16	3	0.27
septicaemia/Sepsis	A41	2	0.08	0	0.00	2	0.18
Streptococcal sepsis	A40	1	0.04	1	0.08	0	0.00
Tinea cruris	B356	1	0.04	0	0.00	1	0.09
Typhoid and paratyphoid fevers	A01	7	0.29	6	0.47	1	0.09
Unspecified intestinal parasitism	B82	10	0.42	6	0.47	4	0.36
Varicella chickenpox	B01	11	0.46	9	0.71	2	0.18
Viral intestinal infection, unspecified	A084	459	19.26	273	21.55	186	16.67
Whooping cough	A37	1	0.04	0	0.00	1	0.09
Musculoskeletal disorders		24	1.01	14	1.10	10	0.90
Acquired deformities of fingers and toes	M20	2	0.08	2	0.16	0	0.00
Developmental delay	NA	1	0.04	0	0.00	1	0.09
Dorsalgia	M54	1	0.04	0	0.00	1	0.09
Enthesopathies, lower limb, excluding foot	M76	1	0.04	0	0.00	1	0.09
Hip dislocation	NA	1	0.04	0	0.00	1	0.09
Juvenile osteochondrosis of hip and pelvis	M91	1	0.04	1	0.08	0	0.00
Other acquired deformities of limbs	M21	3	0.13	3	0.24	0	0.00
Other and unspecified arthropathy	M12	4	0.17	3	0.24	1	0.09
Other arthritis	M13	1	0.04	1	0.08	0	0.00

Supplementary Table 2: Continued

Other joint disorder, not elsewhere classified	M25	1	0.04	0	0.00	1	0.09
Other rheumatoid arthritis	M06	3	0.13	0	0.00	3	0.27
Seropositive rheumatoid arthritis	M05	5	0.21	4	0.32	1	0.09
Neonatology / congenital anomalies		2	0.08	0	0.00	2	0.18
Other congenital malformations of brain	Q04	2	0.08	0	0.00	2	0.18
Other disturbances of cerebral status of newborn	P91	2	0.08	0	0.00	2	0.18
Nephrology and urology		279	11.71	70	5.52	209	18.73
Calculus of urinary tract in diseases classified elsewhere	N22	2	0.08	1	0.08	1	0.09
Cystitis	N30	39	1.64	10	0.79	29	2.60
Hematuria	R31	2	0.08	1	0.08	1	0.09
hydrocele	NA	2	0.08	2	0.16	0	0.00
Kidney calculus	N200	1	0.04	0	0.00	1	0.09
Noninflammatory disorders of testis	N44	2	0.08	2	0.16	0	0.00
Oth and unsp symptoms and signs involving the GU sys	R39	56	2.35	5	0.39	51	4.57
Pain associated with micturition	R30	4	0.17	2	0.16	2	0.18
Polyuria	R35	2	0.08	2	0.16	0	0.00
Pyelonephritis	N12	5	0.21	1	0.08	4	0.36
Retention of urine	R33	1	0.04	1	0.08	0	0.00
Stress incontinence	N393	1	0.04	1	0.08	0	0.00
Undescended testicle	NA	1	0.04	1	0.08	0	0.00
Unspecified urinary incontinence	R32	3	0.13	2	0.16	1	0.09
Urinary tract infection	N390	158	6.63	39	3.08	119	10.66
Neurology		63	2.64	32	2.53	31	2.78
Abnormalities of gait and mobility	R26	9	0.38	5	0.39	4	0.36
Delayed speech	NA	5	0.21	4	0.32	1	0.09
Epilepsy	G40	8	0.34	4	0.32	4	0.36
Febrile Convulsion	R560	3	0.13	1	0.08	2	0.18
Headache	R51	2	0.08	0	0.00	2	0.18
Hemiplegia and hemiparesis	G81	1	0.04	0	0.00	1	0.09
Hydrocephalus	G91	4	0.17	1	0.08	3	0.27
Infantile cerebral palsy	G80	6	0.25	4	0.32	2	0.18
Other disorders of brain	G93	6	0.25	3	0.24	3	0.27
Other disorders of brain in diseases classified elsewhere	G94	7	0.29	2	0.16	5	0.45
Other disorders of peripheral nervous system	G64	1	0.04	0	0.00	1	0.09
Somnolence, stupor and coma	R40	4	0.17	3	0.24	1	0.09
Specific developmental disorder of motor function	F82	4	0.17	2	0.16	2	0.18
Specific developmental disorders of speech and language	F80	1	0.04	1	0.08	0	0.00
Oth symptoms and signs involving the nervous and ms systems	R29	2	0.08	2	0.16	0	0.00
Nutrition and metabolism disorders		205	8.60	88	6.95	117	10.48
Anorexia	R630	36	1.51	15	1.18	21	1.88
Deficiency of other nutrient elements	E61	1	0.04	0	0.00	1	0.09
Dietary calcium deficiency	E58	8	0.34	2	0.16	6	0.54
Disorders of glycoprotein metabolism	E77	1	0.04	1	0.08	0	0.00
Failure to thrive	R62.51	17	0.71	9	0.71	8	0.72
Other nutritional deficiencies	E63	48	2.01	23	1.82	25	2.24
Protein-calorie malnutrition of moderate and mild degree	E44	1	0.04	0	0.00	1	0.09
Retarded development following protein-energy malnutrition	E45	34	1.43	12	0.95	22	1.97
Rickets	NA	1	0.04	1	0.08	0	0.00
Sequelae of malnutrition and other nutritional deficiencies	E64	6	0.25	3	0.24	3	0.27
Unspecified protein-calorie malnutrition	E46	5	0.21	4	0.32	1	0.09
Vitamin D deficiency	E55	47	1.97	18	1.42	29	2.60
Ophthalmology		58	2.43	36	2.84	23	2.06
Conjunctivitis	H10	49	2.06	34	2.68	15	1.34
Other disorders of conjunctiva	H11	3	0.13	1	0.08	2	0.18
Other inflammation of eyelid	H01	1	0.04	0	0.00	1	0.09
Retained (old) intraocular foreign body, magnetic	H446	1	0.04	0	0.00	1	0.09
Stenosis and insufficiency of lacrimal passages	H045	2	0.08	1	0.08	1	0.09
Stye	NA	3	0.13	0	0.00	3	0.27
Other Diseases		39	1.64	29	2.29	10	0.90
Drug allergy	NA	4	0.17	4	0.32	0	0.00
Edema, not elsewhere classified	R60	2	0.08	0	0.00	2	0.18
Enlarged lymph nodes	R59	11	0.46	9	0.71	2	0.18
Malaise and fatigue	R53	3	0.13	2	0.16	1	0.09
Oth noninfective disorders of lymphatic vessels and nodes	I89	1	0.04	0	0.00	1	0.09
Pain, unspecified	R52	3	0.13	3	0.24	0	0.00
Teething pain	NA3	12	0.50	9	0.71	3	0.27
Upper incisors stains	NA	1	0.04	1	0.08	0	0.00
Otolaryngology		1036	43.47	578	45.62	458	41.04
Nonsuppurative otitis media	H65	643	26.98	370	29.20	273	24.46
Streptococcal, TONSILLITIS	J030	113	4.74	57	4.50	56	5.02
Acute tonsillitis	J03	177	7.43	107	8.45	70	6.27
Suppurative and unspecified otitis media	H66	25	1.05	12	0.95	13	1.16
Other disorders of external ear	H61	13	0.55	6	0.47	7	0.63
Otitis media, unspecified/otitis fungi	H669	3	0.13	2	0.16	1	0.09
Disorders of external ear in diseases classified elsewhere	H62	9	0.38	5	0.39	4	0.36
Acute suppurative otitis media	H660	16	0.67	9	0.71	7	0.63
Foreign body in the nose	NA	5	0.21	4	0.32	1	0.09
Otitis media, unspecified	H669	3	0.13	2	0.16	1	0.09
snuffing or snorting	NA	1	0.04	1	0.08	0	0.00
Impacted cerumen	H612	2	0.08	1	0.08	1	0.09
Allergic rhinitis	J304	1	0.04	1	0.08	0	0.00
Fungal otitis media	NA	1	0.04	1	0.08	0	0.00
Otitis externa	H60	7	0.29	0	0.00	7	0.63
Eustachian salpingitis and obstruction	H68	1	0.04	0	0.00	1	0.09
Foregin body in the nose	NA	1	0.04	0	0.00	1	0.09
Foregin body in the ear	T16	3	0.13	0	0.00	3	0.27
Oth disord of mid ear and mastoid in diseases clasd elswrh	H75	1	0.04	0	0.00	1	0.09
Foregin body in nose	NA	1	0.04	0	0.00	1	0.09
otic pain	NA	1	0.04	0	0.00	1	0.09
Otitis media in diseases classified elsewhere	H67	5	0.21	0	0.00	5	0.45
Nasal discharge	NA	1	0.04	0	0.00	1	0.09
Eczema	L303	1	0.04	0	0.00	1	0.09
Otitis externa	NA	1	0.04	0	0.00	1	0.09
Nasal discharge	NA	1	0.04	0	0.00	1	0.09

Supplementary Table 2: Continued

Poisoning		27	1.13	18	1.42	9	0.81
Bacterial foodborne intoxication	A05	3	0.13	2	0.16	1	0.09
Burns classified accord extent body involv	T31	1	0.04	1	0.08	0	0.00
Detergent poisoning	NA	2	0.08	2	0.16	0	0.00
Drug poisoning	NA	2	0.08	0	0.00	0	0.00
Food poisoning	NA	1	0.04	1	0.08	0	0.00
Petroleum poisoning	NA	2	0.08	2	0.16	0	0.00
Organophosphate poisoning	NA	1	0.04	0	0.00	1	0.09
Oth bacterial foodborne intoxications, NEC	A05	3	0.13	2	0.16	1	0.09
Sequelae of poisoning by drugs, medicaments and biological substances	T96	2	0.08	2	0.16	0	0.00
Venom of other arthropods/ Insect bite	T634	8	0.34	3	0.24	5	0.45
Venom of scorpion/ Scorpion bite	T632	2	0.08	1	0.08	1	0.09
Respiratory diseases		1778	74.61	1003	79.16	775	69.44
Acute bronchiolitis	J21	311	13.05	198	15.63	113	10.13
Acute bronchitis	J20	45	1.89	26	2.05	19	1.70
Acute laryngitis	J040	20	0.84	14	1.10	6	0.54
Acute laryngitis and tracheitis	J04	12	0.50	4	0.32	8	0.72
Acute obstructive laryngitis [croup] and epiglottitis	J05	4	0.17	3	0.24	1	0.09
Acute pharyngitis	J02	102	4.28	52	4.10	50	4.48
Acute sinusitis	J01	22	0.92	16	1.26	6	0.54
Acute upper resp infections of multiple and unsp sites	J06	28	1.17	18	1.42	10	0.90
Allergic rhinitis, unspecified	J304	1	0.04	1	0.08	0	0.00
Asthma	J45	380	15.95	238	18.78	142	12.72
Bronchitis, not specified as acute or chronic	J40	7	0.29	3	0.24	4	0.36
Chronic diseases of tonsils and adenoids	J35	2	0.08	1	0.08	1	0.09
Chronic laryngitis and laryngotracheitis	J37	4	0.17	0	0.00	4	0.36
Chronic rhinitis, nasopharyngitis and pharyngitis	J31	6	0.25	5	0.39	1	0.09
Chronic sinusitis	J32	27	1.13	18	1.42	9	0.81
Cough	R07	36	1.51	19	1.50	17	1.52
Diseases of vocal cords and larynx, not elsewhere classified	J38	3	0.13	1	0.08	2	0.18
Foreign body inhalation	NA	2	0.08	1	0.08	1	0.09
Hemorrhage from respiratory passages	R04	1	0.04	1	0.08	0	0.00
Hypertrophy of tonsils with hypertrophy of adenoids	J353	19	0.80	9	0.71	10	0.90
Influenza due to certain identified influenza viruses	J09	514	21.57	254	20.05	260	23.30
Influenza due to other identified influenza virus	J10	45	1.89	31	2.45	14	1.25
Laryngeal spasm	J385	2	0.08	0	0.00	2	0.18
NASOPHARYNGITIS, Common cold	J00	57	2.39	30	2.37	27	2.42
Oedema of larynx	J384	1	0.04	1	0.08	0	0.00
Other diseases of upper respiratory tract	J39	6	0.25	3	0.24	3	0.27
Other respiratory disorders	J98	1	0.04	0	0.00	1	0.09
Pneumonia	J18	12	0.50	7	0.55	5	0.45
Pulmonary edema	J81	11	0.46	4	0.32	7	0.63
Resp cond d/t inhalation of chemicals, gas, fumes and vapors	J68	1	0.04	0	0.00	1	0.09
Respiratory disorders in diseases classified elsewhere	J99	3	0.13	2	0.16	1	0.09
Streptococcal pharyngitis	J020	88	3.69	41	3.24	47	4.21
Unspecified chronic bronchitis	J42	5	0.21	2	0.16	3	0.27
Trauma / Injury		12	0.50	5	0.39	7	0.63
Burn of first degree, body region unspecified	T301	1	0.04	1	0.08	0	0.00
Ecchymosis, site unspecified	NA	1	0.04	1	0.08	0	0.00
Ecchymosis on the face	NA	2	0.08	0	0.00	2	0.18
Ecchymosis on the foot	NA	2	0.08	1	0.08	1	0.09
Ecchymosis on the nose	NA	1	0.04	0	0.00	1	0.09
Hand ecchymosis	NA	1	0.04	1	0.08	0	0.00
Head ecchymosis	NA	1	0.04	0	0.00	1	0.09
Open wound of ankle and foot	S910	1	0.04	1	0.08	0	0.00
Other and unspecified injuries of ankle and foot	S99	1	0.04	0	0.00	1	0.09
Traf of spcf type but victim's mode of transport unknown	V87	1	0.04	0	0.00	1	0.09
Childhood (5 to 9 years)			Total number of patients	2103	Total number of diagnoses	3293	
			Total	Male (1142 patients)	Female (961 patients)		
Diagnosis	ICD-10 code	Frequency	Percentage among age group	Frequency	Percentage among age group	Frequency	Percentage among age group
Cardiology		6	0.29	5	0.44	1	0.10
Cardiac murmurs and other cardiac sounds	R01	3	0.14	3	0.26	0	0.00
Rheumatic chorea with heart involvement	I020	3	0.14	2	0.18	1	0.10
Dermatology		85	4.04	39	3.42	46	4.79
Allergic contact dermatitis	L23	13	0.62	7	0.61	6	0.62
Atopic dermatitis	L20	1	0.05	1	0.09	0	0.00
Cellulitis	L03	2	0.10	1	0.09	1	0.10
Cutaneous abscess, furuncle and carbuncle, unspecified	L029	4	0.19	1	0.09	3	0.31
Diaper [napkin] dermatitis	L22	1	0.05	0	0.00	1	0.10
Eczema	L303	4	0.19	2	0.18	2	0.21
Exfoliative dermatitis	L26	1	0.05	1	0.09	0	0.00
Griscelli syndrome	NA	1	0.05	0	0.00	1	0.10
Hairsutism	NA	2	0.10	0	0.00	2	0.21
Hypopigmentation	NA	2	0.10	0	0.00	2	0.21
Impetigo	L01	7	0.33	3	0.26	4	0.42
Infective dermatitis/Eczematoid dermatitis	L303	7	0.33	3	0.26	4	0.42
Leishmaniasis	B56	4	0.19	0	0.00	4	0.42
Localized swelling, mass and lump of skin, subcu	R22	1	0.05	1	0.09	0	0.00
Nail disorders	L60	2	0.10	1	0.09	1	0.10
Nail disorders in diseases classified elsewhere	L62	1	0.05	0	0.00	1	0.10
Other and unspecified dermatitis	L30	2	0.10	0	0.00	2	0.21
Other disorders of skin and subcutaneous tissue	L98	5	0.24	2	0.18	3	0.31
Other erythematous conditions	L53	1	0.05	1	0.09	0	0.00
Pityriasis rosea	L42	5	0.24	3	0.26	2	0.21
Pruritus	L29	1	0.05	0	0.00	1	0.10
Rash and other nonspecific skin eruption	R21	8	0.38	7	0.61	1	0.10
skin wart	NA	1	0.05	1	0.09	0	0.00
Urticaria	L50	9	0.43	4	0.35	5	0.52
Endocrinology		59	2.81	27	2.36	32	3.33
Amyloidosis	E85	1	0.05	1	0.09	0	0.00
Delay puberty	E30	1	0.05	0	0.00	1	0.10
Growth hormone deficiency	NA	3	0.14	1	0.09	2	0.21
Other disorders of thyroid	E07	3	0.14	0	0.00	3	0.31

Supplementary Table 2: Continued

Other metabolic disorders/ Other Endocrine nutritional and metabolic diseases	E88	1	0.05	0	0.00	1	0.10
Other specified diabetes mellitus	E13	1	0.05	0	0.00	1	0.10
Short stature	R62.52	49	2.33	25	2.19	24	2.50
Gastroenterology		211	10.03	109	9.54	102	10.61
Abdominal and pelvic pain	R10	39	1.85	16	1.40	23	2.39
Abdominal Colic/Other and unspecified abdominal pain	R104	17	0.81	10	0.88	7	0.73
Anal fissure, unspecified	K602	1	0.05	0	0.00	1	0.10
Cellulitis and abscess of mouth	K122	10	0.48	6	0.53	4	0.42
Coeliac disease	K900	7	0.33	3	0.26	4	0.42
Constipation	K590	6	0.29	3	0.26	3	0.31
Diaphragmatic hernia	K44	1	0.05	1	0.09	0	0.00
Dyspepsia	R101	6	0.29	4	0.35	2	0.21
Fecal incontinence	R15	2	0.10	2	0.18	0	0.00
Fissure and fistula of anal and rectal regions	K60	1	0.05	1	0.09	0	0.00
Foreign body injection	NA	3	0.14	1	0.09	2	0.21
Gastritis and duodenitis	K29	5	0.24	1	0.09	4	0.42
Gastro oesophageal reflux disease	K219	4	0.19	4	0.35	0	0.00
Genital prolapse	NA	1	0.05	1	0.09	0	0.00
Hemorrhoids and perianal venous thrombosis	K64	1	0.05	0	0.00	1	0.10
Inguinal hernia	K40	6	0.29	4	0.35	2	0.21
Intestinal malabsorption	K90	5	0.24	2	0.18	3	0.31
Irritable bowel syndrome	K58	3	0.14	0	0.00	3	0.31
Nausea and vomiting	R11	28	1.33	20	1.75	8	0.83
Oth symptoms and signs involving the dgstv sys and abdomen	R19	21	1.00	13	1.14	8	0.83
Other and unsp noninfective gastroenteritis and colitis	K52	13	0.62	5	0.44	8	0.83
Other diseases of anus and rectum	K62	2	0.10	1	0.09	1	0.10
Other diseases of appendix	K38	1	0.05	0	0.00	1	0.10
Periapical abscess without sinus	K047	2	0.10	2	0.18	0	0.00
Recurrent oral aphthae	K120	10	0.48	2	0.18	8	0.83
Stomatitis and related lesions	K12	13	0.62	7	0.61	4	0.42
Umbilical hernia	K42	1	0.05	0	0.00	1	0.10
Unspecified jaundice	R17	4	0.19	0	0.00	4	0.42
Hematology & Immunology		54	2.57	31	2.71	23	2.39
Acquired hemolytic anemia	D59	2	0.10	1	0.09	1	0.10
Anemia, unspecified	D649	16	0.76	6	0.53	10	1.04
Familial Mediterranean fever (Non-neuropathic hereditary amyloidosis)	E850	3	0.14	2	0.18	1	0.10
Favism - G6PD Deficiency	D55.0	1	0.05	1	0.09	0	0.00
Folate deficiency anemia	D52	8	0.38	5	0.44	3	0.31
Other and unsp diseases of blood and blood-forming organs	D75	1	0.05	0	0.00	1	0.10
Other nutritional anemias	D53	20	0.95	14	1.23	6	0.62
Thalassemia	D56	2	0.10	2	0.18	0	0.00
Unspecified jaundice	R17	1	0.05	0	0.00	1	0.10
Infectious disease		369	17.55	190	16.64	179	18.63
Acute hepatitis A	B15	27	1.28	18	1.58	9	0.94
Brucellosis	A23	4	0.19	3	0.26	1	0.10
Cholera/ AWD/ Suspected Cholera	A00	11	0.52	7	0.61	4	0.42
Diarrhea and gastroenteritis of presumed infectious origin	A09	16	0.76	10	0.88	6	0.62
Fever of other and unknown origin	R50	70	3.33	27	2.36	43	4.47
Gastroenteritis and colitis of unspecified origin	A099	20	0.95	13	1.14	7	0.73
Hand, foot and mouth disease	B08.4	1	0.05	1	0.09	0	0.00
Helminthiasis/Other helminthiasis	B83	17	0.81	5	0.44	12	1.25
Mumps	B26	1	0.05	0	0.00	1	0.10
Osteomyelitis	M86	1	0.05	0	0.00	1	0.10
Other bacterial intestinal infections	A04	1	0.05	0	0.00	1	0.10
Other intestinal helminthiasis, not elsewhere classified	B81	25	1.19	11	0.96	14	1.46
Other protozoal intestinal diseases	A07	2	0.10	2	0.18	0	0.00
Other viral hemorrhagic fevers, not elsewhere classified	A98	4	0.19	3	0.26	1	0.10
Rubella [German measles]	B06	2	0.10	1	0.09	1	0.10
Scabies	B86	7	0.33	5	0.44	2	0.21
Scalpe infection	NA	1	0.05	0	0.00	1	0.10
Scarlet fever	NA	1	0.05	0	0.00	1	0.10
septicaemia/Sepsis	A41	2	0.10	2	0.18	0	0.00
Sequelae of tuberculosis	B90	1	0.05	0	0.00	1	0.10
Typhoid and paratyphoid fevers	A01	3	0.14	2	0.18	1	0.10
Unspecified intestinal parasitism	B82	11	0.52	3	0.26	8	0.83
Unspecified viral hepatitis	B19	1	0.05	0	0.00	1	0.10
Varicella chickenpox	B01	15	0.71	9	0.79	6	0.62
Viral and other specified intestinal infections	A08	102	4.85	56	4.90	46	4.79
Viral intestinal infection, unspecified	A084	20	0.95	12	1.05	8	0.83
Viral meningitis	A87	1	0.05	0	0.00	1	0.10
Whooping cough	A37	2	0.10	0	0.00	2	0.21
Musculoskeletal disorders		39	1.85	27	2.36	12	1.25
Acquired deformities of fingers and toes	M20	1	0.05	1	0.09	0	0.00
Arthropathies in other diseases classified elsewhere	M14	2	0.10	0	0.00	2	0.21
Biomechanical lesions	M99	1	0.05	1	0.09	0	0.00
Bone pain	NA	1	0.05	1	0.09	0	0.00
Bony pain in lower extremities	NA	1	0.05	1	0.09	0	0.00
Chronic bone pain	NA	1	0.05	1	0.09	0	0.00
Dorsalgia	M54	1	0.05	1	0.09	0	0.00
Growing pains	NA	2	0.10	2	0.18	0	0.00
Juvenile arthritis	M08	1	0.05	1	0.09	0	0.00
Muscle spasm and pain	NA	2	0.10	1	0.09	1	0.10
Osteopathies in diseases classified elsewhere	M90	2	0.10	2	0.18	0	0.00
Other and unspecified arthropathy	M12	8	0.38	3	0.26	5	0.52
Other arthritis	M13	3	0.14	2	0.18	1	0.10
Other disorders of bone	M89	1	0.05	1	0.09	0	0.00
Other disorders of muscle	M62	1	0.05	1	0.09	0	0.00
Other joint disorder, not elsewhere classified	M25	1	0.05	1	0.09	0	0.00
Other rheumatoid arthritis	M06	2	0.10	2	0.18	0	0.00
Other spondylopathies	M48	1	0.05	1	0.09	0	0.00
Seropositive rheumatoid arthritis	M05	7	0.33	4	0.35	3	0.31
Neonatology / congenital anomalies		4	0.19	2	0.18	2	0.21
Cleft palate	Q35	1	0.05	1	0.09	0	0.00
Congenital malformation of heart, unspecified/Other congenital malformations of heart	Q249	1	0.05	1	0.09	0	0.00

Supplementary Table 2: Continued

Developmental dysplasia of the hip	NA	1	0.05	0	0.00	1	0.10
Down syndrome	Q90	1	0.05	0	0.00	1	0.10
Nephrology and urology		342	16.26	83	7.27	259	26.95
Calculus of ureter	N201	1	0.05	0	0.00	1	0.10
Calculus of urinary tract in diseases classified elsewhere	N22	1	0.05	1	0.09	0	0.00
Cystitis	N30	60	2.85	12	1.05	48	4.99
Hematuria	R31	3	0.14	2	0.18	1	0.10
Obstructive and reflux uropathy	N13	1	0.05	0	0.00	1	0.10
Oth and unsp symptoms and signs involving the GU sys	R39	42	2.00	6	0.53	36	3.75
Other disorders of penis	N48	1	0.05	1	0.09	0	0.00
Other disorders of urethra	N36	1	0.05	1	0.09	0	0.00
Other disorders of urinary system	N39	1	0.05	1	0.09	0	0.00
Pain associated with micturition	R30	6	0.29	2	0.18	4	0.42
Polyuria	R35	12	0.57	6	0.53	6	0.62
Pyelonephritis	N12	12	0.57	0	0.00	12	1.25
Recurrent and persistent hematuria	N02	2	0.10	0	0.00	2	0.21
renal calices congestion	NA	1	0.05	0	0.00	1	0.10
Retention of urine	R33	1	0.05	1	0.09	0	0.00
Stress incontinence	N393	1	0.05	0	0.00	1	0.10
Unspecified kidney failure	N19	2	0.10	2	0.18	0	0.00
Unspecified renal colic	N23	1	0.05	1	0.09	0	0.00
Unspecified urinary incontinence	R32	57	2.71	19	1.66	38	3.95
Urethral disorders in diseases classified elsewhere	N37	1	0.05	1	0.09	0	0.00
Urethritis and urethral syndrome	N34	9	0.43	1	0.09	8	0.83
Urinary tract infection	N390	126	5.99	26	2.28	100	10.41
Neurology		55	2.62	23	2.01	32	3.33
Abnormalities of gait and mobility	R26	1	0.05	0	0.00	1	0.10
BELLS PALSY	G510	1	0.05	0	0.00	1	0.10
Convulsions, not elsewhere classified	R56	1	0.05	0	0.00	1	0.10
Delayed speech	NA	1	0.05	1	0.09	0	0.00
Depaquine tapering	NA	3	0.14	0	0.00	3	0.31
Dizziness and giddiness	R42	1	0.05	1	0.09	0	0.00
Epilepsy	G40	6	0.29	1	0.09	5	0.52
Febrile Convulsion	R560	3	0.14	2	0.18	1	0.10
Headache	R51	18	0.86	9	0.79	9	0.94
Hydrocephalus	G91	3	0.14	3	0.26	0	0.00
Infantile cerebral palsy	G80	2	0.10	2	0.18	0	0.00
Other disorders of brain	G93	4	0.19	1	0.09	3	0.31
Other disorders of brain in diseases classified elsewhere	G94	3	0.14	2	0.18	1	0.10
Other headache syndromes	G44	1	0.05	0	0.00	1	0.10
Seizure	NA	3	0.14	0	0.00	3	0.31
Somnolence, stupor and coma	R40	2	0.10	1	0.09	1	0.10
Specific developmental disorders of speech and language	F80	1	0.05	0	0.00	1	0.10
Transient cerebral ischemic attacks and related syndromes	G45	1	0.05	0	0.00	1	0.10
Nutrition and metabolism disorders		89	4.23	40	3.50	49	5.10
Anorexia	R630	59	2.81	28	2.45	31	3.23
Other nutritional deficiencies	E63	5	0.24	4	0.35	1	0.10
Retarded development following protein-energy malnutrition	E45	2	0.10	1	0.09	1	0.10
Failure to thrive	R62.51	3	0.14	1	0.09	2	0.21
Lactose intolerance	E73	1	0.05	1	0.09	0	0.00
Unspecified protein-calorie malnutrition	E46	4	0.19	3	0.26	1	0.10
Vitamin D deficiency	E55	3	0.14	1	0.09	2	0.21
Other vitamin deficiencies	E56	1	0.05	1	0.09	0	0.00
Sequelae of malnutrition and other nutritional deficiencies	E64	2	0.10	0	0.00	2	0.21
Dietary calcium deficiency	E58	5	0.24	0	0.00	5	0.52
Deficiency of other nutrient elements	E61	3	0.14	0	0.00	3	0.31
Food allergy	NA	1	0.05	0	0.00	1	0.10
Oncology		3	0.14	1	0.09	2	0.21
Benign neoplasm of breast	D24	2	0.10	0	0.00	2	0.21
Hemangioma	NA	1	0.05	1	0.09	0	0.00
Ophthalmology		25	1.19	18	1.58	7	0.73
Conjunctivitis	H10	23	1.09	17	1.49	6	0.62
Other disorders of eye and adnexa	H57	1	0.05	0	0.00	1	0.10
Retained (old) intraocular foreign body, magnetic	H446	1	0.05	1	0.09	0	0.00
Other Diseases		28	1.33	20	1.75	8	0.83
Dental abscess	NA	1	0.05	0	0.00	1	0.10
Drug allergy	NA	1	0.05	1	0.09	0	0.00
Edema, not elsewhere classified	R60	2	0.10	2	0.18	0	0.00
Enlarged lymph nodes	R59	8	0.38	5	0.44	3	0.31
Growing pains	NA	4	0.19	3	0.26	1	0.10
Malaise and fatigue	R53	8	0.38	6	0.53	2	0.21
Oth complications of surgical and medical care, NEC	T88	2	0.10	2	0.18	0	0.00
Teething pain	NA3	1	0.05	1	0.09	0	0.00
Otolaryngology		561	26.68	303	26.53	258	26.85
Acute suppurative otitis media	H660	4	0.19	3	0.26	1	0.10
Acute tonsillitis	J03	173	8.23	99	8.67	74	7.70
adenoidal hypertrophy	NA	1	0.05	1	0.09	0	0.00
Allergic rhinitis	J304	3	0.14	1	0.09	2	0.21
Deviated nasal septum	J342	1	0.05	0	0.00	1	0.10
Disorders of external ear in diseases classified elsewhere	H62	3	0.14	0	0.00	3	0.31
Eczema of external auditory canal	L303	1	0.05	1	0.09	0	0.00
Epistaxis	NA	4	0.19	3	0.26	1	0.10
Eustachian salpingitis and obstruction	H68	7	0.33	1	0.09	6	0.62
Foreign body in the ear	T16	7	0.33	3	0.26	4	0.42
Impacted cerumen	H612	3	0.14	0	0.00	3	0.31
Nonsuppurative otitis media	H65	162	7.70	86	7.53	76	7.91
Other and unspecified hearing loss	H91	5	0.24	3	0.26	2	0.21
Other disorders of external ear	H61	9	0.43	3	0.26	6	0.62
Otitis externa	H60	2	0.10	2	0.18	0	0.00
Perforation of tympanic membrane	H72	1	0.05	1	0.09	0	0.00
Streptococcal, TONSILLITIS	J030	162	7.70	87	7.62	75	7.80
Suppurative and unspecified otitis media	H66	13	0.62	9	0.79	4	0.42
Poisoning		25	1.19	14	1.23	11	1.14
Bacterial foodborne intoxication	A05	5	0.24	2	0.18	3	0.31

Supplementary Table 2: Continued

Detergent poisoning	NA	1	0.05	0	0.00	1	0.10
Food poisoning	NA	4	0.19	3	0.26	1	0.10
Petroleum poisoning	NA	1	0.05	1	0.09	0	0.00
Organophosphate poisoning	NA	2	0.10	2	0.18	0	0.00
Oth bacterial foodborne intoxications, NEC	A05	5	0.24	2	0.18	3	0.31
Venom of other arthropods/ Insect bite	T634	4	0.19	3	0.26	1	0.10
Venom of scorpion/ Scorpion bite	T632	3	0.14	1	0.09	2	0.21
Psychiatry diseases		2	0.10	1	0.09	1	0.10
Autism	NA	1	0.05	0	0.00	1	0.10
Conduct disorders	F91	1	0.05	1	0.09	0	0.00
Respiratory diseases		1082	51.45	588	51.49	494	51.40
Abnormalities of breathing	R06	1	0.05	0	0.00	1	0.10
Acute bronchiolitis	J21	113	5.37	59	5.17	54	5.62
Acute bronchitis	J20	18	0.86	11	0.96	7	0.73
Acute laryngitis	J040	10	0.48	8	0.70	2	0.21
Acute laryngitis and tracheitis	J04	5	0.24	3	0.26	2	0.21
Acute obstructive laryngitis [croup] and epiglottitis	J05	2	0.10	1	0.09	1	0.10
Acute pharyngitis	J02	65	3.09	37	3.24	28	2.91
Acute respiratory distress syndrome	J80	1	0.05	0	0.00	1	0.10
Acute sinusitis	J01	34	1.62	17	1.49	17	1.77
Acute upper resp infections of multiple and unsp sites	J06	7	0.33	3	0.26	4	0.42
Allergic rhinitis	J304	3	0.14	2	0.18	1	0.10
Asthma	J45	177	8.42	107	9.37	70	7.28
Bronchitis, not specified as acute or chronic	J40	3	0.14	3	0.26	0	0.00
Chronic diseases of tonsils and adenoids	J35	8	0.38	4	0.35	4	0.42
Chronic laryngitis and laryngotracheitis	J37	2	0.10	1	0.09	1	0.10
Chronic rhinitis, nasopharyngitis and pharyngitis	J31	4	0.19	4	0.35	0	0.00
Chronic sinusitis	J32	53	2.52	25	2.19	28	2.91
Cough	R05	35	1.66	24	2.10	11	1.14
Deviated nasal septum	J342	3	0.14	1	0.09	2	0.21
Diseases of vocal cords and larynx, not elsewhere classified	J38	1	0.05	0	0.00	1	0.10
Foreign body in airway	NA	1	0.05	1	0.09	0	0.00
Hemorrhage from respiratory passages	R04	1	0.05	1	0.09	0	0.00
Hypertrophy of nasal turbinates	J343	1	0.05	1	0.09	0	0.00
Hypertrophy of tonsils with hypertrophy of adenoids	J353	27	1.28	17	1.49	10	1.04
Influenza due to other identified influenza virus	J10	256	12.17	180	15.76	176	18.31
Laryngeal spasm	J385	2	0.10	1	0.09	1	0.10
NASOPHARYNGITIS, Common cold	J00	41	1.95	26	2.28	15	1.56
Other and unspecified disorders of nose and nasal sinuses	J34	3	0.14	0	0.00	3	0.31
Other diseases of upper respiratory tract	J39	3	0.14	1	0.09	2	0.21
Pain in throat and chest	R07	1	0.05	1	0.09	0	0.00
Peritonsillar abscess	J36	1	0.05	1	0.09	0	0.00
Pleural effusion, not elsewhere classified	J90	2	0.10	1	0.09	1	0.10
Pneumonia	J18	12	0.57	6	0.53	6	0.62
Pulmonary edema	J81	1	0.05	0	0.00	1	0.10
Resp cond d/t inhalation of chemicals, gas, fumes and vapors	J68	4	0.19	1	0.09	3	0.31
Streptococcal pharyngitis	J020	79	3.76	40	3.50	39	4.06
Unspecified chronic bronchitis	J42	1	0.05	0	0.00	1	0.10
Viral pneumonia, not elsewhere classified	J12	1	0.05	0	0.00	1	0.10
Trauma / Injury		11	0.52	8	0.70	3	0.31
Burn of first degree, body region unspecified	T301	1	0.05	0	0.00	1	0.10
Ecchymosis on the arm	NA	1	0.05	0	0.00	1	0.10
Ecchymosis on the face	NA	2	0.10	1	0.09	1	0.10
Ecchymosis on the pelvis	NA	1	0.05	1	0.09	0	0.00
Ecchymosis on the thigh	NA	1	0.05	1	0.09	0	0.00
Ecchymosis on the hand	NA	1	0.05	1	0.09	0	0.00
Heatstroke and sunstroke	T670	3	0.14	3	0.26	0	0.00
Traf of spcf type but victim's mode of transport unknown	V87	1	0.05	1	0.09	0	0.00
Early teenage (10 to 14 years)			Total number of patients	988	Total number of diagnoses	1598	
			Total	Male (455 patients)	Female (533 patients)		
Diagnosis	ICD-10 code	Frequency	Percentage among age group	Frequency	Percentage among age group	Frequency	Percentage among age group
Cardiology		2	0.20	0	0.00	2	0.38
Cardiac murmurs and other cardiac sounds	R01	0	0.00	0	0.00	2	0.38
Dermatology		38	3.85	21	4.62	17	3.19
Impetigo	L01	5	0.51	5	1.10	0	0.00
Eczema	L303	2	0.20	2	0.44	0	0.00
Allergic contact dermatitis	L23	3	0.30	2	0.44	1	0.19
Pityriasis rosea	L42	2	0.20	1	0.22	1	0.19
Urticaria	L50	7	0.71	3	0.66	4	0.75
Infective dermatitis/Eczematoid dermatitis	L303	4	0.40	2	0.44	2	0.38
Other disorders of skin and subcutaneous tissue	L98	1	0.10	1	0.22	0	0.00
Vitiligo	NA	1	0.10	1	0.22	0	0.00
Alopecia Areata	L63	1	0.10	1	0.22	0	0.00
Scalp infection	NA	1	0.10	1	0.22	0	0.00
Rash and other nonspecific skin eruption	R21	2	0.20	2	0.44	0	0.00
Other and unspecified dermatitis	L30	1	0.10	0	0.00	1	0.19
Nail disorders	L60	1	0.10	0	0.00	1	0.19
Psoriasis	L40	1	0.10	0	0.00	1	0.19
Cutaneous abscess, furuncle and carbuncle	L02	4	0.40	0	0.00	4	0.75
Unspecified contact dermatitis	L25	1	0.10	0	0.00	1	0.19
Pilonidal cyst and sinus	L05	1	0.10	0	0.00	1	0.19
Endocrinology		78	7.89	32	7.03	46	8.63
Short stature	R62.52	74	7.49	31	6.81	43	8.07
Wilson's disease	NA	1	0.10	1	0.22	0	0.00
Disorders of puberty, not elsewhere classified	E30	1	0.10	0	0.00	1	0.19
Growth hormone deficiency	NA	1	0.10	0	0.00	1	0.19
Delay puberty	E30	1	0.10	0	0.00	1	0.19
Gastroenterology		123	12.45	45	9.89	78	14.63
Abdominal Colic/Other and unspecified abdominal pain	R104	14	1.42	7	1.54	7	1.31
Nausea and vomiting	R11	14	1.42	7	1.54	7	1.31
Anal fissure, unspecified	K602	1	0.10	1	0.22	0	0.00
Recurrent oral aphthae	K120	9	0.91	2	0.44	7	1.31
Other and unsp noninfective gastroenteritis and colitis	K52	6	0.61	5	1.10	1	0.19

Supplementary Table 2: Continued

Gastritis and duodenitis	K29	3	0.30	2	0.44	1	0.19
Abdominal and pelvic pain	R10	34	3.44	6	1.32	28	5.25
Constipation	K590	2	0.20	1	0.22	1	0.19
Flatulence and related conditions	R14	1	0.10	1	0.22	0	0.00
Dyspepsia	R101	8	0.81	4	0.88	4	0.75
Irritable bowel syndrome	K58	3	0.30	1	0.22	2	0.38
Cellulitis and abscess of mouth	K122	3	0.30	1	0.22	2	0.38
Abdominal pain	R10	2	0.20	2	0.44	0	0.00
Other diseases of lip and oral mucosa	K13	1	0.10	1	0.22	0	0.00
Gastro oesophageal reflux disease	K219	1	0.10	1	0.22	0	0.00
Inguinal hernia	K40	1	0.10	1	0.22	0	0.00
Lactose intolerance	E73	1	0.10	1	0.22	0	0.00
Ulcerative colitis	K51	1	0.10	1	0.22	0	0.00
Oth symptoms and signs involving the dgstv sys and abdomen	R19	5	0.51	0	0.00	5	0.94
Intestinal malabsorption	K90	5	0.51	0	0.00	5	0.94
Other diseases of intestine	K63	1	0.10	0	0.00	1	0.19
Diseases of salivary glands	K11	1	0.10	0	0.00	1	0.19
Foreign body injestion	NA	1	0.10	0	0.00	1	0.19
Other diseases of stomach and duodenum	K31	1	0.10	0	0.00	1	0.19
Abscess mandible	NA	1	0.10	0	0.00	1	0.19
Dizziness and giddiness	R42	1	0.10	0	0.00	1	0.19
Other diseases of digestive system	K92	1	0.10	0	0.00	1	0.19
Peptic ulcer, site unspecified	K27	1	0.10	0	0.00	1	0.19
Hematology & Immunology		11	1.11	6	1.32	5	0.94
Acquired hemolytic anemia	D59	1	0.10	1	0.22	0	0.00
Anemia	D649	2	0.20	1	0.22	1	0.19
Favism - G6PD Deficiency	D55.0	1	0.10	1	0.22	0	0.00
Folate deficiency anemia	D52	3	0.30	1	0.22	2	0.38
Other nutritional anemias	D53	3	0.30	1	0.22	2	0.38
Thalassemia	D56	1	0.10	1	0.22	0	0.00
Infectious disease		164	16.60	83	18.24	81	15.20
Viral and other specified intestinal infections	A08	52	5.26	28	6.15	24	4.50
Other intestinal helminthiases, not elsewhere classified	B81	10	1.01	4	0.88	6	1.13
Viral intestinal infection, unspecified	A084	11	1.11	7	1.54	4	0.75
Acute hepatitis A	B15	11	1.11	4	0.88	7	1.31
Fever of other and unknown origin	R50	25	2.53	14	3.08	11	2.06
Cholera/ AWD/ Suspected Cholera	A00	5	0.51	3	0.66	2	0.38
Gastroenteritis and colitis of unspecified origin	A099	13	1.32	6	1.32	7	1.31
Unspecified intestinal parasitism	B82	4	0.40	1	0.22	3	0.56
Typhoid and paratyphoid fevers	A01	7	0.71	3	0.66	4	0.75
Helminthiasis/Other helminthiases	B83	2	0.20	2	0.44	0	0.00
Mumps	B26	2	0.20	1	0.22	1	0.19
Diarrhea and gastroenteritis of presumed infectious origin	A09	5	0.51	3	0.66	2	0.38
Zoster [herpes zoster]	B02	1	0.10	1	0.22	0	0.00
Varicella chickenpox	B01	7	0.71	3	0.66	4	0.75
Scabies	B86	2	0.20	1	0.22	1	0.19
Rubella [German measles]	B06	1	0.10	1	0.22	0	0.00
Other protozoal intestinal diseases	A07	4	0.40	1	0.22	3	0.56
Hand, foot and mouth disease	B08.4	1	0.10	0	0.00	1	0.19
Acute bloody Diarrhea	A090	1	0.10	0	0.00	1	0.19
Musculoskeletal disorders		55	5.57	20	4.40	32	6.00
Acquired deformities of fingers and toes	M20	1	0.10	0	0.00	1	0.19
Arthralgia	NA	3	0.30	1	0.22	1	0.19
arthralgia	NA	1	0.10	1	0.22	0	0.00
Arthropathies in other diseases classified elsewhere	M14	3	0.30	3	0.66	0	0.00
Dorsalgia	M54	7	0.71	4	0.88	1	0.19
growing pains	NA	4	0.40	1	0.22	3	0.56
Osteopathies in diseases classified elsewhere	M90	1	0.10	1	0.22	0	0.00
Other and unspecified arthropathy	M12	6	0.61	1	0.22	5	0.94
Other arthritis	M13	4	0.40	1	0.22	3	0.56
Other crystal arthropathies	M11	2	0.20	2	0.44	0	0.00
Other disorders of muscle	M62	1	0.10	1	0.22	0	0.00
Other joint disorder, not elsewhere classified	M25	4	0.40	0	0.00	4	0.75
Other rheumatoid arthritis	M06	7	0.71	2	0.44	5	0.94
Pain, unspecified	R52	1	0.10	1	0.22	0	0.00
Recurrent fractures	NA	1	0.10	1	0.22	0	0.00
Seropositive rheumatoid arthritis	M05	7	0.71	0	0.00	7	1.31
sprain	NA	2	0.20	0	0.00	2	0.38
Neonatology / congenital anomalies		1	0.10	1	0.22	0	0.00
Other congenital malformations of heart	Q24	1	0.10	1	0.22	0	0.00
Nephrology and urology		195	19.74	39	8.57	156	29.27
Calculus of urinary tract in diseases classified elsewhere	N22	1	0.10	1	0.22	0	0.00
Cystitis	N30	13	1.32	3	0.66	10	1.88
Fecal incontinence	R15	1	0.10	0	0.00	1	0.19
Hereditary nephropathy, not elsewhere classified	N07	1	0.10	1	0.22	0	0.00
Kidney calculus	N200	3	0.30	0	0.00	3	0.56
Noninflammatory disorders of testis	N44	1	0.10	1	0.22	0	0.00
Oth and unsp symptoms and signs involving the GU sys	R39	25	2.53	5	1.10	20	3.75
Oth disorders of kidney and ureter in diseases classd elswhr	N29	1	0.10	0	0.00	1	0.19
Oth disorders of kidney and ureter, not elsewhere classified	N28	2	0.20	0	0.00	2	0.38
Pain associated with micturition	R30	2	0.20	0	0.00	2	0.38
Polyuria	R35	1	0.10	0	0.00	1	0.19
Pyelonephritis	N12	13	1.32	2	0.44	11	2.06
Recurrent and persistent hematuria	N02	2	0.20	0	0.00	2	0.38
Renal tubulo-interstitial disord in diseases classd elswhr	N16	1	0.10	0	0.00	1	0.19
Retention of urine	R33	1	0.10	1	0.22	0	0.00
Stress incontinence	N393	2	0.20	0	0.00	2	0.38
Unspecified renal colic	N23	4	0.40	2	0.44	2	0.38
Unspecified urinary incontinence	R32	27	2.73	10	2.20	17	3.19
Urethral disorders in diseases classified elsewhere	N37	1	0.10	0	0.00	1	0.19
Urethritis and urethral syndrome	N34	6	0.61	2	0.44	4	0.75
Urinary tract infection	N390	87	8.81	11	2.42	76	14.26
Neurology		52	5.26	19	4.18	33	6.19
Headache	R51	22	2.23	10	2.20	12	2.25

Supplementary Table 2: Continued

Other paralytic syndromes	G83	1	0.10	1	0.22	0	0.00
Other disorders of brain in diseases classified elsewhere	G94	1	0.10	1	0.22	0	0.00
Dizziness and giddiness	R42	7	0.71	2	0.44	5	0.94
Somnolence, stupor and coma	R40	2	0.20	2	0.44	0	0.00
Infantile cerebral palsy	G80	5	0.51	2	0.44	3	0.56
Epilepsy	G40	7	0.71	1	0.22	5	0.94
synovitis	NA	1	0.10	0	0.00	1	0.19
Convulsions, not elsewhere classified	R56	1	0.10	0	0.00	1	0.19
Specific developmental disorder of motor function	F82	1	0.10	0	0.00	1	0.19
Migraine	G43	1	0.10	0	0.00	1	0.19
Other and unspecified myopathies	G72	1	0.10	0	0.00	1	0.19
Hydrocephalus	G91	1	0.10	0	0.00	1	0.19
Other disorders of peripheral nervous system	G64	1	0.10	0	0.00	1	0.19
Nutrition and metabolism disorders		33	3.34	8	1.76	25	4.69
Anorexia	R630	18	1.82	6	1.32	12	2.25
Dietary calcium deficiency	E58	2	0.20	0	0.00	2	0.38
Dietary zinc deficiency	E60	1	0.10	1	0.22	0	0.00
Failure to thrive	R62.51	5	0.51	0	0.00	5	0.94
Food allergy	NA	1	0.10	1	0.22	0	0.00
Hypocalcemia	NA	1	0.10	0	0.00	1	0.19
Other nutritional deficiencies	E63	2	0.20	0	0.00	2	0.38
Retarded development following protein-energy malnutrition	E45	1	0.10	0	0.00	1	0.19
Sequelae of malnutrition and other nutritional deficiencies	E64	2	0.20	0	0.00	2	0.38
Ophthalmology		13	1.32	9	1.98	4	0.75
Conjunctivitis	H10	11	1.11	7	1.54	4	0.75
Other disorders of optic [2nd] nerve and visual pathways	H47	1	0.10	1	0.22	0	0.00
Other inflammation of eyelid	H01	1	0.10	1	0.22	0	0.00
Other Diseases		35	3.54	21	4.62	14	2.63
Drug allergy	NA	2	0.20	0	0.00	2	0.38
Edema, not elsewhere classified	R60	1	0.10	0	0.00	1	0.19
Enlarged lymph nodes	R59	6	0.61	5	1.10	1	0.19
Growing pains	NA	3	0.30	1	0.22	2	0.38
Illness, unspecified	R69	1	0.10	0	0.00	1	0.19
Malaise and fatigue	R53	22	2.23	15	3.30	7	1.31
Otolaryngology		201	20.34	92	20.22	109	20.45
Streptococcal, TONSILLITIS	J030	62	6.28	27	5.93	35	6.57
Nonsuppurative otitis media	H65	44	4.45	22	4.84	22	4.13
Acute tonsillitis	J03	68	6.88	29	6.37	39	7.32
Otitis externa	H60	4	0.40	2	0.44	2	0.38
Epistaxis	NA	2	0.20	1	0.22	1	0.19
Foreign body in ear	T16	1	0.10	1	0.22	0	0.00
Other disorders of external ear	H61	2	0.20	2	0.44	0	0.00
Acute suppurative otitis media	H660	1	0.10	1	0.22	0	0.00
Other disorders of middle ear and mastoid	H74	1	0.10	1	0.22	0	0.00
Suppurative and unspecified otitis media	H66	3	0.30	2	0.44	1	0.19
Allergic rhinitis	J304	4	0.40	2	0.44	2	0.38
Other inflammation of eyelid	H01	1	0.10	1	0.22	0	0.00
Otalgia	NA	1	0.10	1	0.22	0	0.00
Disorders of external ear in diseases classified elsewhere	H62	1	0.10	0	0.00	1	0.19
Oth disord of mid ear and mastoid in diseases classd elswshr	H75	1	0.10	0	0.00	1	0.19
Foregin body in the nose	NA	2	0.20	0	0.00	2	0.38
Impacted cerumen	H612	3	0.30	0	0.00	3	0.56
Poisoning		22	2.23	14	3.08	8	1.50
Scorpion bites	NA	1	0.10	1	0.22	0	0.00
Venom of other arthropods/ Insect bite	T634	2	0.20	2	0.44	0	0.00
Bacterial foodborne intoxication	A05	5	0.51	4	0.88	1	0.19
Oth bacterial foodborne intoxications, NEC	A05	5	0.51	4	0.88	1	0.19
Food poisoning	NA	5	0.51	2	0.44	3	0.56
Detergent poisoning	NA	1	0.10	1	0.22	0	0.00
Organophosphate poisoning	NA	2	0.20	0	0.00	2	0.38
Sequelae of poisoning by drugs, medicaments and biological substances	T96	1	0.10	0	0.00	1	0.19
Psychiatry diseases		2	0.20	1	0.22	1	0.19
anxiety disorders	F41	1	0.10	0	0.00	1	0.19
Autism	NA	1	0.10	1	0.22	0	0.00
Respiratory diseases		415	42.00	209	45.93	206	38.65
Acute bronchiolitis	J21	35	3.54	21	4.62	14	2.63
Acute bronchitis	J20	6	0.61	4	0.88	2	0.38
Acute laryngitis	J040	1	0.10	1	0.22	0	0.00
Acute laryngitis and tracheitis	J04	6	0.61	0	0.00	6	1.13
Acute pharyngitis	J02	36	3.64	15	3.30	21	3.94
Acute respiratory distress syndrome	J80	1	0.10	0	0.00	1	0.19
Acute sinusitis	J01	30	3.04	16	3.52	14	2.63
Asthma	J45	69	6.98	49	10.77	20	3.75
Bronchiectasis	J47	2	0.20	1	0.22	1	0.19
Chronic diseases of tonsils and adenoids	J35	3	0.30	1	0.22	2	0.38
Chronic rhinitis, nasopharyngitis and pharyngitis	J31	1	0.10	1	0.22	0	0.00
Chronic sinusitis	J32	29	2.94	9	1.98	20	3.75
Cough	R05	9	0.91	3	0.66	6	1.13
Deviated nasal septum	J342	1	0.10	1	0.22	0	0.00
Hemorrhage from respiratory passages	R04	1	0.10	0	0.00	1	0.19
Hypertrophy of tonsils with hypertrophy of adenoids	J353	3	0.30	2	0.44	1	0.19
Influenza due to other identified influenza virus	J10	142	14.37	70	15.38	72	13.51
Laryngeal spasm	J385	1	0.10	0	0.00	1	0.19
NASOPHARYNGITIS, Common cold	J00	14	1.42	4	0.88	10	1.88
Other diseases of upper respiratory tract	J39	2	0.20	0	0.00	2	0.38
Pneumonia	J18	2	0.20	0	0.00	2	0.38
Streptococcal pharyngitis	J020	20	2.02	11	2.42	9	1.69
Unspecified chronic bronchitis	J42	1	0.10	0	0.00	1	0.19
Trauma / Injury		7	0.71	3	0.66	4	0.75
Echymosis on the back	NA	1	0.10	0	0.00	1	0.19
Echymosis on the chest	NA	1	0.10	0	0.00	1	0.19
Echymosis on the foot	NA	1	0.10	1	0.22	0	0.00
Echymosis on the nose	NA	1	0.10	1	0.22	0	0.00
Fracture of mandible	S026	1	0.10	0	0.00	1	0.19

Supplementary Table 2: Continued

Heatstroke and sunstroke	T670	1	0.10	1	0.22	0	0.00
Superficial injury of ankle, foot and toes	S90	1	0.10	0	0.00	1	0.19
Late teenage (15 to 19 years)		Total number of patients		1822		Total number of diagnoses	
				Male (36 patients)		Female (1785)	
Diagnosis	ICD-10 code	Frequency	Percentage among age group	Frequency	Percentage among age group	Frequency	Percentage among age group
Dermatology		5	0.27	1	2.78	4	0.22
Other disorders of skin and subcutaneous tissue	L98	1	0.05	0	0.00	1	0.06
Other and unspecified dermatitis	L30	1	0.05	0	0.00	1	0.06
Infective dermatitis/Eczematoid dermatitis	L303	1	0.05	1	2.78	0	0.00
Hypertrichosis	L68	1	0.05	0	0.00	1	0.06
Cellulitis	L03	1	0.05	0	0.00	1	0.06
Endocrinology		12	0.66	5	13.89	7	0.39
Delay puberty	E30	3	0.16	0	0.00	3	0.17
Short stature	R62.52	7	0.38	5	13.89	2	0.11
Type 1 diabetes mellitus	E10	2	0.11	0	0.00	2	0.11
Gastroenterology		64	3.51	4	11.11	60	3.36
Abdominal and pelvic pain	R10	26	1.43	0	0.00	26	1.46
Anal fissure, unspecified	K602	10	0.55	0	0.00	10	0.56
Constipation	K590	1	0.05	0	0.00	1	0.06
Fissure and fistula of anal and rectal regions	K60	2	0.11	0	0.00	2	0.11
Gastritis and duodenitis	K29	3	0.16	1	2.78	2	0.11
Haemorrhoids, unspecified	K649	2	0.11	0	0.00	2	0.11
Hemorrhoids and perianal venous thrombosis	K64	1	0.05	0	0.00	1	0.06
Nausea and vomiting	R11	6	0.33	1	2.78	5	0.28
Oth symptoms and signs involving the dgstv sys and abdomen	R19	1	0.05	1	2.78	0	0.00
Other and unsp noninfective gastroenteritis and colitis	K52	7	0.38	0	0.00	7	0.39
Other diseases of intestine	K63	1	0.05	0	0.00	1	0.06
Other diseases of stomach and duodenum	K31	1	0.05	0	0.00	1	0.06
Stomatitis and related lesion	K12	1	0.05	0	0.00	1	0.06
Ulcerative colitis	K51	1	0.05	0	0.00	1	0.06
Unspecified jaundice	R17	1	0.05	1	2.78	0	0.00
Gynecology / Obstetrics		1587	87.10	0	0.00	1587	88.91
Abortion - unspecified	NA	1	0.05	NA	NA	1	0.06
Abortion - incomplete	NA	1	0.05	NA	NA	1	0.06
Abortion - threatened	NA	2	0.11	NA	NA	2	0.11
Abortion - spontaneous	O03	16	0.88	NA	NA	16	0.90
Intra-uterine fetal death	NA	1	0.05	NA	NA	1	0.06
Absent, scanty and rare menstruation	N91	80	4.39	NA	NA	80	4.48
Amenorrhea	NA	8	0.44	NA	NA	8	0.45
Complications following (induced) termination of pregnancy	O04	1	0.05	NA	NA	1	0.06
Complications of the puerperium, not elsewhere classified	O90	1	0.05	NA	NA	1	0.06
Delayed menses	NA	13	0.71	NA	NA	13	0.73
Dysmenorrhea, unspecified	N94.6	11	0.60	NA	NA	11	0.62
Excessive, frequent and irregular menstruation	N92	108	5.93	NA	NA	108	6.05
Female infertility, unspecified	N97	23	1.26	NA	NA	23	1.29
Female pelvic inflam disorders in diseases classd elshwr	N74	0	0.00	NA	NA	0	0.00
Hemorrhage in early pregnancy	O20	6	0.33	NA	NA	6	0.34
Infections of genitourinary tract in pregnancy	O23	8	0.44	NA	NA	8	0.45
Inflammatory disorders of breast	N61	2	0.11	NA	NA	2	0.11
Benign neoplasm of ovary	D27	1	0.05	NA	NA	1	0.06
Benign neoplasm of breast	D24	1	0.05	NA	NA	1	0.06
Mastitis	NA	1	0.05	NA	NA	1	0.06
Menopausal and other perimenopausal disorders	N95	4	0.22	NA	NA	4	0.22
Oth disord of brst/lactatn assoc w pregnancy and the puerp	O92	1	0.05	NA	NA	1	0.06
Other abnormal products of conception	O02	1	0.05	NA	NA	1	0.06
Other abnormal uterine and vaginal bleeding	N93	14	0.77	NA	NA	14	0.78
Other disorders of breast	N64	3	0.16	NA	NA	3	0.17
Infection of vagina and vulva	N76	81	4.45	NA	NA	81	4.54
Other noninflammatory disorders of uterus, except cervix	N85	1	0.05	NA	NA	1	0.06
Other noninflammatory disorders of vulva and perineum	N90	0	0.00	NA	NA	0	0.00
Unspecified ovarian cysts	N83.2	11	0.60	NA	NA	11	0.62
Vaginismus	NA	3	0.16	NA	NA	3	0.17
Pregnancy		1183	64.93	NA	NA	1183	66.27
Infectious disease		12	0.66	6	16.67	6	0.34
Fever of other and unknown origin	R50	3	0.16	1	2.78	2	0.11
Gastroenteritis and colitis of unspecified origin	A099	5	0.27	2	5.56	3	0.17
Other intestinal helminthiasis, not elsewhere classified	B81	1	0.05	1	2.78	0	0.00
Viral and other specified intestinal infections	A08	1	0.05	1	2.78	0	0.00
Viral intestinal infection, unspecified	A084	2	0.11	1	2.78	1	0.06
Musculoskeletal disorders		15	0.82	0	0.00	15	0.84
Dorsalgia	M54	14	0.77	0	0.00	14	0.78
Other and unspecified arthropathy	M12	1	0.05	0	0.00	0	0.00
Nephrology and urology		140	7.68	0	0.00	140	7.84
Calculus of urinary tract in diseases classified elsewhere	N22	1	0.05	0	0.00	1	0.06
Cystitis	N30	4	0.22	0	0.00	4	0.22
Oth and unsp symptoms and signs involving the GU sys	R39	4	0.22	0	0.00	4	0.22
Pain associated with micturition	R30	1	0.05	0	0.00	1	0.06
Unspecified renal colic	N23	4	0.22	0	0.00	4	0.22
Unspecified urinary incontinence	R32	1	0.05	0	0.00	1	0.06
Urethritis and urethral syndrome	N34	22	1.21	0	0.00	22	1.23
Urinary tract infection	N390	103	5.65	0	0.00	103	5.77
Neurology		7	0.38	2	5.56	5	0.28
Dizziness and giddiness	R42	1	0.05	0	0.00	1	0.06
Epilepsy	G40	1	0.05	0	0.00	1	0.06
Convulsion	R560	1	0.05	0	0.00	1	0.06
Headache	R51	2	0.11	1	2.78	1	0.06
Migraine	G43	2	0.11	1	2.78	1	0.06
Nutrition and metabolism disorders		5	0.27	1	2.78	4	0.22
Anorexia	R630	2	0.11	0	0.00	2	0.11
Other nutritional deficiencies	E63	3	0.16	1	2.78	2	0.11
Other Diseases		29	1.59	0	0.00	29	1.62
Malaise and fatigue	R53	29	1.59	0	0.00	29	1.62
Otolaryngology		11	0.60	2	5.56	9	0.50

Supplementary Table 2: Continued

Streptococcal, TONSILLITIS	J030	2	0.11	1	2.78	1	0.06
Otitis externa	H60	1	0.05	1	2.78	0	0.00
Acute tonsillitis	J03	3	0.16	0	0.00	3	0.17
Nonsuppurative otitis media	H65	1	0.05	0	0.00	1	0.06
Other and unspecified disorders of Eustachian tube	H69	1	0.05	0	0.00	1	0.06
Acute suppurative otitis media	H660	1	0.05	0	0.00	1	0.06
Epistaxis	NA	1	0.05	0	0.00	1	0.06
Vertigo	NA	1	0.05	0	0.00	1	0.06
Poisoning		1	0.05	1	2.78	0	0.00
Venom of other arthropods/ Insect bite	T634	1	0.05	1	2.78	0	0.00
Respiratory diseases		30	1.65	14	38.89	16	0.90
Acute bronchiolitis	J21	3	0.16	1	2.78	2	0.11
Acute bronchitis	J20	1	0.05	0	0.00	1	0.06
Acute laryngitis and tracheitis	J04	1	0.05	0	0.00	1	0.06
Acute pharyngitis	J02	3	0.16	0	0.00	3	0.17
Acute sinusitis	J01	1	0.05	0	0.00	1	0.06
Asthma	J45	7	0.38	4	11.11	3	0.17
Chronic sinusitis	J32	2	0.11	1	2.78	1	0.06
Cough	R05	1	0.05	1	2.78	0	0.00
Influenza due to other identified influenza virus	J10	9	0.49	6	16.67	3	0.17
Other and unspecified disorders of nose and nasal sinuses	J34	1	0.05	1	2.78	0	0.00
Unspecified chronic bronchitis	J42	1	0.05	0	0.00	1	0.06
Trauma / Injury		1	0.05	0	0.00	1	0.06
Heatstroke and sunstroke	T670	1	0.05	0	0.00	1	0.06