# Emergency Department Care Survey

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## ISTANBUL BEYOGLU PUBLIC HOSPITALS UNION

Through its Healthcare Transformation Program, Turkey has successfully introduced health system changes to provide its citizens with the right to health. One of the most important changes that was brought about by the Program was the rearrangement of the organizational structure of the Ministry of Health. Within this framework, The Turkish Public Hospitals Union was founded and commissioned to carry out the operations of secondary and tertiary level healthcare facilities.

The establishment of the Union has aimed to provide savings, increase productivity, distributes human resources equally and provide cooperation between partners to carry out equal, high quality and efficient care delivery.

As a result, 89 hospital unions were launched countrywide. Secondary and tertiary level public healthcare facilities within the same province have been unified under the management of a Public Hospitals Union. More than one Union has been established in the same province if the size of the service provided was appropriate. There are 6 such Unions serving in the city of Istanbul and Beyoglu Public Hospitals Union (BKHB) is one of them. It was established in November 2012 and encompasses 11 hospitals. The union mainly serves a population of 2.3 Million in the Beyoglu, Şişli, Beşiktaş and Sarıyer local municipalities; although patients from other districts are free to apply. 63% of the people residing in this region have at least once visited our hospitals. Approximately 25% of patients come from other districts.

There are 5 Teaching Hospitals (TH), 5 secondary level Public Hospitals (PH) and 1 Oral and Dental Health Hospital within our union and the union is responsible for providing health services to the citizens efficiently. Our union is also positioned as the Coordinating Union for Istanbul and manages Human Resource and Medical Services planning for the whole city.

## OUR HOSPITALS

### Okmeydanı Teaching Hospital

Okmeydanı Teaching Hospital started serving the city as Beyoglu Hospital with 1000 registered beds and got authorized for residency training in all its clinics in 1979. In 1983, it was registered as SSK Okmeydanı Teaching Hospital and in 2005 its control was transferred to the Ministry of Health. It has a special pediatric emergency department, serving only for patients under the age of 15. It has an enclosed area of 60.370 $m^2$, 753 registered beds and 2640 employees.

### Şişli Hamidiye Etfal Teaching Hospital

The hospital was established in June 1899 as Hamidiye Etfal Hospital after the death of Sultan II. Abdulhamid`s eight month old daughter, Sultan Hatice. It is the first public hospital that started medical residency training. Medical specialty training that had started with 5 physicians in 1904 has expanded in different fields. Nurses, assistant nurses, midwives, laboratory worker and different technicians in various specialties were trained in the hospital since 1930.

The orthopedics and pediatrics clinics of Istanbul Medical School were located here, between 1933 and 1949. The hospital, being one of the outstanding teaching hospitals in Turkey, still provides training in 21 medical specialties. There are 3 separate emergency departments for adults, children, and gynecology and obstetrics patients. It has an enclosed area of 83704 $m^2$, 677 registered beds and 2.498 employees.

### Gaziosmanpaşa Taksim Teaching Hospital

The hospital started serving under the name of Taksim Hospital in 1969 but its history dates back to 1910's, when it served as a nursing home. The hospital has moved to its new building in Gaziosmanpaşa, at the end of 2012. It has an enclosed area of 61193 $m^2$, 300 registered beds and 1.384 employees.

### Metin Sabancı Baltalimanı Orthopedic Teaching Hospital

The hospital was opened to service by the Ministry of Health in 1944 under the name of Bone and Joint Tuberculosis Hospital. Its name was changed as Baltalimanı Orthopedic Hospital in 1960. It was transformed into specialty teaching hospital by the Ministry of Health in December 3, 2001 and it is the first specialty Teaching Hospital in orthopedics and traumatology. It has an enclosed area of 15236 $m^2$, 136 registered beds and 537 employees. It has an emergency department, however is not included in our report because it is a specialty hospital.

### Prof. Dr. Reşat Belger Beyoğlu Ophthalmology Teaching Hospital

During the cholera epidemic in 1865, a shop was rented in Galata Kuledibi and the patients were cared here. Thus, the hospital was founded and took the name of Beyoglu Municipality Hospital in 1948, with 102 beds. In 1998, its management was transferred to the Ministry of Health and transformed into specialty Teaching Hospital training physicians in Ophthalmology. It is the first and only ophthalmology hospital in Istanbul. It has an enclosed area of 10301 $m^2$,


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100 registered beds and 389 employees. It has an emergency department, however is not included in our report because it is a specialty hospital.

**Eyüp Public Hospital**

The hospital was founded as Eyüp SSK Hospital in 1952 and its name was changed as Eyüp Public Hospital in 2005. It serves as a secondary level public hospital with its buildings and its district outpatient clinics. It has an enclosed area of 19155 $m^2$, 140 registered beds and 576 employees.

**Sarıyer İstinye Public Hospital**

The hospital was founded in 1948, as a two-floor building, with its first floor being Tuberculosis Control Dispensary and the second floor being a health center with 10 beds. It moved to its current building in 1998 and it serves as a secondary level public hospital. It has an enclosed area of 8935 $m^2$, 128 registered beds and 442 employees.

**Kâğıthane Public Hospital**

The hospital was founded as an ambulatory care clinic in 2005 and started providing inpatient care since 2007. It serves as a secondary level public hospital. It has an enclosed area of 11073 $m^2$, 51 registered beds and 361 employees.

**Sarıyer İsmail Akgün Public Hospital**

The hospital was built by a philanthropist named İsmail Akgün and started serving as a dispensary in 1948. Its management was transferred to the Ministry of Health in 1985 and continued serving as a secondary level public hospital in Sarıyer district. It has an enclosed area of 3344 $m^2$, 40 registered beds and 223 employees.

**Beşiktaş Sait Çiftçi Public Hospital**

The hospital was built by a philanthropist named Sait Çiftçi in 1972 and its ownership was transferred to municipal authority as a dispensary. Its control was transferred to the Ministry of Health in 1982. It has been serving under the name of Beşiktaş Sait Çiftçi Public Hospital since 2010. The hospital doesn't have inpatient clinics and is not included in our report because it doesn't have 24 hour serving emergency department. It has an enclosed area of 4180 $m^2$ and 163 employees.

**Okmeydanı Oral and Dental Health Hospital**

The hospital was founded as Şişli Etfal Teaching Hospital Dental Clinic and became a separate institution as Şişli Oral and Dental Health Center in April 27, 1999. It moved to its separate and current building in 2003. It is one of the biggest hospitals serving as an oral and dental health hospital in Turkey. It has an enclosed area of 12.100 $m^2$, 12 registered beds and 582 employees. It has an emergency department, however is not included in our report because it is a specialty hospital.

## MATERIALS AND METHODS

Hospital and Emergency Department visit numbers for Turkey and Istanbul are obtained from Directorate General of Health Services Statistics, Analysis and information Systems via official correspondence.

We conducted our detailed Emergency Department analysis based on the data obtained from the hospitals managed by Beyoglu Public Hospitals Union. All data are obtained from Beyoglu Decision Support System (DSS) which retracts data from 11 different Hospital Management and Information System (HMIS).We used the electronic records of 4 secondary level and 3 tertiary level public hospitals for year 2014. 3 of the specialty hospitals and one secondary level acute care hospital were excluded because their emergency department did not provide full range of conventional emergency care. We analyzed variables including but not limited to number of visits, age, sex, triage category, arrival time and day, admission rate and diagnosis according to ICD 10 code.

While analyzing the data, we calculated descriptive statistics such as mean (M), standard deviation, maximum value (Max), minimum value (Min). Then data was controlled to check whether it was suitable for "Normal Distribution". Then we decided whether or not to apply parametric or nonparametric test.

The significance level (p) is taken as % 5 (0.05) and two tests are applied; "independent samples t test" (parametric test) and "Mann Whithey'u test". ANOVA test is applied when the data include more than two groups. "Coefficient of correlation" is used to measure the relationship between the variables. We performed statistical analysis using "IBM SPSS Statistic Version 22".

## EMERGENCY CARE IN TURKEY

As a result of the Health Transformation Program and the concurrent Social Security Reform started in 2003, access to healthcare has improved and increased across the country. Number of visits to a healthcare provider per person has risen dramatically especially after 2003. Doctor visit per capita increased from 3.2 in 2002 to 8.2 in 2011, even surpassing the OECD average of 6.7 (Table 1).

When we look at Table 1, we see that the number of visits tend to increase continuously between 2002 and 2013. Although the number of primary care visits decreased in 2010, 2011 and 2013, secondary and tertiary care visits per patient tended to continue climbing. There isn't any significant difference in the distribution of visits per patient between 2002 and 2013; the average is 36.9% for primary care and 63.1% for secondary and tertiary care.

The rate of increase in primary care visits per patient between 2002 and 2013 is 164% and 165% for secondary and tertiary care. The most dramatic increase in doctor visits is in Emergency Departments (ED). Per capita Emergency Department visits (EDV) was 0.29 in 2002; however it reached to 1.31 with an increase of 352% in 2013 (Table 2, 3). When we compare this with the international data we see that the EDV per patient is 0.4 in the US and Britain in 2013, and EDV is quite high in our country (1).

When we analyze hospital visits for the whole country, we see that the growth rate of visits to ED shows a faster increase than the others (Figure 1, Table 4). The highest increase was at the time when Social Insurance Institution Hospitals and Public Hospitals merged and the hospitals of the Ministry of Health started providing service to the blue-collar workers and their families. As a result of this upsurge, the number of visits to ED throughout Turkey surpassed the population and reached to over 100 million (Table 5). We think the reason for this increase was because patients were able to use the ED of all the hospitals of if they needed immediate attention without any need for referral including private hospitals with and without Social Security Institution contracts for free.

EDV throughout Turkey in the hospitals of the Ministry of Health has increased continuously until 2009 (Table 6). In 2002, 16.79% of the visits to the hospitals of the Ministry of Health were emergency patients, and in 2009 the rate went up to 31.76%. Similarly, the rate of emergency patients in private hospitals went up dramatically from 5.65% to 16.92% in 2013 (Table 6). The main reason for this was the increase in the number of private hospitals. There was a slight decrease from 15.09% to 13.26% of EDV in university hospitals (Figure 2).

This rate didn't change dramatically in the hospitals of the Ministry of Health in Istanbul during the same years and was approximately 25% which went up to 26.83% in 2013. A decrease was seen for the same years in EDV in the university hospitals and private hospitals of Istanbul (Table 7, 8, 9). The reason may be the number of private hospitals increased more rapidly in Anatolia rather than in Istanbul.

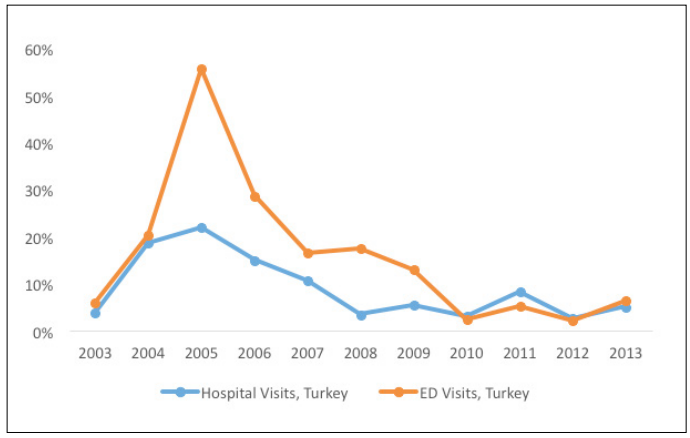


**Figure 1.** Annual Rate of Increase in Hospital and Emergency Department visits, Turkey

**Table 1.** Number of Doctor Visits per Capita, Turkey 2002-2013

| Type of institution | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary care | 1.10 | 1.30 | 1.30 | 1.70 | 1.90 | 2.20 | 2.50 | 2.80 | 2.70 | 3.30 | 3.10 | 2.90 |
| Secondary and Tertiary Care | 2.00 | 2.10 | 2.40 | 3.00 | 3.40 | 3.90 | 4.20 | 4.50 | 4.60 | 4.90 | 5.10 | 5.30 |
| Emergency Department | 0.29 | 0.31 | 0.38 | 0.58 | 0.74 | 0.86 | 0.97 | 1.11 | 1.14 | 1.23 | 1.24 | 1.31 |
| Total | 3.10 | 3.40 | 3.70 | 4.70 | 5.30 | 6.10 | 6.70 | 7.30 | 7.30 | 8.20 | 8.200 | 8.20 |
| Source: T.C. Department of Statistics, Analytics and Information Systems, Ministry of Health, Turkey | | | | | | | | | | | | |

**Table 2.** Number of Emergency Department Visits Per Capita, Turkey 2002-2013

| Type of institution | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ministry of Health | 0.27 | 0.28 | 0.34 | 0.52 | 0.67 | 0.77 | 0.90 | 1.00 | 1.01 | 1.04 | 1.05 | 1.11 |
| University | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.02 | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 |
| Private | 0.005 | 0.01 | 0.02 | 0.04 | 0.05 | 0.06 | 0.04 | 0.08 | 0.09 | 0.14 | 0.13 | 0.15 |
| Total | 0.29 | 0.31 | 0.38 | 0.58 | 0.74 | 0.86 | 0.97 | 1.11 | 1.14 | 1.23 | 1.24 | 1.31 |
| Source: Department of Statistics, Analytics and Information Systems, Ministry of Health, Turkey | | | | | | | | | | | | |

**Table 3.** Number of Emergency Department Visits Per Capita, Istanbul 2002-2013

| Type of institution | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ministry of Health | 0.32 | 0.32 | 0.35 | 0.38 | 0.46 | 0.49 | 0.55 | 0.59 | 0.61 | 0.66 | 0.69 | 0.78 |
| University | 0.03 | 0.03 | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 | 0.05 | 0.04 | 0.04 | 0.04 | 0.04 |
| Private | 0.04 | 0.04 | 0.05 | 0.06 | 0.08 | 0.08 | 0.08 | 0.08 | 0.09 | 0.10 | 0.10 | 0.10 |
| Total | 0.38 | 0.39 | 0.42 | 0.47 | 0.57 | 0.60 | 0.67 | 0.72 | 0.74 | 0.81 | 0.83 | 0.92 |
| Source: Department of Statistics, Analytics and Information Systems, Ministry of Health, Turkey | | | | | | | | | | | | |

**Table 4.** Number of Hospital Visits, Turkey 2002-2013

| Type of institution | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ministry of Health | 109,793,128 | 113,934,570 | 135,169,229 | 164,758,149 | 189,422,137 | 209,630,370 | 216,723,712 | 228,279,139 | 235,172,924 | 254,342,943 | 260,974,401 | 274,200,691 |
| University | 8,823,361 | 9,637,840 | 10,685,275 | 11,493,879 | 12,588,872 | 15,025,079 | 18,290,800 | 19,364,865 | 20,098,754 | 24,437,107 | 27,080,436 | 29,985,697 |
| Private | 5,697,170 | 5,123,899 | 6,187,371 | 9,533,509 | 15,529,416 | 24,485,650 | 38,688,313 | 47,618,186 | 47,712,540 | 59,069,486 | 66,582,098 | 66,933,495 |
| Total | 124,313,659 | 128,696,309 | 152,041,875 | 185,785,537 | 217,540,425 | 249,141,099 | 273,702,825 | 295,262,190 | 302,984,218 | 337,849,536 | 354,636,935 | 371,119,883 |
| Source: Department of Statistics, Analytics and Information Systems, Ministry of Health, Turkey | | | | | | | | | | | | |

Based on the numbers retrieved from the DSS, the hospitals appertained to our union provided ambulatory care to 5,678,753 patients and emergency healthcare to 2,081,138 patients in 2013. Thus, the rate of EDV went in line with the average of Istanbul which is 27%. About 16% of the EDV in Istanbul and 19% of EDV to the hospitals of the Ministry of Health were made to the hospitals of our Union. 82% of the patients visiting to Emergency Department are the ones residing within our region.

When we look at the visits to the hospitals in general, approximately 74% of the patients in Turkey are cared by the hospitals of the Ministry of Health and this ratio is 66% in Istanbul (Table 10). In contrast, 85% of all emergency care throughout Turkey and Istanbul are provided by the hospitals of the Ministry of Health (Table 11, 12, 13, Figure 3). This shows that Turkish people prefer emergency healthcare in the hospitals of the Ministry of Health. We believe this is because people think they would have to make payment in private hospitals even though hospitals are not allowed to charge payment in ED and the illegal practices might be an issue.

As suggested in the statement published in 2009 by the Ministry of Health, a 3-level triage system has been commonly used in Turkey. In 3-level triage system, patients are categorized as emergent (red), urgent (yellow) and non-urgent (green). Emergency care was totally free until 2012 for all patients. Currently the care is free for patients triaged as yellow or red including those without health insurance. A small copayment is charged for green category patients.

In Turkey, Emergency Medicine was first accepted as an area of specialization in 1993. It is stated in the Public Hospitals Almanac that 1124 Emergency Medicine Specialists has served countrywide as of 2014. Because the number of specialists in emergency medicine is not adequate, emergency care is usually provided by the general practitioners in secondary level PH.

## CHARACTERISTICS OF EMERGENCY DEPARTMENT VISITS

### Number of Emergency Department Visits

In Table 14, we can see the hospital visit figures for 2014. Okmeydanı TH and İstinye PH's emergency visit rates are nearly 32% and abo-

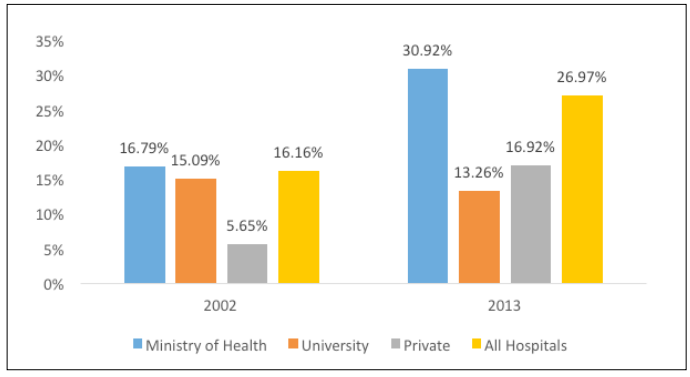


**Figure 2.** The Rate of Emergency Department Visits by Type of Institution, 2013

**Table 5.** Number of Emergency Department Visits, Turkey 2002-2013

| Type of institution | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ministry of Health | 18,433,610 | 19,512,127 | 23,468,744 | 36,520,482 | 46,984,687 | 54,699,892 | 64,227,137 | 72,508,339 | 74,248,061 | 78,037,743 | 79,672,782 | 84,778,686 |
| University | 1,331,356 | 1,186,226 | 1,318,029 | 1,464,477 | 1,627,196 | 1,807,996 | 2,008,885 | 2,232,094 | 2,786,125 | 3,330,028 | 3,615,961 | 3,976,656 |
| Private | 321,929 | 721,243,16 | 1,559,430,75 | 2,835,328,64 | 3,343,846,67 | 3,943,567,75 | 4,650,849,18 | 5,484,982 | 6,961,616 | 10,445,865 | 10,202,652 | 11,325,829 |
| Total | 20,086,895 | 21,419,596 | 26,346,204 | 40,820,287 | 51,955,730 | 60,451,456 | 70,886,871 | 80,225,415 | 83,995,802 | 91,813,636 | 93,491,395 | 100,081,171 |
| Source: Department of Statistics, Analytics and Information Systems, Ministry of Health, Turkey | | | | | | | | | | | | |

**Table 6.** Rate of Emergency Department Visits within Total Hospital Visits (%), Turkey 2002-2013

| Type of institution | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ministry of Health | 16.79 | 17.13 | 17.36 | 22.17 | 24.80 | 26.09 | 29.64 | 31.76 | 31.57 | 30.68 | 30.53 | 30.92 |
| University | 15.09 | 12.31 | 12.34 | 12.74 | 12.93 | 12.03 | 10.98 | 11.53 | 13.86 | 13.63 | 13.35 | 13.26 |
| Private | 5.65 | 14.08 | 25.20 | 29.74 | 21.53 | 16.11 | 12.02 | 11.52 | 14.59 | 17.68 | 15.32 | 16.92 |
| All Hospitals | 16.16 | 16.64 | 17.33 | 21.97 | 23.88 | 24.26 | 25.90 | 27.17 | 27.72 | 27.18 | 26.36 | 26.97 |

**Table 7.** Number of Hospital Visits, Istanbul 2002-2013

| Type of institution | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ministry of Health | 12,822,539 | 13,784,321 | 16,176,027 | 17,856,927 | 21,935,848 | 24,671,874 | 27,700,129 | 31,336,312 | 33,798,880 | 37,000,862 | 37,684,468 | 41,345,527 |
| University | 1,175,894 | 1,258,299 | 1,253,666 | 1,382,415 | 1,411,665 | 1,819,364 | 2,344,067 | 2,768,670 | 2,877,526 | 3,671,761 | 3,894,829 | 4,116,281 |
| Private | 3,168,623 | 3,325,269 | 3,491,835 | 5,062,583 | 6,708,973 | 9,175,497 | 12,653,780 | 14,094,659 | 13,469,869 | 15,304,323 | 15,464,378 | 17,035,750 |
| Total | 17,167,056 | 18,367,889 | 20,921,528 | 24,301,925 | 30,056,486 | 35,666,735 | 42,697,976 | 48,199,641 | 50,146,275 | 55,976,946 | 57,043,675 | 62,497,558 |
| Source: Department of Statistics, Analytics and Information Systems, Ministry of Health, Turkey | | | | | | | | | | | | |

**Table 8.** Number of Emergency Department Visits, Istanbul 2002-2013

| Type of institution | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ministry of Health | 3,205,635 | 3,446,080 | 4,044,007 | 4,464,232 | 5,483,962 | 6,167,969 | 6,925,032 | 7,653,505 | 8,070,829 | 8,986,426 | 9,590,983 | 11,093,825 |
| University | 258,697 | 276,826 | 275,807 | 304,131 | 310,566 | 400,260 | 515,695 | 611,140 | 582,071 | 606,722 | 621,384 | 505,080 |
| Private | 380,235 | 465,538 | 628,530 | 759,387 | 939,256 | 1,009,305 | 1,012,302 | 1,080,718 | 1,129,089 | 1,414,802 | 1,330,601 | 1,414,717 |
| Total | 3,844,566 | 4,188,444 | 4,948,344 | 5,527,751 | 6,733,785 | 7,577,533 | 8,453,029 | 9,345,363 | 9,781,989 | 11,007,950 | 11,542,968 | 13,013,622 |
| Source: Department of Statistics, Analytics and Information Systems, Ministry of Health, Turkey | | | | | | | | | | | | |

**Table 9.** Rate of Emergency Department Visits within Total Hospital Visits (%), Istanbul 2002-2013

| Type of institution | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ministry of Health | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 24.42 | 23.88 | 24.29 | 25.45 | 26.83 |
| University | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 | 22.07 | 20.23 | 16.52 | 15.95 | 12.27 |
| Private | 12.00 | 14.00 | 18.00 | 15.00 | 14.00 | 11.00 | 8.00 | 7.67 | 8.38 | 9.24 | 8.60 | 8.30 |
| All Hospitals | 22.40 | 22.80 | 23.65 | 22.75 | 22.40 | 21.25 | 19.80 | 19.39 | 19.51 | 19.67 | 20.24 | 20.82 |

**Table 10.** Distribution of Hospital Visits by Type of Institution (%). Turkey 2002-2013

| Type of institution | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ministry of Health | 88.32 | 88.53 | 88.90 | 88.68 | 87.07 | 84.14 | 79.18 | 77.31 | 77.62 | 75.28 | 73.59 | 73.88 |
| University | 7.10 | 7.49 | 7.03 | 6.19 | 5.79 | 6.03 | 6.68 | 6.56 | 6.63 | 7.23 | 7.64 | 8.08 |
| Private | 4.58 | 3.98 | 4.07 | 5.13 | 7.14 | 9.83 | 14.14 | 16.13 | 15.75 | 17.48 | 18.77 | 18.04 |
| All Hospitals | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

**Table 11.** Distribution of Emergency Department Visits by Type of Institution (%). Turkey 2002-2013

| Type of institution | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ministry of Health | 91.77 | 91.09 | 89.08 | 89.47 | 90.43 | 90.49 | 90.61 | 90.38 | 88.39 | 85.00 | 85.22 | 84.71 |
| University | 6.63 | 5.54 | 5.00 | 3.59 | 3.13 | 2.99 | 2.83 | 2.78 | 3.32 | 3.63 | 3.87 | 3.97 |
| Private | 1.60 | 3.37 | 5.92 | 6.95 | 6.44 | 6.52 | 6.56 | 6.84 | 8.29 | 11.38 | 10.91 | 11.32 |
| All Hospitals | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

**Table 12.** Distribution of Hospital Visits by Type of Institution (%), Istanbul 2002-2013

| Type of institution | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ministry of Health | 74.69 | 75.05 | 77.32 | 73.48 | 72.98 | 69.17 | 64.87 | 65.01 | 67.40 | 66.10 | 66.06 | 66.16 |
| University | 6.85 | 6.85 | 5.99 | 5.69 | 4.70 | 5.10 | 5.49 | 5.74 | 5.74 | 6.56 | 6.83 | 6.59 |
| Private | 18.46 | 18.10 | 16.69 | 20.83 | 22.32 | 25.73 | 29.64 | 29.24 | 26.86 | 27.34 | 27.11 | 27.26 |
| All Hospitals | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

**Table 13.** Distribution of Emergency Department Visits by Type of Institution (%), Istanbul 2002-2013

| Type of institution | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ministry of Health | 83.38 | 82.28 | 81.72 | 80.76 | 81.44 | 81.40 | 81.92 | 81.90 | 82.51 | 81.64 | 83.09 | 85.25 |
| University | 6.73 | 6.61 | 5.57 | 5.50 | 4.61 | 5.28 | 6.10 | 6.54 | 5.95 | 5.51 | 5.38 | 3.88 |
| Private | 9.89 | 11.11 | 12.70 | 13.74 | 13.95 | 13.32 | 11.98 | 11.56 | 11.54 | 12.85 | 11.53 | 10.87 |
| All Hospitals | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

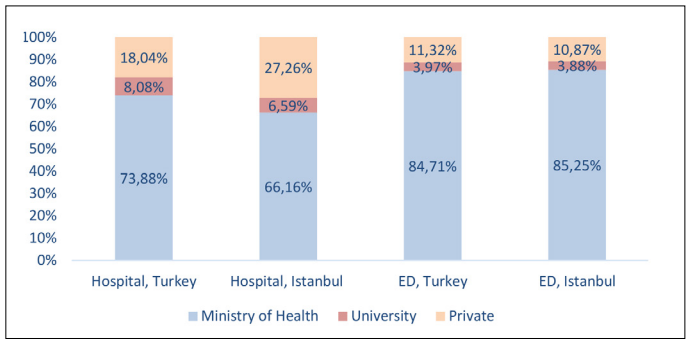


**Figure 3.** Distribution of Total Hospital and Emergency Department Visits by type of Institution, 2013

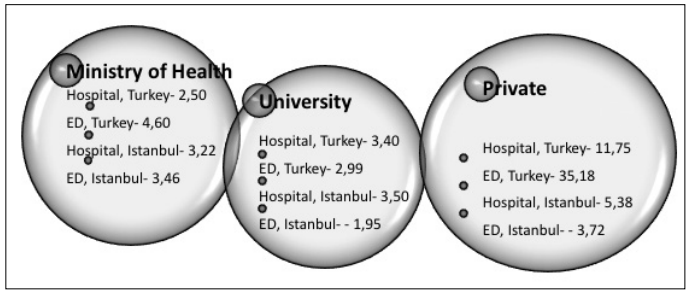


**Figure 4.** How many times the visits increased by between 2002 and 2013

ve the average. Kağıthane PH has the lowest emergency visit rate with 20.72%. Easy access to the Okmeydanı TH and the hospital`s comprehensive services in all medical specialties lower Kağıthane PH`s ED volume. İstinye PH has high EDV numbers because of the comprehensive medical services offered which is superior to the other hospitals in Sarıyer district. Statistically, there isn`t any significant difference in the rate of EDV between TH and secondary care hospitals (Mann-Whitney'u test p: 0.724, p>0.05).

The visit numbers indicates that in general distribution of total hospital visits and EDV amongst the hospitals is similar (Table 15). With total hospital visit rate of 29.6% and EDV rate of 34.16%, Okmeydanı TH has the highest patient volume.

According to the data obtained from the DSS, triage rates between our hospitals vary considerably (Table 16). Although there is no requirement to triage in the ED which are registered as first level, triage is performed because of the hospital`s legal obligation to collect copayment from green area patients. Generally, nearly 25% of the patients are served in the green area. There are significant differences in red and yellow areas between the hospitals because triage in ED is a relatively new practice in Turkey and triage training is still an ongoing process. Another reason is erroneous record keeping which is a widespread problem that affects all the medical information entered in HMIS.

Consequently, life-threatening cases which are intervened in the red area might get recorded as yellow. Another reason is especially in secondary care public hospitals, only the patients who are transferred to ED with an ambulance are accepted as red area patients. We see that Okmeydanı TH has a similar practice in its triage recording.

The studies conducted in the US, Australia and Europe shows that patient whose severity is triaged as red is between 10-20% (1-3). In this regard, Şişli Hamidiye Etfal TH and GOP Taksim TH can be shown as good examples both in proper triage practices and accurate record keeping.

**Table 14.** Number of Total Hospital Visits and Emergency Department Visits By the Hospital and rate of ED visits (%), BKHB 2014

| | Total Hospital Visits | ED Visits | % |
|---|---|---|---|
| Total | 8,050,852 | 2,226,780 | 27.66 |
| Teaching Hospitals | 5,284,182 | 1,496,235 | 28.32 |
| Okmeydanı | 2,382,784 | 760,773 | 31.93 |
| Şişli Hamidiye Etfal | 1,609,035 | 422,903 | 26.28 |
| GOP Taksim | 1,292,363 | 312,559 | 24.19 |
| Secondary Care Hospitals | 2,766,670 | 730,545 | 26.41 |
| Eyüp | 1,001,734 | 255,219 | 25.48 |
| İstinye | 675,544 | 215,318 | 31.87 |
| Kâğıthane | 704,337 | 145,912 | 20.72 |
| Sarıyer İsmail Akgün | 385,055 | 114,096 | 29.63 |
| *Total visits include outpatient and ED visits | | | |

**Table 15.** Distribution of Outpatient and Emergency Department visits by the Hospital (%), BKHB 2014

| | Total % | Total % | ED Visits % | ED Visits% |
|---|---|---|---|---|
| All Hospitals | 100.00 | | 100 | |
| Teaching Hospitals | 65.64 | 100.00 | 67.19 | 100.00 |
| Okmeydanı | 29.60 | 45.09 | 34.16 | 50.85 |
| Şişli Hamidiye Etfal | 19.99 | 30.45 | 18.99 | 28.26 |
| GOP Taksim | 16.05 | 24.46 | 14.04 | 20.89 |
| Secondary Care Hospitals | 34.36 | 100.00 | 32.81 | 100.00 |
| Eyüp | 12.44 | 36.21 | 11.46 | 34.94 |
| İstinye | 8.39 | 24.42 | 9.67 | 29.47 |
| Kâğıthane | 8.75 | 25.46 | 6.55 | 19.97 |
| Sarıyer İsmail Akgün | 4.78 | 13.92 | 5.12 | 15.62 |

## Timing of Emergency Department Visits

When the seasonal distribution of EDV is studied, a slight increase during winter months and a slight decrease during summer months are noticed, although there is no significant difference in seasonal distribution (Table 17). Only in Kağıthane PH a dramatic decrease in EDV during summer months is observed. The same situation applies to the outpatient visits and this is because residents of the region generally spend summer months outside of Istanbul. On a monthly basis, the highest EDV volume is in January nearly in all hospitals (Table 18). February and July are noted as the months with the lowest visit rates.

Mean value of EDV monthly distribution rate in TH and PH are 8.334% and 8.333% respectively. There is no significant difference in mean values of the monthly distribution rate between TH and PH. (Independent samples T test: p: 0.998, p> 0.05)

Daily patient distribution is equal in terms of total patient numbers but there is a slight increase on Mondays. Because EDV during

weekends while the outpatient clinics are closed don't increase and it rises slightly on Mondays, we think that the patients are using the ED like the regular outpatient clinics. When the individual hospitals are analyzed, there is a significant increase in visits in Kağıthane PH and decrease in İstinye PH on weekends (Table 19).

In all hospitals, the visits are the lowest at 5:00 am. The visits are the highest in İstinye PH at 14:00, in Sarıyer PH at 13:00, and in others at 21:00 (Table 20). We think that insufficient specialist and outpatient clinic numbers in Sarıyer district cause the patients to visit the ED. To meet this demand, the construction of a new hospital building is underway.

When the patient volume between 05:00 am and 21:00 is compared, a significant difference is observed ("Mann-Whitney'u" test: p: 0.003, p<0.05). However, there isn`t any statistically significant difference on the highest and the lowest visit hours between TH and PH (Mann-Whitney'u test for the lowest EDV hour between 05:00 am - 06:00 am: p: 0.157, p>0.05. Mann-Whitney U test for the highest EDV hour between 21:00-22:00: p: 0.724, p>0.05). The rapidly decreasing visit numbers after 21:00 start to increase again after 6:00 am. Increase in visits especially between 20:00 and 23:00 suggests that the number of doctors and nurses has to be increased during this time and the concept of flexible working hours is a suitable solution for ED.

EDV hourly distribution shows that the visits during working hours (8:00 am to 17:00 pm) are significantly higher in İstinye and Sarıyer PH. In Kağıthane PH visits outside of working hours are higher (Table 20). In all of our hospitals the working hour EDV rate is 47,35%; outside of working hours EDV rate is 52,65% on average. This doesn`t have any statistical significance (Mann-Whitney'u test: p: 0.277, p>0.05).

If the triage areas are assessed with their hourly distribution rates, in green area the visits are higher than other areas during working hours and the highest during lunch hours. This shows that the patients who can`t get an appointment turn to ED for their general healthcare needs. In red and yellow areas the highest visit rates are at 21:00 and the lowest are at 05:00 am (Figure 5).

The green area patient rates in Sarıyer and İstinye PH, are higher than all others, and this increases working hour visit numbers. At the same time, Kağıthane PH with the lowest green area visits amongst the PH, receives 60% of its visits outside of working hours.

## Emergency Department Visits, Age and Gender

When the age of patients who visit ED and the age of general population are compared (Figure 6, 7) the first thing that comes

**Table 16.** Distribution of Emergency Department Visits by Triage Category (%), BKHB 2014

| | Level of ED | Red | Yellow | Green | Total |
|---|---|---|---|---|---|
| All Hospitals | | 4.48 | 71.60 | 23.92 | 100.00 |
| Teaching Hospitals | | 6.57 | 71.83 | 21.60 | 100.00 |
| Okmeydanı | 3. | 1.49 | 76.92 | 21.59 | 100.00 |
| Şişli Hamidiye Etfal | 3. | 21.26 | 59.39 | 19.35 | 100.00 |
| GOP Taksim | 2. | 9.51 | 67.41 | 23.08 | 100.00 |
| Secondary Care Hospitals | | 0.46 | 71.15 | 28.39 | 100.00 |
| Eyüp | 2. | 1.06 | 76.08 | 22.86 | 100.00 |
| İstinye | 2. | 0.16 | 66.60 | 33.24 | 100.00 |
| Kâğıthane | 1. | 0.07 | 78.06 | 21.87 | 100.00 |
| Sarıyer İsmail Akgün | 1. | 0.03 | 60.96 | 39.01 | 100.00 |

**Table 17.** Distribution of Emergency Department Visits by Season (%), BKHB 2014

| | Spring | Summer | Fall | Winter | Total |
|---|---|---|---|---|---|
| All Hospitals | 25.55 | 23.67 | 24.30 | 26.48 | 100.00 |
| Teaching Hospitals | 25.41 | 24.04 | 24.48 | 26.07 | 100.00 |
| Okmeydanı | 25.78 | 23.31 | 23.59 | 27.31 | 100.00 |
| Şişli Hamidiye Etfal | 25.33 | 24.52 | 24.91 | 25.24 | 100.00 |
| GOP Taksim | 24.61 | 25.18 | 26.06 | 24.15 | 100.00 |
| Secondary Care Hospitals | 25.83 | 22.92 | 23.93 | 27.31 | 100.00 |
| Eyüp | 26.44 | 23.50 | 22.40 | 27.67 | 100.00 |
| İstinye | 25.94 | 23.56 | 23.81 | 26.69 | 100.00 |
| Kâğıthane | 24.27 | 20.17 | 26.85 | 28.71 | 100.00 |
| Sarıyer İsmail Akgün | 26.28 | 23.93 | 23.88 | 25.91 | 100.00 |

**Table 18.** Distribution of Emergency Department Visits by Month (%), BKHB 2014

| | Jan | Feb | Mar | Apr | May | Jun | July | Aug | Sep | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All Hospitals | 10.33 | 7.34 | 8.58 | 8.41 | 8.56 | 8.16 | 7.32 | 8.2 | 7.93 | 8.38 | 7.99 | 8.8 | 100.00 |
| Teaching Hospitals | 10.07 | 7.33 | 8.43 | 8.40 | 8.59 | 8.34 | 7.44 | 8.26 | 8.00 | 8.41 | 8.07 | 8.67 | 100.00 |
| Okmeydanı | 10.82 | 7.68 | 8.66 | 8.48 | 8.64 | 8.27 | 7.22 | 7.81 | 7.62 | 8.00 | 7.97 | 8.82 | 100.00 |
| Şişli Hamidiye Etfal | 10.13 | 7.12 | 8.32 | 8.46 | 8.54 | 8.30 | 7.60 | 8.62 | 8.15 | 8.84 | 7.91 | 7.98 | 100.00 |
| GOP Taksim | 8.17 | 6.75 | 8.02 | 8.09 | 8.51 | 8.56 | 7.76 | 8.86 | 8.70 | 8.83 | 8.53 | 9.23 | 100.00 |
| Secondary Care Hospitals | 10.86 | 7.38 | 8.90 | 8.44 | 8.50 | 7.78 | 7.07 | 8.07 | 7.79 | 8.31 | 7.83 | 9.07 | 100.00 |
| Eyüp | 11.56 | 7.54 | 8.85 | 8.56 | 9.03 | 8.36 | 7.07 | 8.06 | 7.52 | 7.77 | 7.11 | 8.56 | 100.00 |
| İstinye | 10.24 | 7.50 | 9.12 | 8.48 | 8.34 | 7.94 | 7.36 | 8.27 | 7.78 | 8.34 | 7.69 | 8.94 | 100.00 |
| Kâğıthane | 10.82 | 7.01 | 8.49 | 8.03 | 7.75 | 6.30 | 6.53 | 7.34 | 8.14 | 9.19 | 9.52 | 10.88 | 100.00 |
| Sarıyer İsmail Akgün | 10.47 | 7.27 | 9.09 | 8.63 | 8.56 | 8.10 | 7.20 | 8.63 | 7.97 | 8.36 | 7.55 | 8.16 | 100.00 |

**Table 19.** Distribution of Emergency Department Visits by Day (%), BKHB 2014

| | Monday | Tuesday | Wednesday | Thursday | Friday | Weekday | Saturday | Sunday | Weekend | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| All Hospitals | 15.11 | 14.04 | 14.28 | 13.89 | 14.05 | 71.37 | 14.27 | 14.36 | 28.63 | 100.00 |
| Teaching Hospitals | 15.20 | 14.01 | 14.27 | 13.76 | 13.91 | 71.15 | 14.23 | 14.62 | 28.85 | 100.00 |
| Okmeydanı | 15.45 | 13.99 | 14.28 | 13.82 | 14.03 | 71.57 | 13.99 | 14.44 | 28.43 | 100.00 |
| Şişli Hamidiye Etfal | 14.94 | 13.89 | 14.22 | 13.60 | 13.79 | 70.44 | 14.56 | 15.00 | 29.56 | 100.00 |
| GOP Taksim | 14.95 | 14.22 | 14.30 | 13.81 | 13.78 | 71.06 | 14.36 | 14.57 | 28.93 | 100.00 |
| Secondary Care Hospitals | 14.92 | 14.09 | 14.31 | 14.17 | 14.34 | 71.83 | 14.34 | 13.83 | 28.17 | 100.00 |
| Eyüp | 14.69 | 14.03 | 14.02 | 13.82 | 14.09 | 70.65 | 14.30 | 15.05 | 29.35 | 100.00 |
| İstinye | 16.29 | 14.83 | 15.38 | 15.20 | 15.44 | 77.14 | 11.69 | 11.17 | 22.86 | 100.00 |
| Kâğıthane | 13.24 | 13.10 | 13.10 | 13.33 | 13.35 | 66.12 | 17.77 | 16.12 | 33.89 | 100.00 |
| Sarıyer İsmail Akgün | 14.99 | 14.08 | 14.47 | 14.11 | 14.08 | 71.73 | 15.07 | 13.21 | 28.28 | 100.00 |

**Table 20.** Distribution of Emergency Department Visits by Hour (%), BKHB 2014

| | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | WH | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | OWH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All Hospitals | 3.26 | 5.02 | 5.57 | 5.64 | 5.01 | 5.92 | 6.30 | 5.59 | 5.04 | 47.35 | 4.66 | 4.86 | 5.79 | 6.60 | 6.92 | 6.23 | 4.89 | 3.57 | 2.19 | 1.44 | 1.13 | 0.92 | 0.80 | 0.96 | 1.69 | 52.65 |
| Teaching Hospitals | 2.94 | 4.59 | 5.33 | 5.50 | 5.03 | 5.79 | 6.21 | 5.53 | 4.97 | 45.90 | 4.63 | 4.79 | 5.76 | 6.62 | 6.99 | 6.43 | 5.14 | 3.81 | 2.39 | 1.60 | 1.26 | 1.05 | 0.89 | 1.03 | 1.70 | 54.09 |
| Okmeydanı | 3.13 | 4.86 | 5.54 | 5.56 | 5.16 | 5.95 | 6.43 | 5.67 | 5.02 | 47.32 | 4.62 | 4.80 | 5.91 | 6.71 | 7.07 | 6.32 | 4.76 | 3.60 | 2.14 | 1.39 | 1.03 | 0.85 | 0.78 | 0.95 | 1.75 | 52.68 |
| Şişli Hamidiye Etfal | 2.81 | 4.35 | 5.13 | 5.31 | 4.91 | 5.62 | 5.99 | 5.46 | 5.14 | 44.72 | 4.82 | 4.75 | 5.35 | 6.15 | 6.50 | 6.09 | 5.09 | 4.16 | 2.98 | 2.08 | 1.70 | 1.43 | 1.14 | 1.23 | 1.80 | 55.27 |
| GOP Taksim | 2.89 | 4.57 | 5.33 | 5.62 | 5.03 | 5.80 | 6.21 | 5.46 | 4.76 | 45.67 | 4.46 | 4.82 | 6.01 | 7.00 | 7.41 | 6.88 | 5.57 | 3.67 | 2.05 | 1.34 | 1.04 | 0.87 | 0.75 | 0.90 | 1.55 | 54.32 |
| Secondary Care Hospitals | 3.74 | 5.43 | 5.66 | 5.70 | 4.82 | 5.85 | 6.19 | 5.50 | 5.20 | 48.09 | 4.75 | 4.93 | 5.82 | 6.62 | 6.96 | 6.21 | 4.95 | 3.40 | 1.97 | 1.27 | 1.01 | 0.76 | 0.70 | 0.90 | 1.67 | 51.91 |
| Eyüp | 3.26 | 5.16 | 5.28 | 5.35 | 4.76 | 5.61 | 6.03 | 5.21 | 4.70 | 45.36 | 4.51 | 5.01 | 6.26 | 7.43 | 7.71 | 6.57 | 5.02 | 3.48 | 2.05 | 1.30 | 1.06 | 0.81 | 0.73 | 0.98 | 1.71 | 54.63 |
| İstinye | 5.09 | 7.23 | 7.39 | 7.15 | 4.96 | 7.18 | 7.73 | 6.54 | 4.68 | 57.95 | 4.03 | 4.33 | 5.00 | 5.59 | 5.80 | 4.98 | 3.65 | 2.42 | 1.43 | 0.93 | 0.75 | 0.56 | 0.51 | 0.62 | 1.47 | 42.07 |
| Kâğıthane | 2.88 | 3.89 | 4.32 | 4.60 | 4.75 | 4.75 | 4.80 | 4.75 | 6.23 | 40.97 | 5.72 | 5.44 | 6.19 | 6.83 | 7.38 | 7.07 | 6.18 | 4.31 | 2.42 | 1.59 | 1.21 | 0.92 | 0.86 | 1.10 | 1.82 | 59.04 |
| Sarıyer İsmail Akgün | 3.90 | 6.72 | 6.84 | 6.53 | 5.26 | 6.94 | 6.72 | 6.01 | 5.57 | 54.49 | 5.12 | 5.62 | 6.00 | 6.09 | 5.98 | 4.95 | 3.61 | 2.45 | 1.37 | 0.82 | 0.61 | 0.44 | 0.41 | 0.64 | 1.41 | 45.52 |
| Red | 2.78 | 4.17 | 5.14 | 5.34 | 5.01 | 5.81 | 6.13 | 5.58 | 5.15 | 45.11 | 4.65 | 4.62 | 5.34 | 6.27 | 6.52 | 6.16 | 5.10 | 4.18 | 2.88 | 2.12 | 1.65 | 1.35 | 1.16 | 1.22 | 1.67 | 54.89 |
| Yellow | 3.27 | 4.91 | 5.39 | 5.45 | 4.97 | 5.66 | 6.03 | 5.41 | 4.94 | 46.03 | 4.60 | 4.82 | 5.82 | 6.72 | 7.11 | 6.45 | 5.12 | 3.75 | 2.29 | 1.49 | 1.17 | 0.94 | 0.84 | 1.03 | 1.82 | 53.97 |
| Green | 3.50 | 5.47 | 6.06 | 6.06 | 5.13 | 6.67 | 7.08 | 6.01 | 5.21 | 51.19 | 4.78 | 5.01 | 6.01 | 6.64 | 6.81 | 5.81 | 4.38 | 3.04 | 1.57 | 1.00 | 0.72 | 0.58 | 0.51 | 0.64 | 1.31 | 48.81 |

to attention is that the rate of patient within 5-9 and 10-14 years groups are lower than the proportion they represent in the general population. The 0-4 years group has the highest visit (11.39%) and represents 8.1% of the population. Apart from these exceptions age distribution of the patients and the population does not show a big difference.

The patients between the ages of 25 and 44 are the biggest patient group with 34.35% of visits (Table 21). If we look at the data from the US or Australia, the 25-44 years group has the highest visit volume as well. Generally in these two countries patient visits under the age of 45 are lower than the BKHB hospitals, especially the 65+ patient visits are significantly higher. This situation might be explained with their population structure. According to the World Bank data the 65+ years group is 14.9% in the US and Australia, while it is 7.69% in Turkey. In summary, age and gender distribution of the patient population who visit ED is in line with the country`s general age and gender distribution with a few exceptions.

If we consider all the patients who visit ED, the distribution between male and female patients is nearly equal. Until the ages of 35 to 39, male patients dominate but in 35+ years, females have a higher visit rate. Especially in under 15 years group male patients have higher visit rates than females; 26.15% of males are under 15 while the same figure is 20.78% for females (Table 22).

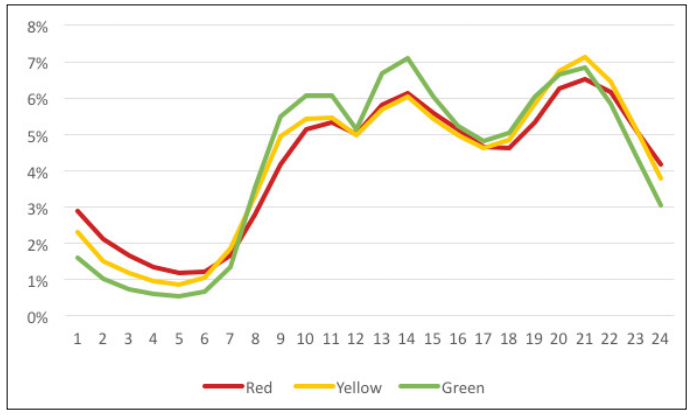


**Figure 5.** Distribution of Emergency Department hourly visit rate based on triage category, BKHB 2014

The patients who are between the ages of 1 to 14 have the highest rate on red area visits (Table 23). In all visits the rate of 1-14 years group is 21.87% but within the red area the rate is 31.21%. Again, the 65+ patient rate is higher than the other age groups in red area. Female patients have a 51.4% red area visit rate. But in red area visits for ages under 15, male patient rate is higher than the females.

In green and yellow areas patients between the ages of 25 and 44 has the highest visit rate regardless of gender. Again, male patients under the age of 15 have a higher rate than the females. Another feature is that the 65+ years patient rate has a lower value in green area than in red and yellow areas.

## EMERGENCY DEPARTMENT CAPACITY

The capacity and the quality of our hospital services depend on the adequacy of the equipment and human resources. In an ED; doctor, nurse and bed numbers are the most important resources affecting number of patients that can be properly treated. There isn't any planned appointment in ED therefore no matter how high the patient volume, the care has to be delivered with the available resources. Because of the lack of sufficient number of healthcare staff and equipment, the waiting times might be higher and the record keeping might be compromised. Moreover because of the limited patient time, doctors and nurses might not properly deliver the necessary care. Therefore it is extremely important that there are enough resources to meet the service demand in ED.

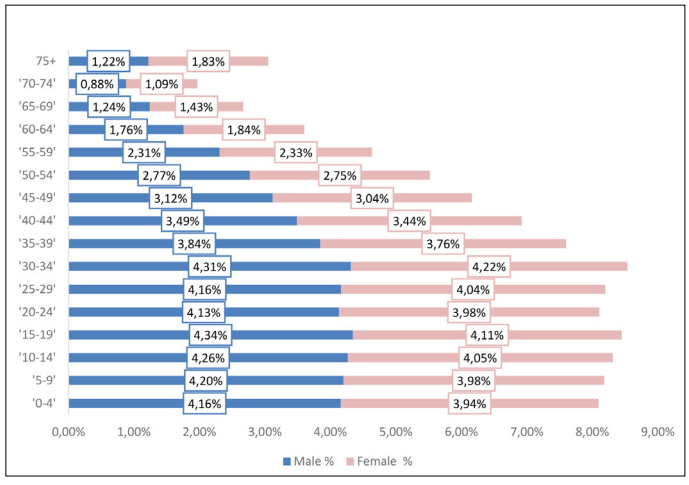


**Figure 6.** Distribution of Population by Age and Gender, Turkey 2013

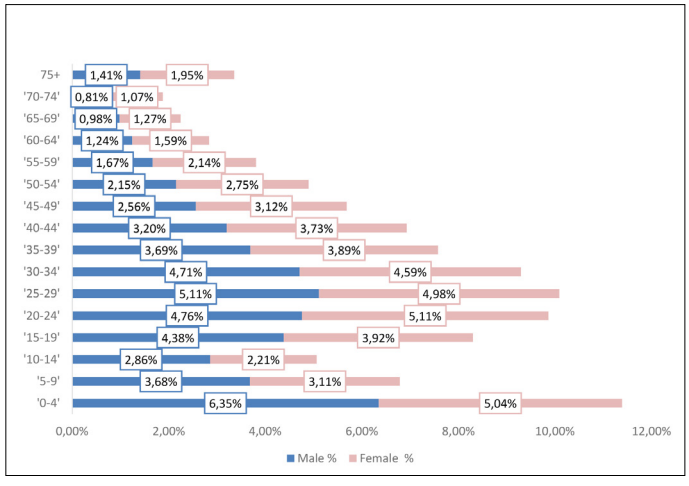


**Figure 7.** Distribution of Emergency Department Visits by Age and Gender, BKHB 2014

Table 24, 25 and 26 show patient volumes per doctor, nurse and bed and the average time allocated to each patient daily in our ED. If we assume maximum of an hour break time within 8 work hours, a doctor can allocate 8 minutes to each patient on average and a nurse can spend 13 minutes on each patient. But in ED, the visit volume is fluctuating dramatically depending on the time of the day and the triage area. The size of workforce also changes depending on the triage area and the time of the day. Therefore it is important to emphasize that the patient time for a doctor or a nurse depends on the ED overcrowding, triage area and the visit time. The numbers in related tables are average values and give a general idea about the time that can be spared for a patient.

There might be shortenings or prolongation in bed turnover time observed in Table26 because of the same reasons. But generally, the total length of stay in emergency depending on the triage area shown in Table 27 and average bed turnover rates shown in Table 26 are coherent. But the vast difference between length of stay in Şişli Hamidiye Etfal TH (red area 91 minutes, yellow area 187 minutes, green area 169 minutes) and bed turnover rate (76 minutes) suggests that the bed capacity has to be increased in this hospital

If we examine the relation between daily EDV numbers and the number of doctors, nurses and beds, the correlation factor (r)`s significance value (p) is 0.000 for the doctors; 0.003 for the nurses and 0.001 for the beds with $p<0.05$. Therefore the daily EDV numbers and the number of doctors, nurses, and beds are strongly correlated. According to the "Pearson Correlation" r value there is a strong relation of 97.3% between daily EDV and the number of doctors, 92.72% between daily EDV and the number of nurses, 95.3% between daily EDV and number of beds.

## QUALITY MEASUREMENT IN EMERGENCY DEPARTMENT

The concept of quality can be summarized as the capacity of the product or service to meet customer expectations but it has different criteria and measurement methods for each sector. Defining and measuring quality of healthcare is quite difficult. You produce service for people who entrust you with their lives and standardization of services aren`t always possible.

Thanks to the Healthcare Transformation Program, reforms regarding quality in healthcare gained momentum for the past 10 years.

**Table 21.** International Comparison of Emergency Department Visits by Age (%)

| | BKHB | USA(2) | Australia(3) |
|---|---|---|---|
| Total | 100.00 | 100.00 | 100.00 |
| Under 15 Years | 23.45 | 18.20 | 21.66 |
| 15-24 Years | 17.64 | 16.30 | 15.14 |
| 25-44 Years | 34.35 | 28.70 | 25.48 |
| 45-64 Years | 17.19 | 21.90 | 18.91 |
| 65 Years and Over | 7.37 | 14.90 | 18.81 |

**Table 22.** Number and Distribution of Emergency Department Visits by Age And Gender (%), BKHB 2014

| | Number of Visits | % | |
|---|---|---|---|
| Total | 2,226,780 | 100.00 | |
| Female | 1,118,634 | 50.24 | |
| Male | 1,108,146 | 49.76 | |
| Under 15 Years | 522,269 | 23.45 | 100.00 |
| Under 1 Year | 35,323 | 1.59 | 6.76 |
| 1-4 Years | 212,847 | 9.56 | 40.75 |
| 5-14 Years | 274,099 | 12.31 | 52.48 |
| 15-24 Years | 392,792 | 17.64 | |
| 25-44 Years | 764,919 | 34.35 | |
| 45-64 Years | 382,791 | 17.19 | |
| 65 Years and Over | 164,009 | 7.37 | 100.00 |
| 65-74 Years | 91,779 | 4.12 | 55.96 |
| 75 Years and Over | 72,230 | 3.24 | 44.04 |
| Gender and Age | | | |
| Female | 1,118,634 | 100.00 | |
| Under 15 Years | 232,483 | 20.78 | 100.00 |
| Under 1 Year | 15,795 | 1.41 | 6.79 |
| 1-4 Years | 93,686 | 8.38 | 40.30 |
| 5-14 Years | 123,002 | 11.00 | 52.91 |
| 15-24 Years | 194,079 | 17.35 | |
| 25-44 Years | 386,476 | 34.55 | |
| 45-64 Years | 212,551 | 19.00 | |
| 65 Years and Over | 93,045 | 8.32 | 100.00 |
| 65-74 Years | 51,653 | 4.62 | 55.51 |
| 75 Years and Over | 41,392 | 3.70 | 44.49 |
| Male | 1,108,146 | 100.00 | |
| Under 15 Years | 289,786 | 26.15 | 100.00 |
| Under 1 Year | 19,528 | 1.76 | 6.74 |
| 1-4 Years | 119,161 | 10.75 | 41.12 |
| 5-14 Years | 151,097 | 13.64 | 52.14 |
| 15-24 Years | 198,713 | 17.93 | |
| 25-44 Years | 378,443 | 34.15 | |
| 45-64 Years | 170,240 | 15.36 | |
| 65 Years and Over | 70,964 | 6.40 | 100.00 |
| 65-74 Years | 40,126 | 3.62 | 56.54 |
| 75 Years and Over | 30,838 | 2.78 | 43.46 |

**Table 23.** Distribution of Emergency Department Visits by Age and Gender for each Triage Category (%), BKHB 2014

| | Red | Yellow | Green |
|---|---|---|---|
| Total | 100.00 | 100.00 | 100.00 |
| Female | 51.40 | 50.74 | 49.96 |
| Male | 48.60 | 49.26 | 50.04 |
| Under 15 Years | 32.28 | 23.85 | 24.51 |
| Under 1 Year | 1.07 | 1.32 | 1.38 |
| 1-4 Years | 14.98 | 9.79 | 9.94 |
| 5-14 Years | 16.23 | 12.74 | 13.19 |
| 15-24 Years | 13.76 | 17.05 | 19.20 |
| 25-44 Years | 26.95 | 33.77 | 35.70 |
| 45-64 Years | 14.55 | 17.56 | 15.76 |
| 65 Years and Over | 12.46 | 7.77 | 4.82 |
| 65-74 Years | 5.51 | 4.38 | 2.96 |
| 75 Years and Over | 6.95 | 3.40 | 1.86 |
| Gender and Age | | | |
| Female | 100.00 | 100.00 | 100.00 |
| Under 15 Years | 28.19 | 20.72 | 22.58 |
| Under 1 Year | 0.93 | 1.16 | 1.25 |
| 1-4 Years | 13.08 | 8.36 | 9.05 |
| 5-14 Years | 14.17 | 11.19 | 12.28 |
| 15-24 Years | 14.90 | 16.90 | 18.88 |
| 25-44 Years | 29.67 | 34.34 | 35.33 |
| 45-64 Years | 14.07 | 19.34 | 17.77 |
| 65 Years and Over | 13.17 | 8.70 | 5.44 |
| 65-74 Years | 5.39 | 4.87 | 3.33 |
| 75 Years and Over | 7.78 | 3.83 | 2.11 |
| Male | 100.00 | 100.00 | 100.00 |
| Under 15 Years | 36.61 | 27.08 | 26.45 |
| Under 1 Year | 1.22 | 1.48 | 1.51 |
| 1-4 Years | 16.99 | 11.26 | 10.83 |
| 5-14 Years | 18.39 | 14.34 | 14.10 |
| 15-24 Years | 12.56 | 17.21 | 19.52 |
| 25-44 Years | 24.07 | 33.17 | 36.07 |
| 45-64 Years | 15.06 | 15.73 | 13.76 |
| 65 Years and Over | 11.71 | 6.81 | 4.21 |
| 65-74 Years | 5.64 | 3.86 | 2.59 |
| 75 Years and Over | 6.07 | 2.95 | 1.61 |

Currently, the legislation on quality of healthcare which is updated on 06/08/2013 is in force and it regulates principles and procedures of healthcare quality standards based on patient safety, employee safety, patient satisfaction and employee satisfaction and the implementation of these standards. The legislation applies to all public and private healthcare institutions serving in the diagnosis, treatment and rehabilitation and preventive healthcare areas. The current Healthcare Services Quality Standards might be obtained from the website of Department of Quality and Accreditation in Healthcare. Almost all standards are focused on the structural qualification and adequacy of equipment in ED and there are li-

**Table 24.** Average Amount of Time a Doctor can Spend per Emergency Department visit, BKHB 2014

| | Number of Daily ED Visits (A) | Number of Doctors (B) | A/B | Patient Time/ Min |
|---|---|---|---|---|
| Total | 6,101 | 40.83 | 149 | 8 |
| Teaching Hospitals | 4,099 | 30.33 | 135 | 9 |
| Okmeydanı | 2,084 | 16.00 | 130 | 10 |
| Şişli Hamidiye Etfal | 1,159 | 10.33 | 112 | 11 |
| GOP Taksim | 856 | 4.00 | 214 | 6 |
| Secondary Care Hospitals | 2,001 | 10.50 | 191 | 7 |
| Eyüp | 699 | 3.50 | 200 | 6 |
| İstinye | 590 | 3.00 | 197 | 6 |
| Kâğıthane | 400 | 2.00 | 200 | 6 |
| Sarıyer İsmail Akgün | 313 | 2.00 | 156 | 8 |

* A: Number of daily ED visits is calculated by dividing total number of ED visits by 365.
* Patient time 21x60/(A/B)

**Table 25.** Average Amount of Time a Nurse can Spend per Emergency Department visit, BKHB 2014

| | Number of Daily ED Visits (A) | Number of Nurses (C ) | A/C | Patient Time /Min |
|---|---|---|---|---|
| Total | 6,101 | 64 | 95 | 13 |
| Teaching Hospitals | 4,099 | 47 | 87 | 14 |
| Okmeydanı | 2,084 | 20 | 104 | 12 |
| Şişli Hamidiye Etfal | 1,159 | 18 | 64 | 20 |
| GOP Taksim | 856 | 9 | 95 | 13 |
| Secondary Care Hospitals | 2,001 | 17 | 118 | 11 |
| Eyüp | 699 | 6 | 117 | 11 |
| İstinye | 590 | 5 | 118 | 11 |
| Kâğıthane | 400 | 4 | 100 | 13 |
| Sarıyer İsmail Akgün | 313 | 2 | 156 | 8 |

*Patient time 21x60/(A/C)

mited clinical quality criteria to evaluate results of healthcare delivery methods. Therefore criteria should be developed for the healthcare service providers to evaluate clinical quality without being limited to existing laws and systems should be designed to easily monitor these standards.

National Healthcare System (NHS) of UK defines quality in healthcare as "doing the right thing first time, every time". In this aspect quality healthcare services might be evaluated in 6 dimensions:

- Safe: Avoiding interventions which might harm the patient,
- Effective: Giving the right services to the right people, avoiding treatments and procedures which won`t benefit the patient,
- Patient centered: Giving priority to the needs, preferences and values of the patient,
- Timely: Shortening waiting times for the people who deliver and who receive healthcare,

**Table 26.** Number of Patients per Emergency Department Bed, BKHB 2014

| | Number of Daily ED Visits (A) | Number of Beds (D) | A/D | Bed Turnover Time / Min |
|---|---|---|---|---|
| Total | 6,101 | 243 | 25 | 57 |
| Teaching Hospitals | 4,099 | 170 | 24 | 60 |
| Okmeydanı | 2,084 | 76 | 27 | 53 |
| Şişli Hamidiye Etfal | 1,159 | 61 | 19 | 76 |
| GOP Taksim | 856 | 33 | 26 | 55 |
| Secondary Care Hospitals | 2,001 | 73 | 27 | 53 |
| Eyüp | 699 | 25 | 28 | 51 |
| İstinye | 590 | 22 | 27 | 54 |
| Kâğıthane | 400 | 20 | 20 | 72 |
| Sarıyer İsmail Akgün | 313 | 6 | 52 | 28 |

* Bed turnover time 24x60/ (A/D)

**Table 27.** Length of Stay in the Emergency Departments for each Triage Category (Minute), BKHB 2014

| | Red | Yellow | Green |
|---|---|---|---|
| All Hospitals | 89 | 73 | 62 |
| Teaching Hospitals | 84 | 109 | 96 |
| Okmeydanı | 99 | 69 | 57 |
| Şişli Hamidiye Etfal | 91 | 187 | 169 |
| GOP Taksim | 61 | 72 | 61 |
| Secondary Care Hospitals | 94 | 38 | 27 |
| Eyüp | 29 | 27 | 28 |
| İstinye | 191 | 63 | 41 |
| Kâğıthane | 143 | 34 | 23 |
| Sarıyer İsmail Akgün | 14 | 27 | 16 |

- Efficient: Reduction of waste,
- Equitable: Serve everyone equally.

For emergency healthcare, timeliness and effectiveness are the most important components of quality. To measure the timeliness of care delivery, detailed data which follow the patient`s ED journey is needed. In BKHB we continue with the development of detailed monitoring systems in our hospitals and currently we can observe timeliness of healthcare service ability from the patient`s total length of stay.

In our hospitals patient`s average length of stay in ED is between 1 and 1.5 hours, depending on the triage area. Şişli Hamidiye Etfal TH has the longest yellow area waiting time with 3 hours (Table 27). Average length of stay in the US and Australia is nearly 4 hours (2, 3). One reason that explains the short waiting time in our hospitals might be that the patients choose ED for their simple medical problems. Although our waiting time is short which shows our patients get served on time, we need to question whether we can spend enough time with each patient and make accurate diagnosis and treatment possible within this short time.

Red area average length of stay is 89 minutes (TH: 84 and PH: 94 minutes). İstinye PH and Kağıthane PH with their 191 and 143 minutes respectively, affect the PH average values significantly (Table 27). Average length of stay in the yellow area is 68 minutes (TH: 109 and PH: 38 minutes). Şişli Hamidiye Etfal has the longest average length of stay in yellow area within the TH with 187 minutes (Table 27). The average length of stay in green area is 56 minutes (TH: 96 and PH: 27 minutes). Şişli Hamidiye Etfal has the longest average length of stay among TH in the green area with 169 minutes (Table 27).

A good way to measure the effectiveness of care in ED is to track readmissions. A rise in the readmission of the same patient with the same complaints shows that you are not delivering the care effectively and your diagnosis and/or treatment is insufficient. We in BKHB follow the readmission rates to measure the ED quality using our DSS. Another parameter that we can measure the effectiveness of ED is the frequent visits. Frequent visits shows not only the service effectiveness but also is an indicator of the service being delivered in the right place or not. So it can be accepted also as an efficiency criterion. Instead of visiting an outpatient clinic or family physician, a patient`s inappropriate and frequent visit to ED is a waste of resources and the patient will not find the proper cure. Frequent visits to the ED which is widely discussed and investigated internationally is measured in BKHB for the first time in Turkey and the results are published in our survey. Analysis is hospital-based and involves 2,212,910 visits of 1,234,228 patients. Data regarding the frequent visits can be seen in Table 28, 29 and 30.

Although not an internationally accepted standard, 5 or more EDV of the same patient in a year is accepted as a frequent visit. The reasons for frequent ED visits are plenty. Some of the chief reasons are people`s habits of using ED for simple healthcare problems, ED care being free of charge, acute exacerbations of chronic diseases, behavioral disorders and mental illnesses, alcohol and substance addiction (4,5). Analyzing the data of patients who frequently visit ED of BKHB, we determine that the majority of these patients see ED as the first place to go for general healthcare problems.

Rate of 5 or more visits to ED in our hospitals were 19% in 2013 and 23% in 2014. We did not find any previous study on the frequent ED visits in Turkey. In international literature there are many studies on this subject and the frequent emergency visit numbers can be seen below. If we compare BKHB `s numbers with other countries, the frequent visit rate in our country is similar to the US and Canada, which have strong secondary and tertiary care system but weak in primary care unlike European counterparts.

- Netherlands: 7 or more 3.3% (6)
- UK: 10 or more 1.9% (7)
- Switzerland: 12 or more 0.8% (8)
- Taiwan: 4 or more 14.3% (9)
- Australia: 5 or more 2.4% (10)
- Canada: 5 or more 22.5% (11)
- US: 5 or more 17.6 (12)

As shown in Figure 8, patient who visit ED only once a year constitute 65.78% of the patients but 36.39% of total ED visits. This means 2/3 of patients make up for 1/3 of ED patient load. Patients who present to the ED 5-9 times in a year are a small group with 4.68% but make up 16.07% of the EDV (Table 28, 29).

İstinye PH and Sarıyer İsmail Akgün PH has the highest rate of 5 or more visits with 30.88% and 29.36% respectively (Figure 9). In Şişli Hamidiye Etfal TH the frequent visits are the lowest with 15.36%. Similarly, Eyüp and Kağıthane PH frequent visit rates are between 15-16%. 5.7% of our patients who visit the ED (σ +- %2.10, min 3.49% and max 8.38%) belongs to the patient group who visit 5 or more times. This patient group makes up 22.9% of total emergency service load (σ +- 7% min 15.36% and max 30.88%).

There is no significant difference of frequent visits of 5 or more times between TH and secondary care hospitals (Mann Whitney'u test p: 0.480 and p>0.05). 57.4% of patients who visit 20 or more times consist of male patients. Other than the patients who visit 20 or more times, gender distribution is slightly in favor of female patients (Table 30). In line with the general visit distribution the age group of 25-44 and under 15 years constitute most of the visits. Male patient rate that is 65 years or above is especially high in 20 or more visits subgroup. The same rate is limited to 14% for females.

The rate of patients who don`t get better or who get worse after their first visit and get readmitted in 72 hours with the same complaint is an important indicator of healthcare quality. Although not an internationally accepted rule, lower than 1% is considered as an acceptable figure (13). Readmision within 24 hours is one of the standard quality indicators to be monitored in Turkey. Readmissions over a certain level should be considered as an indicator of the ED not functioning properly and the reasons should be investigated.

Rates of patients with readmissions in 24 and 72 hours are seen in Table 31. In general 156 of each 10,000 patient make another EDV within 24 hours of their first appearance. For 72 hours the number is 362. İstinye PH has the lowest rate of readmission in 24 hours, although its readmission rate in 72 hours is the highest with 5.7%. This might be caused by the erroneous recording of patient who actually needs an injection or wound care with the SUT (Health Application Communiqué) submission code of "Emergency Examination". There isn`t any significant difference between TH and PH in terms of readmissions in 24 hours (Mann Whitney'u test: p: 0.297 and p>0.05).

## DIAGNOSIS PATTERN OF EMERGENCY DEPARTMENT VISITS

As pointed out in the section where we assess the ED resources, all personnel working in ED, especially doctors and nurses have heavy workload. Doctors who have a hard time allocating enough time to patients unfortunately cannot always record patient medical information to HMIS properly. Medical information recording is usually done by data entry clerks and the end result is wrong diagnosis coding. Due to these reasons, incorrect or incomplete patient diagnoses and treatment data might be entered into the information systems.

Our survey consists of diagnosis data taken from HMIS and based on ICD 10 codes. No comparisons with patient paper files have been made. There is not 100% reliability on diagnosis data but because of the very high patient volumes we think we can ignore the loss of data caused by incomplete or incorrect data entries.

2,233,905 diagnoses were made for 2,226,780 visits including multiple diagnoses. When evaluated according to major disease categories, number one diagnosis group is "R00-R99 Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified" (30,36%), and the number two is "J00-J99 Diseases of the respiratory system" (29,87%). However, if we make a distinction between

TH and PH, "R00-R99 Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified" constitutes 38,41% of all diagnosis in TH. Meanwhile, PH have 16.87% of the diagnoses for the same ICD 10 code range. In PH, the most diagnosed category is "J00-J99 Diseases of the respiratory system" with 36.09% (Table 32, 33, 34).

81.63% of the diagnoses in diseases of the respiratory system are acute upper respiratory infections which have a code range between J00 and J11. This disease group with almost 25% of total visits can be accepted as the most common cause of EDV (Table 35).

The most diagnosed disease is J03 acute tonsillitis with 5.95%. J03 rate is 8.4% in TH and 1.84% in PH. However, for the 0-12 month old group where acute tonsillitis is almost never observed the J03 diagnosis rate is 9.4%. This situation suggests that especially in TH J03 diagnosis code is used incorrectly (Table 36, 37, 38, 39).

The whole list about major disease groups, the mostly diagnosed diseases, their distribution among hospital type, patient gender and ages and detailed diagnosis lists are presented in Tables 32, 33, 34, 35, 36, 37, 38, 39.

"V01-Y98 External causes of morbidity and mortality" is the 3rd category with the most diagnosis. These codes starting with V, W, X, Y are used for injuries, poisoning and other external causes. These codes should accompany "S00-T98 - Injury, poisoning and certain other consequences of external causes" codes and not used alone or as the main diagnosis. But because of user errors and insufficient coding education, they are widely used as the main diagnosis in trauma cases.

In this category, 191,504 diagnoses were made for 190,306 visits. 67.19% of all ED visits and 80.6% of trauma patient visits were in the TH (Table 40). Okmeydanı TH by itself has provided healthcare to approximately 41% of trauma patients. Almost half of the visits caused by trauma got diagnosed as "W01 - Fall on same level from slipping, tripping and stumbling and W19 - Unspecified fall" (Table 41).

61.48% of trauma patients consist of males. The ages between 25 and 44 make up 33.2% the trauma visits (Table 42). Males in 15-24 age group and females in 65+ age group come to attention with their higher visit rates in comparison to the other groups. Detailed information in this category can be seen in Tables 40, 41, 42, 43.

If evaluated from a perspective of using the diagnosis codes correctly, nearly 44% of the 65+ age group is diagnosed with "W84 - Unspecified threat to breathing" (31,69%) and "W83 - Other specified threats to breathing" (12,24%). We know that this is not realistic. These diagnosis codes are used for situations where breathing is affected by e.g. accidentally swallowing objects. The fact that 44% of trauma related visits in patients with ages of 65 or above are recorded under these codes makes us think of incorrect coding. The situation can be explained by patients with breathing difficulties caused by chronic obstructive pulmonary disease or asthma who are recorded with the wrong diagnosis code.

**Table 28.** Distribution of Emergency Department Frequent Visits by Number of Presentation (%) BKHB 2014

| | 1 | 2 | 3 | 4 | 5-9 | 10-20 | 20+ | Total |
|---|---|---|---|---|---|---|---|---|
| All Hospitals | 36.69 | 19.99 | 11.94 | 7.91 | 16.07 | 5.97 | 1.44 | 100.00 |
| Teaching Hospitals | 36.73 | 19.74 | 11.78 | 7.84 | 16.20 | 6.24 | 1.46 | 100.00 |
| Okmeydanı | 32.14 | 18.88 | 12.30 | 8.46 | 19.05 | 7.51 | 1.66 | 100.00 |
| Şişli Hamidiye Etfal | 44.41 | 21.54 | 11.42 | 7.27 | 11.76 | 2.97 | 0.62 | 100.00 |
| GOP Taksim | 37.52 | 19.39 | 10.99 | 7.13 | 15.26 | 7.59 | 2.12 | 100.00 |
| Secondary Care Hospitals | 36.60 | 20.50 | 12.28 | 8.04 | 15.80 | 5.39 | 1.39 | 100.00 |
| Eyüp | 43.50 | 21.92 | 11.53 | 6.76 | 11.59 | 3.70 | 0.99 | 100.00 |
| İstinye | 30.43 | 18.05 | 11.89 | 8.76 | 20.32 | 8.27 | 2.29 | 100.00 |
| Kâğıthane | 41.54 | 22.73 | 12.66 | 7.63 | 11.98 | 2.78 | 0.68 | 100.00 |
| Sarıyer İsmail Akgün | 27.30 | 19.27 | 14.14 | 9.93 | 21.06 | 6.86 | 1.44 | 100.00 |

**Table 29.** Distribution of Emergency Department Frequent Visitors by Number of Presentation (%) BKHB 2014

| | 1 | 2 | 3 | 4 | 5-9 | 10-20 | 20+ | Total |
|---|---|---|---|---|---|---|---|---|
| All Hospitals | 65.78 | 17.92 | 7.14 | 3.54 | 4.68 | 0.85 | 0.09 | 100.00 |
| Teaching Hospitals | 65.99 | 17.73 | 7.05 | 3.52 | 4.71 | 0.90 | 0.09 | 100.00 |
| Okmeydanı | 62.37 | 18.32 | 7.96 | 4.10 | 5.97 | 1.16 | 0.11 | 100.00 |
| Şişli Hamidiye Etfal | 70.48 | 17.10 | 6.04 | 2.88 | 3.08 | 0.38 | 0.03 | 100.00 |
| GOP Taksim | 67.35 | 17.40 | 6.58 | 3.20 | 4.39 | 1.07 | 0.13 | 100.00 |
| Secondary Care Hospitals | 65.35 | 18.30 | 7.31 | 3.59 | 4.59 | 0.77 | 0.08 | 100.00 |
| Eyüp | 69.92 | 17.62 | 6.18 | 2.72 | 3.04 | 0.47 | 0.05 | 100.00 |
| İstinye | 61.34 | 18.20 | 7.99 | 4.42 | 6.59 | 1.32 | 0.15 | 100.00 |
| Kâğıthane | 67.78 | 18.54 | 6.89 | 3.11 | 3.27 | 0.37 | 0.03 | 100.00 |
| Sarıyer İsmail Akgün | 56.68 | 20.01 | 9.78 | 5.15 | 7.12 | 1.15 | 0.11 | 100.00 |

**Table 30.** Distribution of Emergency Department Frequent Visits by Age and Gender (%) BKHB 2014

| | 1 | 2 | 3 | 4 | 5-9 | 10-20 | 20+ |
|---|---|---|---|---|---|---|---|
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Female | 48.34 | 49.91 | 51.67 | 51.96 | 52.90 | 51.72 | 42.60 |
| Male | 51.66 | 50.09 | 48.33 | 48.04 | 47.10 | 48.28 | 57.40 |
| Under 15 Years | 20.36 | 22.10 | 24.82 | 26.65 | 29.47 | 29.64 | 16.89 |
| Under 1 Year | 1.58 | 1.51 | 1.64 | 1.69 | 1.93 | 1.50 | 0.52 |
| 1-4 Years | 6.96 | 7.90 | 9.84 | 11.65 | 14.50 | 17.90 | 12.56 |
| 5-14 Years | 11.82 | 12.68 | 13.35 | 13.31 | 13.03 | 10.24 | 3.80 |
| 15-24 Years | 18.74 | 18.14 | 17.70 | 17.55 | 16.38 | 15.69 | 9.28 |
| 25-44 Years | 35.77 | 35.57 | 34.00 | 33.30 | 31.31 | 29.03 | 28.94 |
| 45-64 Years | 17.99 | 17.13 | 16.51 | 15.52 | 15.71 | 17.15 | 25.74 |
| 65 Years and Over | 7.14 | 7.06 | 6.97 | 6.98 | 7.13 | 8.49 | 19.15 |
| 65-74 Years | 3.99 | 3.86 | 3.84 | 3.74 | 4.07 | 4.99 | 11.59 |
| 75 Years and Over | 3.15 | 3.20 | 3.13 | 3.24 | 3.05 | 3.50 | 7.56 |
| Gender and Age | | | | | | | |
| Female | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Under 15 Years | 20.04 | 19.98 | 21.44 | 22.55 | 24.57 | 23.94 | 12.45 |
| Under 1 Year | 1.52 | 1.43 | 1.45 | 1.35 | 1.51 | 1.22 | 0.00 |
| 1-4 Years | 7.51 | 7.24 | 8.60 | 9.70 | 11.86 | 13.82 | 9.00 |
| 5-14 Years | 11.01 | 11.31 | 11.39 | 11.50 | 11.21 | 8.90 | 3.46 |
| 15-24 Years | 17.76 | 17.35 | 17.53 | 17.33 | 17.21 | 17.11 | 13.12 |
| 25-44 Years | 33.52 | 35.13 | 34.70 | 34.87 | 33.39 | 32.64 | 34.82 |
| 45-64 Years | 19.85 | 19.06 | 18.48 | 17.47 | 17.61 | 18.36 | 25.64 |
| 65 Years and Over | 8.83 | 8.48 | 7.85 | 7.77 | 7.21 | 7.94 | 13.96 |
| 65-74 Years | 4.81 | 4.54 | 4.27 | 4.18 | 4.21 | 4.71 | 9.99 |
| 75 Years and Over | 4.01 | 3.94 | 3.58 | 3.60 | 3.00 | 3.23 | 3.96 |
| Male | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Under 15 Years | 20.66 | 24.21 | 28.44 | 31.09 | 34.96 | 35.74 | 20.18 |
| Under 1 Year | 1.64 | 1.60 | 1.84 | 2.07 | 2.41 | 1.79 | 0.91 |
| 1-4 Years | 6.44 | 8.56 | 11.16 | 13.76 | 17.46 | 22.27 | 15.21 |
| 5-14 Years | 12.58 | 14.05 | 15.44 | 15.26 | 15.08 | 11.68 | 4.06 |
| 15-24 Years | 19.65 | 18.93 | 17.88 | 17.79 | 15.46 | 14.17 | 6.43 |
| 25-44 Years | 37.88 | 36.00 | 33.25 | 31.60 | 28.97 | 25.16 | 24.57 |
| 45-64 Years | 16.26 | 15.21 | 14.40 | 13.40 | 13.57 | 15.85 | 25.81 |
| 65 Years and Over | 5.55 | 5.64 | 6.03 | 6.12 | 7.04 | 9.08 | 23.00 |
| 65-74 Years | 3.21 | 3.18 | 3.38 | 3.27 | 3.92 | 5.29 | 12.78 |
| 75 Years and Over | 2.34 | 2.46 | 2.65 | 2.85 | 3.12 | 3.79 | 10.23 |

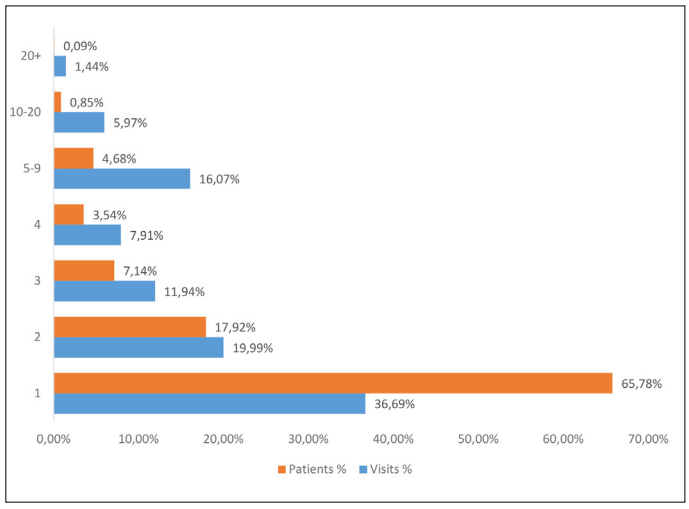


**Figure 8.** Rate of frequent visits and frequent presenters based on number of visit, BKHB 2014

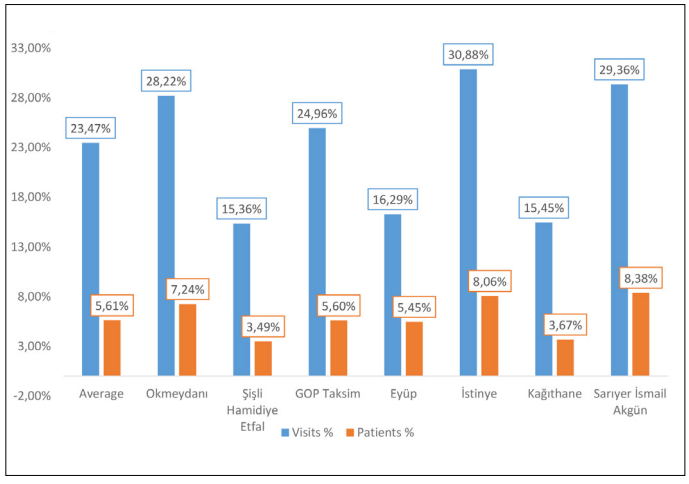


**Figure 9.** Rate of 5 or more visits by hospital, BKHB 2014

**Table 31.** Distribution of Emergency Department Readmissions within 24 and 72 Hours (%) BKHB 2014

| | 24 Hours (%) | 72 Hours (%) |
|---|---|---|
| All Hospitals | 1.56 | 3.62 |
| Teaching Hospitals | 1.62 | 3.53 |
| Okmeydanı | 1.16 | 3.56 |
| Şişli Hamidiye Etfal | 1.95 | 2.86 |
| GOP Taksim | 2.15 | 4.49 |
| Secondary Care Hospitals | 1.44 | 3.81 |
| Eyüp | 1.46 | 3.31 |
| İstinye | 1.04 | 5.70 |
| Kâğıthane | 1.72 | 3.17 |
| Sarıyer İsmail Akgün | 1.67 | 2.52 |

## DIAGNOSTIC AND THERAPEUTIC PROCEDURES IN EMERGENCY DEPARTMENT VISITS

The procedures performed in ED are presented with their SUT submission names in our survey. The first thing that stands out regarding diagnostic procedures is the numbers of procedures done in TH are higher than the ones in PH (Table 44, 45, 46). 32.81% of the patients admitted to our PH but only 8.09% of the test were ordered in PH. Also, there are some differences in the types of tests that were ordered. The most frequent test is "Complete Blood Count".

87.40% of the imaging procedures are carried out in TH. About 89% of the imaging carried out in PH is X-ray and it is seen that the other techniques are rarely used. The details regarding the imaging tests can be seen in Table 47, 48, 49, 50.

Table 51, 52, 53 present both diagnostic and therapeutic procedures and are prepared based on SUT names. Intramuscular and intravenous injections make up 75% of the total. Intramuscular injection forms almost half of the procedures carried out and they reach 68% in PH. Intravenous treatments are mostly preferred in TH. The most frequently used diagnosis-oriented procedure is ECG.

When the number of EDV, and type and number of procedures are compared, we can easily see the rate of procedures that would be considered as real emergency treatments is insignificant. This is another indication that the degree of urgency is low and inappropriate visits are high.

The number of drugs used in ED shown in Table 54 is calculated using stock numbers and only includes Kâğıthane and Sarıyer PH data. Although numbers of drugs administered are approximate values, they reveal a realistic picture.

Table 55 displays the list of most frequently prescribed drugs in ED based on electronic prescription. Because paper based prescriptions are widely used, our list of drugs is not all inclusive. Especially in TH, rate of electronic prescription is very low and makes up only 8.45% of the drugs in our list. However type of drugs that are prescribed most in ED is in line with the most diagnosed disease category which is the upper respiratory track infections.

97% of the patients are discharged home after being treated in ED. The mortality rate is only 0.02% (Table 56). There is no statistically significant difference between TH and PH in terms of mortality rate (Mann-Whitney'u test p: 0.15 and p>0.05)

The average of admission to inpatient clinics from ED is 3.43% for TH and 0.43% for PH. There is a statistically significant difference in the admitted patient rates between TH and PH (Mann-Whitney'u test p: 0.034 and p<0.05).

When compared with international statistics, it is seen that the admission rate is very low in our country. The admission rate of the patients visiting ED is 12% in the US (2), 21% in Britain (14) and 28% in Australia (3). This situation shows that the ED in our country aren't utilized for emergency treatment and supports the argument that our ED are used inappropriately by the patients who need to be cared by primary care physicians.

**Table 32.** Distribution of Diagnosis at Emergency Department Visits According to the Major Diagnostic Categories (%), BKHB 2014

| Diagnosis Categories | Number of Diagnosis | % |
|---|---|---|
| Total | 2,233,905 | 100.00 |
| A00-B99 Certain infectious and parasitic diseases | 50,080 | 2.24 |
| C00-D48 Neoplasms | 1,623 | 0.07 |
| D50-D89 Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism | 5,945 | 0.27 |
| E00-E90 Endocrine, nutritional and metabolic diseases | 7,599 | 0.34 |
| F00-F99 Mental and behavioural disorders | 17,179 | 0.77 |
| G00-G99 Diseases of the nervous system | 16,317 | 0.73 |
| H00-H59 Diseases of the eye and adnexa | 22,325 | 1.00 |
| H60-H95 Diseases of the ear and mastoid process | 21,904 | 0.98 |
| I00-I99 Diseases of the circulatory system | 33,586 | 1.50 |
| J00-J99 Diseases of the respiratory system | 667,353 | 29.87 |
| K00-K93 Diseases of the digestive system | 68,269 | 3.06 |
| L00-L99 Diseases of the skin and subcutaneous tissue | 30,101 | 1.35 |
| M00-M99 Diseases of the musculoskeletal system and connective tissue | 180,245 | 8.07 |
| M800-M998 Neoplazmların Morfolojisi | 46 | 0.00 |
| N00-N99 Diseases of the genitourinary system | 94,158 | 4.21 |
| O00-O99 Pregnancy, childbirth and the puerperium | 10,928 | 0.49 |
| P00-P96 Certain conditions originating in the perinatal period | 6,499 | 0.29 |
| Q00-Q99 Congenital malformations, deformations and chromosomal abnormalities | 624 | 0.03 |
| R00-R99 Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified | 678.172 | 30.36 |
| S00-T98 Injury, poisoning and certain other consequences of external causes | 73,974 | 3.31 |
| U00-U99 Codes for special purposes | 2 | 0.00 |
| V01-Y98 External causes of morbidity and mortality | 191,574 | 8.58 |
| Z00-Z99 Factors influencing health status and contact with health services | 55,402 | 2.48 |

**Table 33.** Distribution of Diagnosis at Emergency Department Visits According to the Major Diagnostic Categories (%), BKHB Teaching Hospitals 2014

| Diagnosis Categories | Number of Diagnosis | % |
|---|---|---|
| Total | 1,399,163 | 100.00 |
| A00-B99 Certain infectious and parasitic diseases | 9,442 | 0.67 |
| C00-D48 Neoplasms | 977 | 0.07 |
| D50-D89 Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism | 3,127 | 0.22 |
| E00-E90 Endocrine, nutritional and metabolic diseases | 1,119 | 0.08 |
| F00-F99 Mental and behavioural disorders | 2,798 | 0.20 |
| G00-G99 Diseases of the nervous system | 11,827 | 0.85 |
| H00-H59 Diseases of the eye and adnexa | 14,704 | 1.050 |
| H60-H95 Diseases of the ear and mastoid process | 12,677 | 0.91 |
| I00-I99 Diseases of the circulatory system | 11,217 | 0.80 |
| J00-J99 Diseases of the respiratory system | 366,111 | 26.17 |
| K00-K93 Diseases of the digestive system | 27,381 | 1.96 |
| L00-L99 Diseases of the skin and subcutaneous tissue | 12,794 | 0.91 |
| M00-M99 Diseases of the musculoskeletal system and connective tissue | 92,971 | 6.64 |
| M800-M998 Neoplazmların Morfolojisi | 1 | 0.00 |
| N00-N99 Diseases of the genitourinary system | 59,969 | 4.29 |
| O00-O99 Pregnancy, childbirth and the puerperium | 10,675 | 0.76 |
| P00-P96 Certain conditions originating in the perinatal period | 6,445 | 0.46 |
| Q00-Q99 Congenital malformations, deformations and chromosomal abnormalities | 488 | 0.03 |
| R00-R99 Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified | 537,367 | 38.41 |
| S00-T98 Injury, poisoning and certain other consequences of external causes | 47,330 | 3.38 |
| U00-U99 Codes for special purposes | 2 | 0.00 |
| V01-Y98 External causes of morbidity and mortality | 154,135 | 11.02 |
| Z00-Z99 Factors influencing health status and contact with health services | 15,606 | 1.12 |

**Table 34.** Distribution of Diagnosis at Emergency Department Visits According to the Major Diagnostic Categories (%), BKHB Secondary Care Hospitals 2014

| Diagnosis Categories | Number of Diagnosis | % |
|---|---|---|
| Total | 834,742 | 100.00 |
| A00-B99 Certain infectious and parasitic diseases | 40,638 | 4.87 |
| C00-D48 Neoplasms | 646 | 0.08 |
| D50-D89 Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism | 2,818 | 0.34 |
| E00-E90 Endocrine, nutritional and metabolic diseases | 6,480 | 0.78 |
| F00-F99 Mental and behavioural disorders | 14,381 | 1.72 |
| G00-G99 Diseases of the nervous system | 4,490 | 0.54 |
| H00-H59 Diseases of the eye and adnexa | 7,621 | 0.91 |
| H60-H95 Diseases of the ear and mastoid process | 9,227 | 1.11 |
| I00-I99 Diseases of the circulatory system | 22,369 | 2.68 |
| J00-J99 Diseases of the respiratory system | 301,242 | 36.09 |
| K00-K93 Diseases of the digestive system | 40,888 | 4.90 |
| L00-L99 Diseases of the skin and subcutaneous tissue | 17,307 | 2.07 |
| M00-M99 Diseases of the musculoskeletal system and connective tissue | 87,274 | 10.46 |
| M800-M998 Neoplazmların Morfolojisi | 45 | 0.01 |
| N00-N99 Diseases of the genitourinary system | 34,189 | 4.10 |
| O00-O99 Pregnancy, childbirth and the puerperium | 253 | 0.03 |
| P00-P96 Certain conditions originating in the perinatal period | 54 | 0.01 |
| Q00-Q99 Congenital malformations, deformations and chromosomal abnormalities | 136 | 0.02 |
| R00-R99 Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified | 140,805 | 16.87 |
| S00-T98 Injury, poisoning and certain other consequences of external causes | 26,644 | 3.19 |
| V01-Y98 External causes of morbidity and mortality | 37,439 | 4.49 |
| Z00-Z99 Factors influencing health status and contact with health services | 39,796 | 4.77 |

**Table 35.** 5 Leading Diagnosis within each Major Diagnostic Categories (%)

| Diagnosis Categories / ICD Code | Number of Diagnosis | % |
|---|---|---|
| A00-B99 Certain infectious and parasitic diseases | 50,080 | 100.00 |
| B87.1 - Wound myiasis | 17,195 | 34.34 |
| A09 - Infectious gastroenteritis and colitis, unspecified | 12,718 | 25.40 |
| A08.4 - Viral intestinal infection, unspecified | 5,187 | 10.36 |
| A04.9 - Bacterial intestinal infection, unspecified | 5,180 | 10.34 |
| A05.8 - Other specified bacterial foodborne intoxications | 1,110 | 2.22 |
| Other diagnoses | 8,690 | 17.35 |
| I00-I99 Diseases of the circulatory system | 33,586 | 100.00 |
| I10 - Essential (primary) hypertension | 22,165 | 65.99 |
| I95 - Hypotension | 1,860 | 5.54 |
| I84 - Hemorrhoids | 1,754 | 5.22 |
| I95.9 - Hypotension, unspecified | 1,105 | 3.29 |
| I84.9 – Unspecified Hemorrhoids without mention of complication | 619 | 1.84 |
| Other diagnoses | 6,083 | 18.11 |
| J00-J99 Diseases of the respiratory system | 667,353 | 100.00 |
| J03 - Acute tonsillitis | 132,918 | 19.92 |
| J06.9 - Acute upper respiratory infection, unspecified | 121,017 | 18.13 |
| J02 - Acute pharyngitis | 101,012 | 15.14 |
| J06 - Acute upper respiratory infections of multiple and unspecified sites | 95,686 | 14.34 |
| J00 - Acute nasopharyngitis [common cold] | 35,891 | 5.38 |
| Other diagnoses | 180,829 | 27.10 |
| K00-K93 Diseases of the digestive system | 68,269 | 100 |
| K52.9 - Noninfective gastroenteritis and colitis, unspecified | 11,223 | 16.44 |
| K30 - Functional dyspepsia | 9,059 | 13.27 |
| K52.8 - Other specified noninfective gastroenteritis and colitis | 7,918 | 11.60 |
| K21 - Gastro-esophageal reflux disease | 4,737 | 6.94 |
| K59.0 - Constipation | 4,549 | 6.66 |
| Other diagnoses | 30,783 | 45.09 |
| L00-L99 Diseases of the skin and subcutaneous tissue | 30,101 | 100.00 |
| L50 - Urticaria | 6,983 | 23.20 |
| L50.9 - Urticaria, unspecified | 6,186 | 20.55 |
| L30.9 - Dermatitis, unspecified | 2,308 | 7.67 |
| L08.9 - Local infection of the skin and subcutaneous tissue, unspecified | 1,873 | 6.22 |
| L30 - Other and unspecified dermatitis | 1,680 | 5.58 |
| Other diagnoses | 11,071 | 36.78 |

**Table 35.** 5 Leading Diagnosis within each Major Diagnostic Categories (%)

| Diagnosis Categories / ICD Code | Number of Diagnosis | % |
|---|---|---|
| M00-M99 Diseases of the musculoskeletal system and connective tissue | 180,245 | 100.00 |
| M79.1 - Myalgia | 46,842 | 25.99 |
| M54.5 - Low back pain | 30,502 | 16.92 |
| M25.5 - Pain in joint | 16,106 | 8.94 |
| M79.9 - Soft tissue disorder, unspecified | 15,575 | 8.64 |
| M79.8 - Other specified soft tissue disorders | 12,785 | 7.09 |
| Other diagnoses | 58,435 | 32.42 |
| N00-N99 Diseases of the genitourinary system | 94,158 | 100.00 |
| N39.0 - Urinary tract infection, site not specified | 20,259 | 21.52 |
| N23 - Unspecified renal colic | 12,184 | 12.94 |
| N30.0 - Acute cystitis | 9,940 | 10.56 |
| N91 - Absent, scanty and rare menstruation | 9,792 | 10.40 |
| N94.6 - Dysmenorrhea, unspecified | 5,422 | 5.76 |
| Other diagnoses | 32,191 | 34.19 |
| R00-R99 Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified | 678,172 | 100.00 |
| R10.4 - Other and unspecified abdominal pain | 100,321 | 14.79 |
| R52 - Pain, unspecified | 93,666 | 13.81 |
| R11 - Nausea and vomiting | 90,733 | 13.38 |
| R53 - Malaise and fatigue | 56,456 | 8.32 |
| R51 - Headache | 52,700 | 7.77 |
| Other diagnoses | 284,296 | 41.92 |
| S00-T98 Injury, poisoning and certain other consequences of external causes | 73,974 | 100.00 |
| T78.4 - Other and unspecified allergy | 12,848 | 17.37 |
| S93.4 - Sprain of ankle | 6,725 | 9.09 |
| S63.5 - Other and unspecified sprain of wrist | 5,268 | 7.12 |
| T15 - Foreign body on external eye | 3,869 | 5.23 |
| S06.9 - Unspecified intracranial injury | 3,817 | 5.16 |
| Other diagnoses | 41,447 | 56.03 |
| Z00-Z99 Factors influencing health status and contact with health services | 55,402 | 100.00 |
| Z00.0 - Encounter for general adult medical examination | 31,679 | 57.18 |
| Z00.8 - Encounter for other general examination | 8,851 | 15.98 |
| Z04.1 - Encounter for examination and observation following transport accident | 3,309 | 5.97 |
| Z33 - Pregnant state | 2,016 | 3.64 |
| Z04.2 - Encounter for examination and observation following work accident | 1,326 | 2.39 |
| Other diagnoses | 8,221 | 14.84 |

**Table 36.** Number and Distribution of 40 Leading Diagnosis for Emergency Department Visits (%), BKHB 2014

| ICD-10 Diagnosis Code | Number of Diagnosis | % |
|---|---|---|
| J03 - Acute tonsillitis | 132,929 | 5.95 |
| J06,9 - Acute upper respiratory infection, unspecified | 120,994 | 5.42 |
| J02 - Acute pharyngitis | 101,012 | 4.52 |
| R10,4 - Other and unspecified abdominal pain | 100,326 | 4.49 |
| J06 - Acute upper respiratory infections of multiple and unspecified sites | 95,629 | 4.28 |
| R52 - Pain, unspecified | 93,660 | 4.19 |
| R11 - Nausea and vomiting | 90,734 | 4.06 |
| R53 - Malaise and fatigue | 56,459 | 2.53 |
| R51 - Headache | 52,696 | 2.36 |
| W01 - Fall on same level from slipping, tripping and stumbling | 51,533 | 2.31 |
| M79,1 - Myalgia | 46,836 | 2.10 |
| W19 - Unspecified fall | 42,475 | 1.90 |
| R07,4 - Pain in chest, unspecified | 41,622 | 1.86 |
| J00 - Acute nasopharyngitis [common cold] | 35,882 | 1.61 |
| R10 - Abdominal and pelvic pain | 34,955 | 1.56 |
| R05 - Cough | 34,813 | 1.56 |
| J39 - Other diseases of upper respiratory tract | 33,360 | 1.49 |
| Z00,0 - Encounter for general adult medical examination | 31,554 | 1.41 |
| M54,5 - Low back pain | 30,501 | 1.37 |
| J02,9 - Acute pharyngitis, unspecified | 29,674 | 1.33 |
| R42 - Dizziness and giddiness | 28,101 | 1.26 |
| R52,0 - Acute pain | 23,527 | 1.05 |
| R52,9 - Pain, unspecified | 23,210 | 1.04 |
| J39,9 - Disease of upper respiratory tract, unspecified | 22,288 | 1.00 |
| I10 - Essential (primary) hypertension | 22,165 | 0.99 |
| N39,0 - Urinary tract infection, site not specified | 20,259 | 0.91 |
| B87,1 - Wound myiasis | 17,195 | 0.77 |
| M25,5 - Pain in joint | 16,104 | 0.72 |
| M79,9 - Soft tissue disorder, unspecified | 15,575 | 0.70 |
| J20 - Acute bronchitis | 15,505 | 0.69 |
| W51 - Accidental striking against or bumped into by another person | 15,350 | 0.69 |
| R07,3 - Other chest pain | 14,435 | 0.65 |
| W84 - Unspecified threat to breathing | 14,230 | 0.64 |
| R50 - Fever of other and unknown origin | 13,553 | 0.61 |
| J03,9 - Acute tonsillitis, unspecified | 12,992 | 0.58 |
| T78,4 - Other and unspecified allergy | 12,849 | 0.58 |
| M79,8 - Other specified soft tissue disorders | 12,785 | 0.57 |
| A09 - Infectious gastroenteritis and colitis, unspecified | 12,716 | 0.57 |
| Y35 - Legal intervention | 12,686 | 0.57 |
| N23 - Unspecified renal colic | 12,186 | 0.55 |
| Other diagnoses | 638,550 | 28.58 |

**Table 37.** Number and Distribution of 40 Leading Diagnosis for Emergency Department Visits (%), BKHB Teaching Hospitals 2014

| ICD-10 Diagnosis Code | Number of Diagnosis | % |
|---|---|---|
| J03 - Acute tonsillitis | 117,586 | 8.40 |
| R52 - Pain, unspecified | 93,277 | 6.67 |
| J06 - Acute upper respiratory infections of multiple and unspecified sites | 86,301 | 6.17 |
| R10,4 - Other and unspecified abdominal pain | 71,118 | 5.08 |
| R11 - Nausea and vomiting | 66,418 | 4.75 |
| R53 - Malaise and fatigue | 55,443 | 3.96 |
| W01 - Fall on same level from slipping, tripping and stumbling | 44,899 | 3.21 |
| R10 - Abdominal and pelvic pain | 34,310 | 2.45 |
| J02 - Acute pharyngitis | 33,936 | 2.43 |
| R05 - Cough | 31,684 | 2.26 |
| J39 - Other diseases of upper respiratory tract | 31,398 | 2.24 |
| W19 - Unspecified fall | 26,562 | 1.90 |
| R51 - Headache | 25,789 | 1.84 |
| R07,4 - Pain in chest, unspecified | 24,301 | 1.74 |
| J39,9 - Disease of upper respiratory tract, unspecified | 22,087 | 1.58 |
| R52,9 - Pain, unspecified | 22,071 | 1.58 |
| M79,1 - Myalgia | 21,506 | 1.54 |
| J00 - Acute nasopharyngitis [common cold] | 19,611 | 1.40 |
| M54,5 - Low back pain | 18,097 | 1.29 |
| R42 - Dizziness and giddiness | 16,534 | 1.18 |
| R52,0 - Acute pain | 16,204 | 1.16 |
| M79,9 - Soft tissue disorder, unspecified | 15,249 | 1.09 |
| J06,9 - Acute upper respiratory infection, unspecified | 15,108 | 1.08 |
| M25,5 - Pain in joint | 14,678 | 1.05 |
| R50 - Fever of other and unknown origin | 13,549 | 0.97 |
| W84 - Unspecified threat to breathing | 13,187 | 0.94 |
| W51 - Accidental striking against or bumped into by another person | 12,936 | 0.92 |
| R07,3 - Other chest pain | 12,711 | 0.91 |
| Y35 - Legal intervention | 12,686 | 0.91 |
| R07,0 - Pain in throat | 9,807 | 0.70 |
| N91 - Absent, scanty and rare menstruation | 9,774 | 0.70 |
| N39,0 - Urinary tract infection, site not specified | 9,511 | 0.68 |
| J20 - Acute bronchitis | 8,879 | 0.63 |
| R55 - Syncope and collapse | 7,976 | 0.57 |
| K52,9 - Noninfective gastroenteritis and colitis, unspecified | 7,806 | 0.56 |
| H57,1 - Ocular pain | 7,403 | 0.53 |
| T78,4 - Other and unspecified allergy | 7,208 | 0.52 |
| O26,9 - Pregnancy related conditions, unspecified | 6,755 | 0.48 |
| S93,4 - Sprain of ankle | 6,479 | 0.46 |
| N23 - Unspecified renal colic | 6,200 | 0.44 |
| Other diagnoses | 315,261 | 22.53 |

**Table 38.** Number and Distribution of 40 Leading Diagnosis for Emergency Department Visits (%), BKHB Secondary Care Hospitals 2014

| ICD-10 Diagnosis Code | Number of Diagnosis | % |
|---|---|---|
| J06,9 - Acute upper respiratory infection, unspecified | 105,886 | 12.68 |
| J02 - Acute pharyngitis | 67,076 | 8.04 |
| R10,4 - Other and unspecified abdominal pain | 29,208 | 3.50 |
| J02,9 - Acute pharyngitis, unspecified | 28,403 | 3.40 |
| Z00,0 - Encounter for general adult medical examination | 27,461 | 3.29 |
| R51 - Headache | 26,907 | 3.22 |
| M79,1 - Myalgia | 25,330 | 3.03 |
| R11 - Nausea and vomiting | 24,316 | 2.91 |
| R07,4 - Pain in chest, unspecified | 17,321 | 2.08 |
| B87,1 - Wound myiasis | 17,180 | 2.06 |
| I10 - Essential (primary) hypertension | 17,029 | 2.04 |
| J00 - Acute nasopharyngitis [common cold] | 16,271 | 1.95 |
| W19 - Unspecified fall | 15,913 | 1.91 |
| J03 - Acute tonsillitis | 15,343 | 1.84 |
| M54,5 - Low back pain | 12,404 | 1.49 |
| R42 - Dizziness and giddiness | 11,567 | 1.39 |
| J03,9 - Acute tonsillitis, unspecified | 11,411 | 1.37 |
| N39,0 - Urinary tract infection, site not specified | 10,748 | 1.29 |
| M79,8 - Other specified soft tissue disorders | 10,041 | 1.20 |
| J06 - Acute upper respiratory infections of multiple and unspecified sites | 9,328 | 1.12 |
| J18,9 - Pneumonia, unspecified organism | 9,086 | 1.09 |
| K30 - Functional dyspepsia | 8,416 | 1.01 |
| N30,0 - Acute cystitis | 8,159 | 0.98 |
| M79,98 - Soft tissue disorder, unspecified, Other diagnoses | 8,142 | 0.98 |
| A09 - Infectious gastroenteritis and colitis, unspecified | 7,814 | 0.94 |
| J20,9 - Acute bronchitis, tanımlanmamış | 7,353 | 0.88 |
| R52,0 - Acute pain | 7,323 | 0.88 |
| R06,0 - Dispne | 6,843 | 0.82 |
| M79,99 - Soft tissue disorder, unspecified, yer tanımlanmamış | 6,813 | 0.82 |
| W01 - Fall on same level from slipping, tripping and stumbling | 6,634 | 0.79 |
| J20 - Acute bronchitis | 6,626 | 0.79 |
| N23 - Unspecified renal colic | 5,986 | 0.72 |
| F41,9 - Anxiety disorder, unspecified | 5,923 | 0.71 |
| Z00,8 - Encounter for other general examination | 5,796 | 0.69 |
| T78,4 - Other and unspecified allergy | 5,641 | 0.68 |
| A08,4 - Viral intestinal infection, unspecified | 5,185 | 0.62 |
| A04,9 - Bacterial intestinal infection, unspecified | 5,179 | 0.62 |
| L50,9 - Urticaria, unspecified | 5,177 | 0.62 |
| J45,9 - Other and unspecified asthma | 4,584 | 0.55 |
| M79,18 - Myalgia, Other | 4,496 | 0.54 |
| Other diagnoses | 204,422 | 24.49 |

**Table 39.** Number and Distribution of 20 Leading Diagnosis for Emergency Department Visits by Age and Gender (%), BKHB 2014

| Age / Gender | ICD-10 Diagnosis Code | Number of Diagnosis | % |
|---|---|---|---|
| **0-12 months / Female** | | **13,813** | **100.00** |
| | J06 - Acute upper respiratory infections of multiple and unspecified sites | 1,784 | 12.92 |
| | P96,4 - Termination of pregnancy, affecting fetus and newborn | 1,400 | 10.14 |
| | J03 - Acute tonsillitis | 1,260 | 9.12 |
| | J00 - Acute nasopharyngitis [common cold] | 581 | 4.21 |
| | R50 - Fever of other and unknown origin | 554 | 4.01 |
| | P59,9 - Neonatal jaundice, unspecified | 524 | 3.79 |
| | R11 - Nausea and vomiting | 473 | 3.42 |
| | J02 - Acute pharyngitis | 431 | 3.12 |
| | J39 - Other diseases of upper respiratory tract | 367 | 2.66 |
| | R10,4 - Other and unspecified abdominal pain | 365 | 2.64 |
| | R05 - Cough | 338 | 2.45 |
| | K59,0 - Constipation | 278 | 2.01 |
| | R45,1 - Restlessness and agitation | 276 | 2.00 |
| | J39,9 - Disease of upper respiratory tract, unspecified | 273 | 1.98 |
| | J06,9 - Acute upper respiratory infection, unspecified | 271 | 1.96 |
| | J20 - Acute bronchitis | 270 | 1.95 |
| | P96 - Other conditions originating in the perinatal period | 254 | 1.84 |
| | P59 - Neonatal jaundice from other and unspecified causes | 197 | 1.43 |
| | J21 - Acute bronchiolitis | 193 | 1.40 |
| | W01 - Fall on same level from slipping, tripping and stumbling | 179 | 1.30 |
| | Other diagnoses | 3,545 | 25.66 |
| **0-12 Months / Male** | | **16,990** | **100.00** |
| | J06 - Acute upper respiratory infections of multiple and unspecified sites | 2,242 | 13.20 |
| | J03 - Acute tonsillitis | 1,636 | 9.63 |
| | P96,4 - Termination of pregnancy, affecting fetus and newborn | 1,454 | 8.56 |
| | J00 - Acute nasopharyngitis [common cold] | 732 | 4.31 |
| | R50 - Fever of other and unknown origin | 704 | 4.14 |
| | P59,9 - Neonatal jaundice, unspecified | 596 | 3.51 |
| | J02 - Acute pharyngitis | 551 | 3.24 |
| | R11 - Nausea and vomiting | 500 | 2.94 |
| | R05 - Cough | 464 | 2.73 |
| | J20 - Acute bronchitis | 432 | 2.54 |

**Table 39.** Number and Distribution of 20 Leading Diagnosis for Emergency Department Visits by Age and Gender (%), BKHB 2014 (continued)

| Age / Gender | ICD-10 Diagnosis Code | Number of Diagnosis | % |
|---|---|---|---|
| **0-12 months / Female** | | **13,813** | **100.00** |
| | J39 - Other diseases of upper respiratory tract | 432 | 2.54 |
| | R10,4 - Other and unspecified abdominal pain | 406 | 2.39 |
| | J06,9 - Acute upper respiratory infection, unspecified | 385 | 2.27 |
| | J21 - Acute bronchiolitis | 342 | 2.01 |
| | K59,0 - Constipation | 323 | 1.90 |
| | R45,1 - Restlessness and agitation | 319 | 1.88 |
| | P96 - Other conditions originating in the perinatal period | 310 | 1.82 |
| | J39,9 - Disease of upper respiratory tract, unspecified | 306 | 1.80 |
| | P59 - Neonatal jaundice from other and unspecified causes | 274 | 1.61 |
| | W01 - Fall on same level from slipping, tripping and stumbling | 201 | 1.18 |
| | Other diagnoses | 4,368 | 25.71 |
| **1-4 Years / Female** | | **88,400** | **100.00** |
| | J03 - Acute tonsillitis | 14,006 | 15.84 |
| | J06 - Acute upper respiratory infections of multiple and unspecified sites | 13,406 | 15.17 |
| | J00 - Acute nasopharyngitis [common cold] | 5,492 | 6.21 |
| | J06,9 - Acute upper respiratory infection, unspecified | 4,575 | 5.18 |
| | J02 - Acute pharyngitis | 4,470 | 5.06 |
| | R11 - Nausea and vomiting | 3,241 | 3.67 |
| | J39 - Other diseases of upper respiratory tract | 2,875 | 3.25 |
| | W01 - Fall on same level from slipping, tripping and stumbling | 2,279 | 2.58 |
| | R50 - Fever of other and unknown origin | 2,187 | 2.47 |
| | J20 - Acute bronchitis | 2,001 | 2.26 |
| | W19 - Unspecified fall | 1,979 | 2.24 |
| | R05 - Cough | 1,787 | 2.02 |
| | R10,4 - Other and unspecified abdominal pain | 1,627 | 1.84 |
| | J39,9 - Disease of upper respiratory tract, unspecified | 1,592 | 1.80 |
| | J21 - Acute bronchiolitis | 1,438 | 1.63 |
| | J18,9 - Pneumonia, unspecified organism | 1,244 | 1.41 |
| | K52,9 - Noninfective gastroenteritis and colitis, unspecified | 1,122 | 1.27 |
| | A09 - Infectious gastroenteritis and colitis, unspecified | 1,081 | 1.22 |
| | N39,0 - Urinary tract infection, site not specified | 943 | 1.07 |

**Table 39.** Number and Distribution of 20 Leading Diagnosis for Emergency Department Visits by Age and Gender (%), BKHB 2014 (continued)

| Age / Gender | ICD-10 Diagnosis Code | Number of Diagnosis | % |
|---|---|---|---|
| **1-4 Years / Male** | | **111,989** | **100.00** |
| | J03 - Acute tonsillitis | 18,652 | 16.66 |
| | J06 - Acute upper respiratory infections of multiple and unspecified sites | 16,760 | 14.97 |
| | J00 - Acute nasopharyngitis [common cold] | 6,338 | 5.66 |
| | J06,9 - Acute upper respiratory infection, unspecified | 5,559 | 4.96 |
| | J02 - Acute pharyngitis | 5,323 | 4.75 |
| | R11 - Nausea and vomiting | 3,751 | 3.35 |
| | J39 - Other diseases of upper respiratory tract | 3,408 | 3.04 |
| | W01 - Fall on same level from slipping, tripping and stumbling | 3,016 | 2.69 |
| | J20 - Acute bronchitis | 2,975 | 2.66 |
| | W19 - Unspecified fall | 2,672 | 2.39 |
| | R50 - Fever of other and unknown origin | 2,560 | 2.29 |
| | R05 - Cough | 2,484 | 2.22 |
| | J21 - Acute bronchiolitis | 2,076 | 1.85 |
| | R10,4 - Other and unspecified abdominal pain | 1,984 | 1.77 |
| | J39,9 - Disease of upper respiratory tract, unspecified | 1,870 | 1.67 |
| | A09 - Infectious gastroenteritis and colitis, unspecified | 1,471 | 1.31 |
| | J18,9 - Pneumonia, unspecified organism | 1,451 | 1.30 |
| | K52,9 - Noninfective gastroenteritis and colitis, unspecified | 1,445 | 1.29 |
| | T78,4 - Other and unspecified allergy | 829 | 0.74 |
| | K52,8 - Other specified noninfective gastroenteritis and colitis | 809 | 0.72 |
| | Other diagnoses | 26,556 | 23.71 |
| **5-14 Years / Female** | | **120,942** | **100.00** |
| | J03 - Acute tonsillitis | 16,425 | 13.58 |
| | J06 - Acute upper respiratory infections of multiple and unspecified sites | 13,462 | 11.13 |
| | J06,9 - Acute upper respiratory infection, unspecified | 7,770 | 6.42 |
| | J02 - Acute pharyngitis | 6,687 | 5.53 |
| | R10,4 - Other and unspecified abdominal pain | 4,950 | 4.09 |
| | J00 - Acute nasopharyngitis [common cold] | 4,794 | 3.96 |
| | R11 - Nausea and vomiting | 4,727 | 3.91 |
| | W01 - Fall on same level from slipping, tripping and stumbling | 3,930 | 3.25 |
| | J39 - Other diseases of upper respiratory tract | 3,207 | 2.65 |
| | W19 - Unspecified fall | 3,074 | 2.54 |
| | N39,0 - Urinary tract infection, site not specified | 2,204 | 1.82 |
| | J18,9 - Pneumonia, unspecified organism | 2,082 | 1.72 |
| | R50 - Fever of other and unknown origin | 1,935 | 1.60 |
| | J39,9 - Disease of upper respiratory tract, unspecified | 1,522 | 1.26 |
| | R05 - Cough | 1,407 | 1.16 |
| | J20 - Acute bronchitis | 1,371 | 1.13 |
| | J03,9 - Acute tonsillitis, unspecified | 1,222 | 1.01 |
| | H66,9 - Otitis media, unspecified | 1,200 | 0.99 |
| | J02,9 - Acute pharyngitis, unspecified | 1,194 | 0.99 |
| | K52,9 - Noninfective gastroenteritis and colitis, unspecified | 1,158 | 0.96 |
| | Other diagnoses | 36,621 | 30.28 |
| **5-14 Years / Male** | | **120,942** | **100.00** |
| | J03 - Acute tonsillitis | 19,079 | 12.91 |
| | J06 - Acute upper respiratory infections of multiple and unspecified sites | 15,794 | 10.69 |
| | J06,9 - Acute upper respiratory infection, unspecified | 8,762 | 5.93 |
| | J02 - Acute pharyngitis | 7,385 | 5.00 |
| | W01 - Fall on same level from slipping, tripping and stumbling | 6,948 | 4.70 |
| | W19 - Unspecified fall | 5,950 | 4.03 |
| | J00 - Acute nasopharyngitis [common cold] | 5,332 | 3.61 |
| | R11 - Nausea and vomiting | 4,907 | 3.32 |
| | R10,4 - Other and unspecified abdominal pain | 4,802 | 3.25 |
| | J39 - Other diseases of upper respiratory tract | 3,625 | 2.45 |
| | J18,9 - Pneumonia, unspecified organism | 2,117 | 1.43 |
| | R50 - Fever of other and unknown origin | 2,025 | 1.37 |
| | J20 - Acute bronchitis | 1,976 | 1.34 |
| | M79,9 - Soft tissue disorder, unspecified | 1,748 | 1.18 |
| | R05 - Cough | 1,720 | 1.16 |
| | J39,9 - Disease of upper respiratory tract, unspecified | 1,670 | 1.13 |
| | A09 - Infectious gastroenteritis and colitis, unspecified | 1,347 | 0.91 |
| | J03,9 - Acute tonsillitis, unspecified | 1,342 | 0.91 |
| | J02,9 - Acute pharyngitis, unspecified | 1,342 | 0.91 |
| | T78,4 - Other and unspecified allergy | 1,303 | 0.88 |
| | Other diagnoses | 48,607 | 32.89 |
| **15-24 Years / Female** | | **199,283** | **100.00** |
| | J06,9 - Acute upper respiratory infection, unspecified | 11,536 | 5.90 |
| | R52 - Pain, unspecified | 9,321 | 4.77 |

**Table 39.** Number and Distribution of 20 Leading Diagnosis for Emergency Department Visits by Age and Gender (%), BKHB 2014 (continued)

| Age / Gender | ICD-10 Diagnosis Code | Number of Diagnosis | % |
|---|---|---|---|
| | J02 - Acute pharyngitis | 9,314 | 4.76 |
| | R10,4 - Other and unspecified abdominal pain | 7,815 | 4.00 |
| | J03 - Acute tonsillitis | 7,323 | 3.75 |
| | W01 - Fall on same level from slipping, tripping and stumbling | 6,991 | 3.58 |
| | Z00,0 - Encounter for general adult medical examination | 6,822 | 3.49 |
| | R11 - Nausea and vomiting | 6,818 | 3.49 |
| | W19 - Unspecified fall | 5,357 | 2.74 |
| | R53 - Malaise and fatigue | 5,331 | 2.73 |
| | J06 - Acute upper respiratory infections of multiple and unspecified sites | 4,767 | 2.44 |
| | M79,1 - Myalgia | 4,290 | 2.19 |
| | W51 - Accidental striking against or bumped into by another person | 3,989 | 2.04 |
| | R51 - Headache | 3,954 | 2.02 |
| | R10 - Abdominal and pelvic pain | 2,926 | 1.50 |
| | R05 - Cough | 2,917 | 1.49 |
| | J02,9 - Acute pharyngitis, unspecified | 2,861 | 1.46 |
| | J39 - Other diseases of upper respiratory tract | 2,770 | 1.42 |
| | M54,5 - Low back pain | 2,635 | 1.35 |
| | R07,4 - Pain in chest, unspecified | 2,470 | 1.26 |
| | Other diagnoses | 85,038 | 42.67 |
| **15-24 Years / Male** | | **195,538** | **100.00** |
| | J06,9 - Acute upper respiratory infection, unspecified | 11,536 | 5.90 |
| | R52 - Pain, unspecified | 9,321 | 4.77 |
| | J02 - Acute pharyngitis | 9,314 | 4.76 |
| | R10,4 - Other and unspecified abdominal pain | 7,815 | 4.00 |
| | J03 - Acute tonsillitis | 7,323 | 3.75 |
| | W01 - Fall on same level from slipping, tripping and stumbling | 6,991 | 3.58 |
| | Z00,0 - Encounter for general adult medical examination | 6,822 | 3.49 |
| | R11 - Nausea and vomiting | 6,818 | 3.49 |
| | W19 - Unspecified fall | 5,357 | 2.74 |
| | R53 - Malaise and fatigue | 5,331 | 2.73 |
| | J06 - Acute upper respiratory infections of multiple and unspecified sites | 4,767 | 2.44 |
| | M79,1 - Myalgia | 4,290 | 2.19 |
| | W51 - Accidental striking against or bumped into by another person | 3,989 | 2.04 |
| | R51 - Headache | 3,954 | 2.02 |
| | R10 - Abdominal and pelvic pain | 2,926 | 1.50 |
| | R05 - Cough | 2,917 | 1.49 |
| | J02,9 - Acute pharyngitis, unspecified | 2,861 | 1.46 |
| | J39 - Other diseases of upper respiratory tract | 2,770 | 1.42 |
| | M54,5 - Low back pain | 2,635 | 1.35 |
| | R07,4 - Pain in chest, unspecified | 2,470 | 1.26 |
| | Other diagnoses | 85,331 | 43.64 |
| **25-44 Years / Female** | | **398,572** | **100.00** |
| | R10,4 - Other and unspecified abdominal pain | 24,499 | 6.15 |
| | J06,9 - Acute upper respiratory infection, unspecified | 22,005 | 5.52 |
| | R52 - Pain, unspecified | 21,132 | 5.30 |
| | R11 - Nausea and vomiting | 19,250 | 4.83 |
| | J02 - Acute pharyngitis | 19,092 | 4.79 |
| | J03 - Acute tonsillitis | 15,442 | 3.87 |
| | R51 - Headache | 15,035 | 3.77 |
| | R53 - Malaise and fatigue | 12,852 | 3.22 |
| | M79,1 - Myalgia | 10,466 | 2.63 |
| | R10 - Abdominal and pelvic pain | 8,890 | 2.23 |
| | J06 - Acute upper respiratory infections of multiple and unspecified sites | 7,110 | 1.78 |
| | M54,5 - Low back pain | 6,648 | 1.67 |
| | R42 - Dizziness and giddiness | 6,586 | 1.65 |
| | N91 - Absent, scanty and rare menstruation | 6,296 | 1.58 |
| | R05 - Cough | 6,046 | 1.52 |
| | J02,9 - Acute pharyngitis, unspecified | 5,743 | 1.44 |
| | R07,4 - Pain in chest, unspecified | 5,650 | 1.42 |
| | R52,0 - Acute pain | 5,550 | 1.39 |
| | R52,9 - Pain, unspecified | 5,489 | 1.38 |
| | W01 - Fall on same level from slipping, tripping and stumbling | 5,485 | 1.38 |
| | Other diagnoses | 169,306 | 42.48 |
| **25-44 Years / Male** | | **375501** | **100.00** |
| | J06,9 - Acute upper respiratory infection, unspecified | 22,492 | 5.99 |
| | R52 - Pain, unspecified | 19,920 | 5.30 |
| | J02 - Acute pharyngitis | 18,000 | 4.79 |
| | R10,4 - Other and unspecified abdominal pain | 15,391 | 4.10 |
| | J03 - Acute tonsillitis | 14,770 | 3.93 |
| | R11 - Nausea and vomiting | 12,502 | 3.33 |
| | M79,1 - Myalgia | 12,242 | 3.26 |
| | R53 - Malaise and fatigue | 12,194 | 3.25 |
| | Z00,0 - Encounter for general adult medical examination | 9,517 | 2.53 |

**Table 39.** Number and Distribution of 20 Leading Diagnosis for Emergency Department Visits by Age and Gender (%), BKHB 2014 (continued)

| Age / Gender | ICD-10 Diagnosis Code | Number of Diagnosis | % |
|---|---|---|---|
| | M54,5 - Low back pain | 9,264 | 2.47 |
| | R51 - Headache | 9,137 | 2.43 |
| | W01 - Fall on same level from slipping, tripping and stumbling | 8,772 | 2.34 |
| | R07,4 - Pain in chest, unspecified | 8,094 | 2.16 |
| | J06 - Acute upper respiratory infections of multiple and unspecified sites | 7,476 | 1.99 |
| | W19 - Unspecified fall | 6,529 | 1.74 |
| | R10 - Abdominal and pelvic pain | 6,120 | 1.63 |
| | R05 - Cough | 6,008 | 1.60 |
| | W51 - Accidental striking against or bumped into by another person | 5,999 | 1.60 |
| | J02,9 - Acute pharyngitis, unspecified | 5,870 | 1.56 |
| | Y35 - Legal intervention | 5,241 | 1.40 |
| | Other diagnoses | 159,963 | 42.60 |
| **45-64 Years / Female** | | **217,205** | **100.00** |
| | R52 - Pain, unspecified | 11,991 | 5.52 |
| | J06.9 - Acute upper respiratory infection. unspecified | 11.278 | 5.19 |
| | J02 - Acute pharyngitis | 9.756 | 4.49 |
| | R10.4 - Other and unspecified abdominal pain | 9.628 | 4.43 |
| | R11 - Nausea and vomiting | 9.620 | 4.43 |
| | R51 - Headache | 9.373 | 4.32 |
| | J03 - Acute tonsillitis | 7.976 | 3.67 |
| | R53 - Malaise and fatigue | 7.647 | 3.52 |
| | M79.1 - Myalgia | 6.936 | 3.19 |
| | R07.4 - Pain in chest. unspecified | 6.654 | 3.06 |
| | I10 - Essential (primary) hypertension | 6.158 | 2.84 |
| | R42 - Dizziness and giddiness | 5.058 | 2.33 |
| | M54.5 - Low back pain | 4.322 | 1.99 |
| | W01 - Fall on same level from slipping. tripping and stumbling | 4.083 | 1.88 |
| | R10 - Abdominal and pelvic pain | 3.749 | 1.73 |
| | R05 - Cough | 3.684 | 1.70 |
| | J02.9 - Acute pharyngitis. unspecified | 3.608 | 1.66 |
| | J06 - Acute upper respiratory infections of multiple and unspecified sites | 3.526 | 1.62 |
| | W19 - Unspecified fall | 3.397 | 1.56 |
| | R52.0 - Acute pain | 2.932 | 1.35 |
| | Other diagnoses | 85.829 | 39.52 |
| **45-64 Years / Male** | | **172.560** | **100.00** |
| | R52 - Pain. unspecified | 9.813 | 5.69 |
| | J06.9 - Acute upper respiratory infection. unspecified | 8.221 | 4.76 |
| | R07.4 - Pain in chest. unspecified | 7.301 | 4.23 |
| | R10.4 - Other and unspecified abdominal pain | 6.927 | 4.01 |
| | J02 - Acute pharyngitis | 6.757 | 3.92 |
| | R53 - Malaise and fatigue | 5.823 | 3.37 |
| | R11 - Nausea and vomiting | 5.742 | 3.33 |
| | J03 - Acute tonsillitis | 5.331 | 3.09 |
| | M79.1 - Myalgia | 5.187 | 3.01 |
| | R51 - Headache | 4.444 | 2.58 |
| | I10 - Essential (primary) hypertension | 3.930 | 2.28 |
| | M54.5 - Low back pain | 3.810 | 2.21 |
| | W01 - Fall on same level from slipping. tripping and stumbling | 3.176 | 1.84 |
| | R42 - Dizziness and giddiness | 3.065 | 1.78 |
| | R10 - Abdominal and pelvic pain | 3.005 | 1.74 |
| | Z00.0 - Encounter for general adult medical examination | 2.884 | 1.67 |
| | J06 - Acute upper respiratory infections of multiple and unspecified sites | 2.881 | 1.67 |
| | W19 - Unspecified fall | 2.783 | 1.61 |
| | R05 - Cough | 2.662 | 1.54 |
| | J02.9 - Acute pharyngitis. unspecified | 2.613 | 1.51 |
| | Other diagnoses | 76.205 | 44.16 |
| **65-74 Years / Female** | | **54.450** | **100.00** |
| | I10 - Essential (primary) hypertension | 2.913 | 5.35 |
| | R52 - Pain. unspecified | 2.872 | 5.27 |
| | R11 - Nausea and vomiting | 2.663 | 4.89 |
| | R07.4 - Pain in chest. unspecified | 2.468 | 4.53 |
| | R10.4 - Other and unspecified abdominal pain | 2.400 | 4.41 |
| | J06.9 - Acute upper respiratory infection. unspecified | 2.311 | 4.24 |
| | R53 - Malaise and fatigue | 1.978 | 3.63 |
| | J02 - Acute pharyngitis | 1.805 | 3.31 |
| | J03 - Acute tonsillitis | 1.552 | 2.85 |
| | R51 - Headache | 1.432 | 2.63 |
| | R42 - Dizziness and giddiness | 1.409 | 2.59 |
| | M79.1 - Myalgia | 1.265 | 2.32 |
| | W84 - Unspecified threat to breathing | 1.074 | 1.97 |
| | W01 - Fall on same level from slipping. tripping and stumbling | 1.063 | 1.95 |
| | W19 - Unspecified fall | 1.021 | 1.88 |
| | R10 - Abdominal and pelvic pain | 849 | 1.56 |
| | R05 - Cough | 844 | 1.55 |
| | J02.9 - Acute pharyngitis. unspecified | 842 | 1.55 |
| | M54.5 - Low back pain | 700 | 1.29 |

**Table 39.** Number and Distribution of 20 Leading Diagnosis for Emergency Department Visits by Age and Gender (%), BKHB 2014 (continued)

| Age / Gender | ICD-10 Diagnosis Code | Number of Diagnosis | % |
|---|---|---|---|
| | R52.9 - Pain. unspecified | 678 | 1.25 |
| | Other diagnoses | 22.311 | 40.98 |
| **65-74 Years / Male** | | **42.058** | **100.00** |
| | R52 - Pain. unspecified | 2.267 | 5.39 |
| | R07.4 - Pain in chest. unspecified | 2.220 | 5.28 |
| | I10 - Essential (primary) hypertension | 1.794 | 4.27 |
| | R10.4 - Other and unspecified abdominal pain | 1.765 | 4.20 |
| | J06.9 - Acute upper respiratory infection. unspecified | 1.627 | 3.87 |
| | R11 - Nausea and vomiting | 1.586 | 3.77 |
| | R53 - Malaise and fatigue | 1.419 | 3.37 |
| | W84 - Unspecified threat to breathing | 1.310 | 3.11 |
| | J02 - Acute pharyngitis | 1.193 | 2.84 |
| | J03 - Acute tonsillitis | 1.072 | 2.55 |
| | R42 - Dizziness and giddiness | 920 | 2.19 |
| | R51 - Headache | 839 | 1.99 |
| | M79.1 - Myalgia | 785 | 1.87 |
| | R10 - Abdominal and pelvic pain | 720 | 1.71 |
| | R06.0 - Dispne | 705 | 1.68 |
| | R05 - Cough | 617 | 1.47 |
| | R07.3 - Other chest pain | 603 | 1.43 |
| | W01 - Fall on same level from slipping. tripping and stumbling | 586 | 1.39 |
| | W19 - Unspecified fall | 579 | 1.38 |
| | W83 - Other specified threats to breathing | 563 | 1.34 |
| | Other diagnoses | 18.888 | 44.91 |
| **75+ Years / Female** | | **45.669** | **100.00** |
| | I10 - Essential (primary) hypertension | 2.675 | 5.86 |
| | R07.4 - Pain in chest. unspecified | 2.531 | 5.54 |
| | R11 - Nausea and vomiting | 2.298 | 5.03 |
| | R52 - Pain. unspecified | 2.162 | 4.73 |
| | R10.4 - Other and unspecified abdominal pain | .142 | 4.69 |
| | J06.9 - Acute upper respiratory infection. unspecified | 1.463 | 3.20 |
| | W84 - Unspecified threat to breathing | 1.414 | 3.10 |
| | R53 - Malaise and fatigue | 1.366 | 2.99 |
| | W19 - Unspecified fall | 1.250 | 2.74 |
| | R42 - Dizziness and giddiness | 1.150 | 2.52 |
| | W01 - Fall on same level from slipping. tripping and stumbling | 1.110 | 2.43 |
| | R51 - Headache | 969 | 2.12 |
| | J02 - Acute pharyngitis | 939 | 2.06 |
| | M79.1 - Myalgia | 778 | 1.70 |

**Table 39.** Number and Distribution of 20 Leading Diagnosis for Emergency Department Visits by Age and Gender (%), BKHB 2014 (continued)

| Age / Gender | ICD-10 Diagnosis Code | Number of Diagnosis | % |
|---|---|---|---|
| | J03 - Acute tonsillitis | 737 | 1.61 |
| | R10 - Abdominal and pelvic pain | 678 | 1.48 |
| | R05 - Cough | 669 | 1.46 |
| | Z00.0 - Encounter for general adult medical examination | 602 | 1.32 |
| | R07.3 - Other chest pain | 576 | 1.26 |
| | W83 - Other specified threats to breathing | 531 | 1.16 |
| | Other diagnoses | 19.629 | 42.98 |
| **75+ Years / Male** | | **33.154** | **100.00** |
| | R52 - Pain. unspecified | 1.836 | 5.54 |
| | R07.4 - Pain in chest. unspecified | 1.755 | 5.29 |
| | R10.4 - Other and unspecified abdominal pain | 1.431 | 4.32 |
| | I10 - Essential (primary) hypertension | 1.326 | 4.00 |
| | R11 - Nausea and vomiting | 1.274 | 3.84 |
| | W84 - Unspecified threat to breathing | 1.183 | 3.57 |
| | R53 - Malaise and fatigue | 1.072 | 3.23 |
| | J06.9 - Acute upper respiratory infection. unspecified | 1.039 | 3.13 |
| | R42 - Dizziness and giddiness | 750 | 2.26 |
| | W19 - Unspecified fall | 665 | 2.01 |
| | W01 - Fall on same level from slipping. tripping and stumbling | 588 | 1.77 |
| | R06.0 - Dispne | 561 | 1.69 |
| | J02 - Acute pharyngitis | 548 | 1.65 |
| | N39.0 - Urinary tract infection. site not specified | 544 | 1.64 |
| | J03 - Acute tonsillitis | 537 | 1.62 |
| | Z00.0 - Encounter for general adult medical examination | 525 | 1.58 |
| | R07.3 - Other chest pain | 521 | 1.57 |
| | R10 - Abdominal and pelvic pain | 488 | 1.47 |
| | M79.1 - Myalgia | 466 | 1.41 |
| | R06 - Abnormalities of breathing | 465 | 1.40 |
| | Other diagnoses | 15.580 | 46.99 |

**Table 40.** Number and Distribution of Emergency Department Visits Related to External causes of morbidity and mortality (%). BKHB 2014

| | Number of Visits | % | % |
|---|---|---|---|
| All Hospitals | 190.306 | 100.00 | |
| Teaching Hospitals | 153.378 | 80.60 | 100.00 |
| Okmeydanı | 77.728 | 40.84 | 50.68 |
| Şişli Hamidiye Etfal | 39.714 | 20.87 | 25.89 |
| GOP Taksim | 35.936 | 18.88 | 23.43 |
| Secondary Care Hospitals | 36.928 | 19.40 | 100.00 |
| Eyüp | 12.115 | 6.37 | 32.81 |
| İstinye | 14.000 | 7.36 | 37.91 |
| Kâğıthane | 5.925 | 3.11 | 16.04 |
| Sarıyer İsmail Akgün | 4.888 | 2.57 | 13.24 |

**Table 41.** Number and Distribution of Specific Diagnosis Related to External causes of morbidity and mortality Visits (%). BKHB 2014

| ICD 10 Code | Number of Diagnosis | % |
|---|---|---|
| W01 - Fall on same level from slipping. tripping and stumbling | 51.533 | 26.90 |
| W19 - Unspecified fall | 42.475 | 22.17 |
| W51 - Accidental striking against or bumped into by another person | 15.350 | 8.01 |
| W84 - Unspecified threat to breathing | 14.230 | 7.43 |
| Y35 - Legal intervention | 12.686 | 6.62 |
| W22 - Striking against or struck by other objects | 7.641 | 3.99 |
| W83 - Other specified threats to breathing | 5.329 | 2.78 |
| W25 - Contact with sharp glass | 5.181 | 2.70 |
| W45 - Foreign body or object entering through skin | 3.920 | 2.05 |
| W54 - Contact with dog | 3.635 | 1.90 |
| W57 - Bitten or stung by nonvenomous insect and other nonvenomous arthropods | 3.464 | 1.81 |
| W18 - Other slipping. tripping and stumbling and falls | 3.313 | 1.73 |
| X44 - Accidental poisoning by and exposure to other and unspecified drugs. medicaments and biological substances | 3.074 | 1.60 |
| Y28 - Contact with sharp object. undetermined intent | 3.053 | 1.59 |
| V09.3 - Pedestrian injured in unspecified traffic accident | 2.070 | 1.08 |
| W26 - Contact with knife. sword or dagger | 1.553 | 0.81 |
| V49.5 - Passenger injured in collision with other and unspecified motor vehicles in traffic accident | 1.022 | 0.53 |
| W50 - Accidental hit. strike. kick. twist. bite or scratch by another person | 975 | 0.51 |
| W23 - Caught. crushed. jammed or pinched in or between objects | 890 | 0.46 |
| W55 - Contact with other mammals | 591 | 0.31 |
| Other diagnoses | 9.589 | 5.01 |

**Table 42.** Number and Distribution of Emergency Department Visits Related to External causes of morbidity and mortality by Age and Gender (%). BKHB 2014

| | Number of Visits | % | |
|---|---|---|---|
| Total | 190.306 | | 100.00 |
| Female | | 73.298 | 38.52 |
| Male | | 117.008 | 61.48 |
| Under 15 Years | 41.736 | 21.93 | 100.00 |
| Under 1 Year | 816 | 0.43 | 1.96 |
| 1-4 Years | 13.425 | 7.05 | 32.17 |
| 5-14 Years | 27.495 | 14.45 | 65.88 |
| 15-24 Years | 40.590 | | 21.33 |
| 25-44 Years | 63.182 | | 33.20 |
| 45-64 Years | 29.152 | | 15.32 |
| 65 Years and Over | 15.646 | 8.22 | 100.00 |
| 65-74 Years | 7.725 | 4.06 | 49.37 |
| 75 Years and Over | 7.921 | 4.16 | 50.63 |
| Gender and Age | | | |
| Female | 73.298 | | 100.00 |
| Under 15 Years | 15.698 | 21.42 | 100.00 |
| Under 1 Year | 378 | 0.52 | 2.41 |
| 1-4 Years | 5.710 | 7.79 | 36.37 |
| 5-14 Years | 9.610 | 13.11 | 61.22 |
| 15-24 Years | 12.226 | | 16.68 |
| 25-44 Years | 22.682 | | 30.94 |
| 45-64 Years | 13.955 | | 19.04 |
| 65 Years and Over | 8.737 | 11.92 | 100.00 |
| 65-74 Years | 4.051 | 5.53 | 46.37 |
| 75 Years and Over | 4.686 | 6.39 | 53.63 |
| Male | 117.008 | | 100.00 |
| Under 15 Years | 26.038 | 22.25 | 100.00 |
| Under 1 Year | 438 | 0.37 | 1.68 |
| 1-4 Years | 7.715 | 6.59 | 29.63 |
| 5-14 Years | 17.885 | 15.29 | 68.69 |
| 15-24 Years | 28.364 | 24.24 | |
| 25-44 Years | 40.500 | 34.61 | |
| 45-64 Years | 15.197 | 12.99 | |
| 65 Years and Over | 6.909 | 5.90 | 100.00 |
| 65-74 Years | 3.674 | 3.14 | 53.18 |
| 75 Years and Over | 3.235 | 2.76 | 46.82 |

**Table 43.** 10 Leading Diagnosis Related to External causes of morbidity and mortality by Age (%). BKHB 2014

| Age | ICD-10 Diagnosis Code | Number of Diagnosis | % |
|---|---|---|---|
| **0-14 Years** | | **42.007** | **100.00** |
| | W01 - Fall on same level from slipping. tripping and stumbling | 16.545 | 39.39 |
| | W19 - Unspecified fall | 13.908 | 33.11 |
| | W22 - Striking against or struck by other objects | 2.246 | 5.35 |
| | W18 - Other slipping. tripping and stumbling and falls | 1.197 | 2.85 |
| | W57 - Bitten or stung by nonvenomous insect and other nonvenomous arthropods | 1.042 | 2.48 |
| | W25 - Contact with sharp glass | 952 | 2.27 |
| | W45 - Foreign body or object entering through skin | 817 | 1.94 |
| | X44 - Accidental poisoning by and exposure to other and unspecified drugs. medicaments and biological substances | 602 | 1.43 |
| | W51 - Accidental striking against or bumped into by another person | 566 | 1.35 |
| | W54 - Contact with dog | 560 | 1.33 |
| | Other diagnoses | 3.572 | 8.50 |
| **15-64 Years** | | **133842** | **100.00** |
| | W01 - Fall on same level from slipping. tripping and stumbling | 31.640 | 23.64 |
| | W19 - Unspecified fall | 25.047 | 18.71 |
| | W51 - Accidental striking against or bumped into by another person | 14.606 | 10.91 |
| | Y35 - Legal intervention | 12.464 | 9.31 |
| | W84 - Unspecified threat to breathing | 8.693 | 6.49 |
| | W22 - Striking against or struck by other objects | 5.167 | 3.86 |
| | W25 - Contact with sharp glass | 4.124 | 3.08 |
| | W83 - Other specified threats to breathing | 3.137 | 2.34 |
| | W45 - Foreign body or object entering through skin | 2.980 | 2.23 |
| | W54 - Contact with dog | 2.894 | 2.16 |
| | Other diagnoses | 23.090 | 17.25 |
| **65+ Years** | | **15.725** | **100.00** |
| | W84 - Unspecified threat to breathing | 4.983 | 31.69 |
| | W19 - Unspecified fall | 3.520 | 22.38 |
| | W01 - Fall on same level from slipping. tripping and stumbling | 3.348 | 21.29 |
| | W83 - Other specified threats to breathing | 1.924 | 12.24 |
| | W22 - Striking against or struck by other objects | 228 | 1.45 |

**Table 43.** 10 Leading Diagnosis Related to External causes of morbidity and mortality by Age (%). BKHB 2014 (continued)

| Age | ICD-10 Diagnosis Code | Number of Diagnosis | % |
|---|---|---|---|
| | W51 - Accidental striking against or bumped into by another person | 178 | 1.13 |
| | X44 - Accidental poisoning by and exposure to other and unspecified drugs. medicaments and biological substances | 156 | 0.99 |
| | V09.3 - Pedestrian injured in unspecified traffic accident | 134 | 0.85 |
| | W45 - Foreign body or object entering through skin | 123 | 0.78 |
| | Other diagnoses | 950 | 6.04 |

**Table 44.** Number and Distribution of Tests Ordered in Emergency Department Visits, BKHB 2014

| Type of Test | Number of Tests | % |
|---|---|---|
| All Tests | 4,607,834 | 100.00 |
| Complete Blood Count | 330,212 | 7.17 |
| Creatinine | 243,289 | 5.28 |
| Blood Urea Nitrogen | 242,259 | 5.26 |
| Na | 238,507 | 5.18 |
| Potassium K | 238,320 | 5.17 |
| Glucose | 237,623 | 5.16 |
| AST | 235,127 | 5.10 |
| Ca | 227,775 | 4.94 |
| ALT | 225,015 | 4.88 |
| Cl | 201,862 | 4.38 |
| Total direct bilirubin | 199,247 | 4.32 |
| Amylase | 166,022 | 3.60 |
| LDH | 151,047 | 3.28 |
| Urinalaysis | 147,038 | 3.19 |
| CK | 118,812 | 2.58 |
| CK-MB Mass | 102,547 | 2.23 |
| CRP. turbidimetric | 100,416 | 2.18 |
| CRP. nephelometric | 98,006 | 2.13 |
| GGT | 96,840 | 2.10 |
| Troponin I | 91,483 | 1.99 |
| Acid hemolysin test (Ham test) | 88,626 | 1.92 |
| Albumin | 86,632 | 1.88 |
| Alkaline Phosphatase | 84,026 | 1.82 |
| Prothrombin Time (Coagulometric ) | 79,914 | 1.73 |
| APTT | 77,208 | 1.68 |
| Lipase | 62,084 | 1.35 |
| Troponin T | 47,050 | 1.02 |
| Magnesium | 46,799 | 1.02 |
| Arterial Blood Gases | 45,613 | 0.99 |
| CK-MB | 44,626 | 0.97 |
| Other | 253,809 | 5.51 |

**Table 45.** Number and Distribution of Tests Ordered in Emergency Department Visits, BKHB Teaching Hospitals 2014

| Type of Test | Number of Tests | % |
|---|---|---|
| All Tests | 4,235,045 | 100.00 |
| Complete Blood Count | 272,057 | 6.42 |
| Creatinine | 224,159 | 5.29 |
| Blood Urea Nitrogen | 224,081 | 5.29 |
| Na | 220,053 | 5.20 |
| K | 219,791 | 5.19 |
| Glucose | 218,741 | 5.17 |
| AST | 215,187 | 5.08 |
| Ca | 213,837 | 5.05 |
| ALT | 205,131 | 4.84 |
| Total direct bilirubin | 190,472 | 4.50 |
| Cl | 188,663 | 4.45 |
| Amylase | 162,946 | 3.85 |
| LDH | 147,394 | 3.48 |
| Urinalaysis | 130,866 | 3.09 |
| CK | 111,164 | 2.62 |
| GGT | 95,897 | 2.26 |
| CRP, nephelometric | 94,949 | 2.24 |
| Acid hemolysin test (Ham test) | 88,626 | 2.09 |
| CRP, turbidimetric | 88,210 | 2.08 |
| Albumin | 85,596 | 2.02 |
| CK-MB Mass | 84,529 | 2.00 |
| Alcaline Phosphatase | 81,742 | 1.93 |
| Prothrombin Time (Coagulometric ) | 78,139 | 1.85 |
| APTT | 76,238 | 1.80 |
| Troponin I | 69,349 | 1.64 |
| Lipase | 61,785 | 1.46 |
| Troponin T | 47,050 | 1.11 |
| Magnesium | 46,581 | 1.10 |
| Arterial Blood Gases | 45,464 | 1.07 |
| CK-MB | 36,914 | 0.87 |
| Other | 209,434 | 4.95 |

**Table 46.** Number and Distribution of Tests Ordered in Emergency Department Visits, BKHB Secondary Care Hospitals 2014

| Type of Test | Number of Tests | % |
|---|---|---|
| All Tests | 372,789 | 100.00 |
| Complete Blood Count | 58,155 | 15.60 |
| Troponin I | 22,134 | 5.94 |
| AST | 19,940 | 5.35 |
| ALT | 19,884 | 5.33 |
| Creatinine | 19,130 | 5.13 |
| Glucose | 18,882 | 5.07 |
| Potassium | 18,529 | 4.97 |
| Na | 18,454 | 4.95 |
| Blood Urea Nitrogen | 18,178 | 4.88 |
| CK-MB Mass | 18,018 | 4.83 |
| Urine Dipstick Analysis | 17,105 | 4.59 |
| Microscopic urinalysis | 16,172 | 4.34 |
| Ca | 13,938 | 3.74 |
| Cl | 13,199 | 3.54 |
| CRP, nephelometric | 12,206 | 3.27 |
| Total direct bilirubin | 8,775 | 2.35 |
| CK-MB | 7,712 | 2.07 |
| CK | 7,648 | 2.05 |
| Miyoglobin | 5,453 | 1.46 |
| LDH | 3,653 | 0.98 |
| Amylase | 3,076 | 0.83 |
| CRP, turbidimetric | 3,057 | 0.82 |
| Beta-hCG (Total hCG) | 2,893 | 0.78 |
| Alkaline Phosphatase | 2,284 | 0.61 |
| Prothrombin Time (Coagulometric ) | 1,775 | 0.48 |
| Cholesterol | 1,629 | 0.44 |
| Trigliserid | 1,609 | 0.43 |
| HDL cholesterol | 1,600 | 0.43 |
| LDL cholesterol | 1,573 | 0.42 |
| ASO (Nephelometric) | 1,340 | 0.36 |
| Other | 14,788 | 3.97 |

**Table 47.** Number and Distribution of Imaging Tests Ordered in Emergency Department Visits, BKHB 2014

| Type of Imaging | Number of Imaging | % |
|---|---|---|
| Any Imaging | 897,520 | 100.00 |
| X-ray | 584,576 | 65.13 |
| Computed Tomography Scan | 178,773 | 19.92 |
| Ultrasound | 92,966 | 10.36 |
| Magnetic Resonance Imaging Scan | 24,816 | 2.76 |
| Color Doppler | 15,972 | 1.78 |
| Other Imaging | 417 | 0.05 |

**Table 48.** Number and Distribution of Imaging Tests Ordered in Emergency Department Visits, BKHB Teaching Hospitals 2014

| Type of Imaging | Number of Imaging | % |
|---|---|---|
| Any Imaging | 784,398 | 100.00 |
| X-ray | 484,033 | 61.71 |
| Computed Tomography Scan | 173,798 | 22.16 |
| Ultrasound | 88,074 | 11.23 |
| Magnetic Resonance Imaging Scan | 23,206 | 2.96 |
| Color Doppler | 14,971 | 1.91 |
| Other Imaging | 316 | 0.04 |

**Table 49.** Number and Distribution of Imaging Tests Ordered in Emergency Department Visits, BKHB Secondary Care Hospitals 2014

| Type of Imaging | Number of Imaging | % |
|---|---|---|
| Any Imaging | 113,122 | 100.00 |
| X-ray | 100,543 | 88.88 |
| Computed Tomography Scan | 4,975 | 4.40 |
| Ultrasound | 4,892 | 4.32 |
| Magnetic Resonance Imaging Scan | 1,610 | 1.42 |
| Color Doppler | 1,001 | 0.88 |
| Other Imaging | 101 | 0.09 |

**Table 50.** Number and Distribution of the Imaging Tests by body part, BKHB 2014

| Type of Imaging | Number of Imaging | % |
|---|---|---|
| X-ray | 584,576 | 100.00 |
| Joint X-ray (double site ) single joint | 207,661 | 35.52 |
| Chest X-ray P.A. (single site) | 148,925 | 25.48 |
| Abdominal X-ray | 98,802 | 16.90 |
| Chest X-ray (double site) | 29,259 | 5.01 |
| Joint X-ray (double site ) with comparison | 18,946 | 3.24 |
| All Other X-ray | 80,983 | 13.85 |
| Computed Tomography Scan (CT) | 178,773 | 100.00 |
| CT. Cranial | 70,401 | 39.38 |
| CT. Thorax | 22,391 | 12.52 |
| CT. Extremity (20-50 cm) | 20,197 | 11.30 |
| CT. Cranial (Axial+Coronal) | 16,308 | 9.12 |
| CT. Abdomen. Lower quadrant | 10,037 | 5.61 |
| All Other CT | 39,439 | 22.06 |
| Ultrasound (USG) | 92,966 | 100.00 |
| Abdominal USG | 41,367 | 44.50 |
| Ultrasound. Other | 34,135 | 36.72 |
| Ultrasound. General | 4,611 | 4.96 |
| Renal USG | 4,389 | 4.72 |
| Scrotal USG | 1,530 | 1.65 |
| All Other USG | 6,934 | 7.46 |
| Magnetic Resonance Imaging Scan (MRI) | 24,816 | 100.00 |
| MRI. Diffusion | 13,079 | 52.70 |
| MRI. Cranial | 2,690 | 10.84 |
| MRI. Single joint | 2,437 | 9.82 |
| MRI of the Lumbar Spine | 2,293 | 9.24 |
| MRI of the Cervical Spine | 964 | 3.88 |
| All Other MRI | 3,353 | 13.51 |
| Color Doppler | 15,971 | 100.00 |
| Lower extremity venous doppler. single site | 4,431 | 27.74 |
| Fetal biometry and biophysical profile | 3,081 | 19.29 |
| Lower extremity arterial doppler. single site | 2,870 | 17.97 |
| Pelvic Color Doppler US | 1,246 | 7.80 |
| Obstetric Color Doppler US | 1,241 | 7.77 |
| All Other Color Doppler | 3,102 | 19.42 |

**Table 51.** Number and Distribution of 20 Leading Procedures Ordered in Emergency Department Visits, BKHB 2014

| Type of Procedure | Number of Procedures | % |
|---|---|---|
| All Procesures | 1,548,308 | 100.00 |
| Intramuscular injection | 791,342 | 51.11 |
| Intravenous catheter insertion | 187,596 | 12.12 |
| Electrocardiogram | 131,666 | 8.50 |
| Intravenous injection | 109,347 | 7.06 |
| Intravenous drug therapy | 66,357 | 4.29 |
| Wound dressing | 64,408 | 4.16 |
| Nebulizer therapy | 49,143 | 3.17 |
| Oxygen inhalation therapy | 36,040 | 2.33 |
| Moniterization | 24,196 | 1.56 |
| Subcutaneous injection | 19,288 | 1.25 |
| Suturing and staples | 16,509 | 1.07 |
| Enema administration | 12,854 | 0.83 |
| Follow up of blood gases | 11,056 | 0.71 |
| Bladder catheter | 6,341 | 0.41 |
| Local anesthesia | 5,294 | 0.34 |
| Wound debridement | 3,692 | 0.24 |
| Transfusion of blood or blood products | 3,684 | 0.24 |
| Removal of sutures | 2,086 | 0.13 |
| Burn care | 1,913 | 0.12 |
| Nasogastric intubation | 1,455 | 0.09 |
| Other | 4,041 | 0.26 |

**Table 52.** Number and Distribution of 20 Leading Procedures Ordered in Emergency Department Visits, BKHB Teaching Hospitals 2014

| Type of Procedure | Number of Procedures | % |
|---|---|---|
| All Procedures | 938,987 | 100.00 |
| Intramuscular injection | 375,955 | 40.04 |
| Intravenous catheter insertion | 143,999 | 15.34 |
| Electrocardiogram | 102,025 | 10.87 |
| Intravenous injection | 100,382 | 10.69 |
| Intravenous drug therapy | 48,974 | 5.22 |
| Nebulizer therapy | 39,261 | 4.18 |
| Moniterization | 22,414 | 2.39 |
| Oxygen inhalation therapy | 19,488 | 2.08 |
| Wound dressing | 17,769 | 1.89 |
| Subcutaneous injection | 17,532 | 1.87 |
| Enema administration | 12,811 | 1.36 |
| Follow up of blood gases | 11,007 | 1.17 |
| Suturing and staples | 9,619 | 1.02 |
| Bladder catheter | 5,384 | 0.57 |
| Transfusion of blood or blood products | 3,679 | 0.39 |
| Local anesthesia | 2,903 | 0.31 |
| Nasogastric intubation | 1,138 | 0.12 |
| Removal of sutures | 1,134 | 0.12 |
| Burn care | 1,090 | 0.12 |
| Wound debridement | 726 | 0.08 |
| Other | 1,697 | 0.18 |

**Table 53.** Number and Distribution of 20 Leading Procedures Ordered in Emergency Department Visits, BKHB Secondary Care Hospitals 2014

| Type of Procedure | Number of Procedures | % |
|---|---|---|
| All Procedures | 609,321 | 100.00 |
| Intramuscular injection | 415,387 | 68.17 |
| Wound dressing | 46,639 | 7.65 |
| Intravenous catheter insertion | 43,597 | 7.16 |
| Electrocardiogram | 29,641 | 4.86 |
| Intravenous drug therapy | 17,383 | 2.85 |
| Oxygen inhalation therapy | 16,552 | 2.72 |
| Nebulizer therapy | 9,882 | 1.62 |
| Intravenous injection | 8,965 | 1.47 |
| Suturing and staples | 6,890 | 1.13 |
| Incision and drainage | 2,966 | 0.49 |
| Local anesthesia | 2,391 | 0.39 |
| Moniterization | 1,782 | 0.29 |
| Subcutaneous injection | 1,756 | 0.29 |
| Bladder catheter | 957 | 0.16 |
| Removal of sutures | 952 | 0.16 |
| Burn care | 823 | 0.14 |
| Abscess or hematoma drainage. superficial | 741 | 0.12 |
| Burn debridement. mid size | 335 | 0.05 |
| Burn debridement. small size | 327 | 0.05 |
| Nasogastric intubation | 317 | 0.05 |
| Other | 1,038 | 0.17 |

**Table 54.** Number and Distribution of 20 Most Frequently Administered Drugs in Emergency Department Visits, BKHB 2014

| Active Ingredient | Drug Category | Number Administered | % |
|---|---|---|---|
| Total | | 1,467,000 | 100.00 |
| Diclofenac Sodium | Antiinflammatory And Antirheumatic Products. Non-Steroids | 299,105 | 20.39 |
| Ranitidine | Drugs For Peptic Ulcer And Gastro-Oesophageal Reflux Disease (Gord) | 144,262 | 9.83 |
| Metoclopramide Hcl | Propulsives | 132,986 | 9.07 |
| Salbutamol | Adrenergics. Inhalants | 123,194 | 8.40 |
| Nacl | Blood Substitutes And Perfusion Solutions | 106,622 | 7.27 |
| Paracetamol | Other Analgesics And Antipyretics | 48,389 | 3.30 |
| Furosemide | High-Ceiling Diuretics | 45,833 | 3.12 |
| Pheniramine | Antihistamines For Systemic Use | 43,735 | 2.98 |
| Hyoscine Butylbromide | Belladonna And Derivatives. Plain | 43,039 | 2.93 |
| Captopril | Ace Inhibitors. Plain | 42,115 | 2.87 |
| Methylprednisolone Sodium Succinate | Corticosteroids For Systemic Use. Plain | 35,578 | 2.43 |
| Omeprazole | Drugs For Peptic Ulcer And Gastro-Oesophageal Reflux Disease (Gord) | 29,333 | 2.00 |
| Metamizole Sodium | Other Analgesics And Antipyretics | 27,987 | 1.91 |
| Thiocolchicoside | Muscle Relaxants. Centrally Acting Agents | 21,403 | 1.46 |
| Fluticasone Propionate | Other Drugs For Obstructive Airway Diseases. Inhalants | 20,172 | 1.38 |
| Dexketoprofen Trometamol | Antiinflammatory And Antirheumatic Products. Non-Steroids | 19,213 | 1.31 |
| Ipratropium Bromide Monohydrate + Salbutamol Sulfate | Adrenergics. Inhalants | 18,864 | 1.29 |
| Adrenaline | Cardiac Stimulants Excluding Cardiac Glycosides | 16,797 | 1.14 |
| Dexamethasone | Corticosteroids For Systemic Use. Plain | 13,328 | 0.91 |
| Acetylcysteine | Expectorants. Excl. Combinations With Cough Suppressants | 12,615 | 0.86 |
| Other | - | 222,431 | 15.16 |

*Categorization of drugs are presented according to ATC Code

**Table 55.** Number and Distribution of 20 Most Frequently Electronically Prescribed Drugs in Emergency Department Visits, BKHB 2014

| Active Ingredient | Drug Category | Number Administered | % |
|---|---|---|---|
| Total | - | 709,681 | 100.00 |
| Paracetamol | Other Analgesics And Antipyretics | 50,130 | 7.06 |
| Amoxicillin + Clavulanic Acid | Beta-Lactam Antibacterials. Penicillins | 43,715 | 6.16 |
| Benzydamine Hcl + Chlorhexidine Glukonat | Stomatological Preparations | 26,007 | 3.66 |
| Ibuprofen | Antiinflammatory And Antirheumatic Products. Non-Steroids | 21,384 | 3.01 |
| Ibuprofen + Pseudoephedrine Hcl | Antiinflammatory And Antirheumatic Products. Non-Steroids | 21,124 | 2.98 |
| Cefprozil | Other Beta-Lactam Antibacterials | 19,954 | 2.81 |
| Dexketoprofen Trometamol | Antiinflammatory And Antirheumatic Products. Non-Steroids | 19,282 | 2.72 |
| Etodolac | Antiinflammatory And Antirheumatic Products. Non-Steroids | 18,405 | 2.59 |
| Thiocolchicoside | Muscle Relaxants. Centrally Acting Agents | 13,930 | 1.96 |
| Metoclopramide Hcl | Propulsives | 13,837 | 1.95 |
| Benzydamine Hcl | Stomatological Preparations | 13,627 | 1.92 |
| Cephalexin Monohydrate | Other Beta-Lactam Antibacterials | 12,553 | 1.77 |
| Butamirate Citrate | Cough Suppressants. Excl. Combinations With Expectorants | 11,308 | 1.59 |
| Flurbiprofen | Antiinflammatory And Antirheumatic Products. Non-Steroids | 11,189 | 1.58 |
| Cefuroxime Axetil | Other Beta-Lactam Antibacterials | 11,185 | 1.58 |
| Ciprofloxacin | Quinolone Antibacterials | 10,757 | 1.52 |
| Chlorpheniramine Maleate + Oxolamine Citrate + Parasetamol + Pseudoephedrine Hcl | Cough And Cold Preparations | 9,899 | 1.39 |
| Ketoprofen | Antiinflammatory And Antirheumatic Products. Non-Steroids | 9,882 | 1.39 |
| Acetylcysteine + Paracetamol | Cough And Cold Preparations | 9,628 | 1.36 |
| Oxymetazoline Hcl | Decongestants And Other Nasal Preparations For Topical Use | 9,286 | 1.31 |
| Other Diagnoses | - | 352,599 | 49.68 |

* Categorization of drugs are presented according to ATC Code

**Table 56.** Disposition of Emergency Department Visits (%) BKHB 2014

| | Died | Admitted | Transferred* | Discharged | Total |
|---|---|---|---|---|---|
| All Hospitals | 0.02 | 2.53 | 0.32 | 97.13 | 100.00 |
| Teaching Hospitals | 0.02 | 3.43 | 0.35 | 96.20 | 100.00 |
| Okmeydanı | 0.03 | 3.27 | 0.30 | 96.40 | 100.00 |
| Şişli Hamidiye Etfal | 0.02 | 4.02 | 0.52 | 95.44 | 100.00 |
| GOP Taksim | 0.01 | 2.83 | 0.20 | 96.97 | 100.00 |
| Secondary Care Hospitals | 0.01 | 0.43 | 0.25 | 99.32 | 100.00 |
| Eyüp | 0.001 | 0.50 | 0.19 | 99.31 | 100.00 |
| İstinye | 0.00 | 0.99 | 0.38 | 98.63 | 100.00 |
| Kâğıthane | 0.01 | 0.02 | 0.21 | 99.76 | 100.00 |
| Sarıyer İsmail Akgün | 0.02 | 0.00 | 0.27 | 99.71 | 100.00 |

*Transfer to other hospital

## CONCLUSION

It is one of the vital duties of healthcare workers and executives to provide access to high quality, timely and safe healthcare without financial burden for those whose health suddenly deteriorates and who needs immediate care. Therefore, it is one of our priorities to enhance and improve the emergency healthcare in our hospitals.

As the data in our survey demonstrate, most of the patients visiting the Emergency Departments do not actually need emergency care. Considering the limitations on human resources, technical and physical infrastructure, it will become more and more difficult for our emergency departments to provide safe and quality healthcare to increasing number of patients. The cautions taken by the Public Hospitals Unions and the hospital managements solve the problems to a certain extent. Policy makers should take steps for permanent and efficient solutions.

Family medicine and family physician centered system which is founded as part of Health Transformation Program has not initiated a referral mechanism yet, so usually the patients who want to see a doctor immediately can apply to any hospital. When the number of visits, the variety of diagnosis and the treatments are surveyed, it is seen that our people tend to present to the Emergency Departments for their basic healthcare needs.

In order to reduce the patient volume, to prevent inappropriate visits and to provide quality service in our Emergency Departments, the quality of primary health services must be enhanced, the patients and relatives should be educated and the number and the capacity of the healthcare staff should be improved. One of the most important reasons why the people prefer an emergency department is that they are able to get the laboratory and imaging services easier. Unfortunately the patients who apply to family physicians can't get to basic diagnostic tests such as x-ray at the point of care. In order to solve this problem, district outpatient clinics should be widespread and family physicians should be employed in these clinics. This way, family physicians would become more trusted by the patients and the cooperation between the primary and secondary care would improve.

Another way of reducing the high patient volume will be to support the research on frequent emergency department visits which was initiated for the first time by Beyoglu Public Hospitals Union in our country. This way, we can develop national policies about the issue. Considering these types of patients can visit different hospitals for the same health problem, it is obvious that an integrated system is needed to track number of visits in different locations. When the number of visits reaches a certain point, these patients should be followed up and taken care of using case management method which should be carried out by a multidisciplinary team consisting of family physicians, nurses, psychologists and social workers.

Another major problem stated in our survey is that the patient medical records are not kept properly in our hospital information systems because of the lack of qualified personnel and the deficiencies in system design. To better determine the quality and adequacy of the healthcare provided by our hospitals we need proper medical record keeping. This way, we can analyze the data and share it with the clinicians and management for better decision making.

Manual patient file recording and follow-up on paper files is not preferred because it is both inconvenient and unreliable for timely data analysis. Therefore, it is very important for the Hospital Information systems to be designed in a way that make record keeping easy and fast especially for Emergency Departments. Setting up a strong Information technology infrastructure is going to make a significant contribution on quality of healthcare and help us plan for the future.

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