

TECHNION - Israel Institute of Technology
The William Davidson Faculty of Industrial Engineering and Management

Center for Service Enterprise Engineering (SEE)

<http://ie.technion.ac.il/Labs/Serveng/>



HomeHospital (Rambam)

Database Tables and Fields

Professor Avishai Mandelbaum

Dr. Valery Trofimov, Igor Gavako, Ella Nadjharov

January 9, 2013

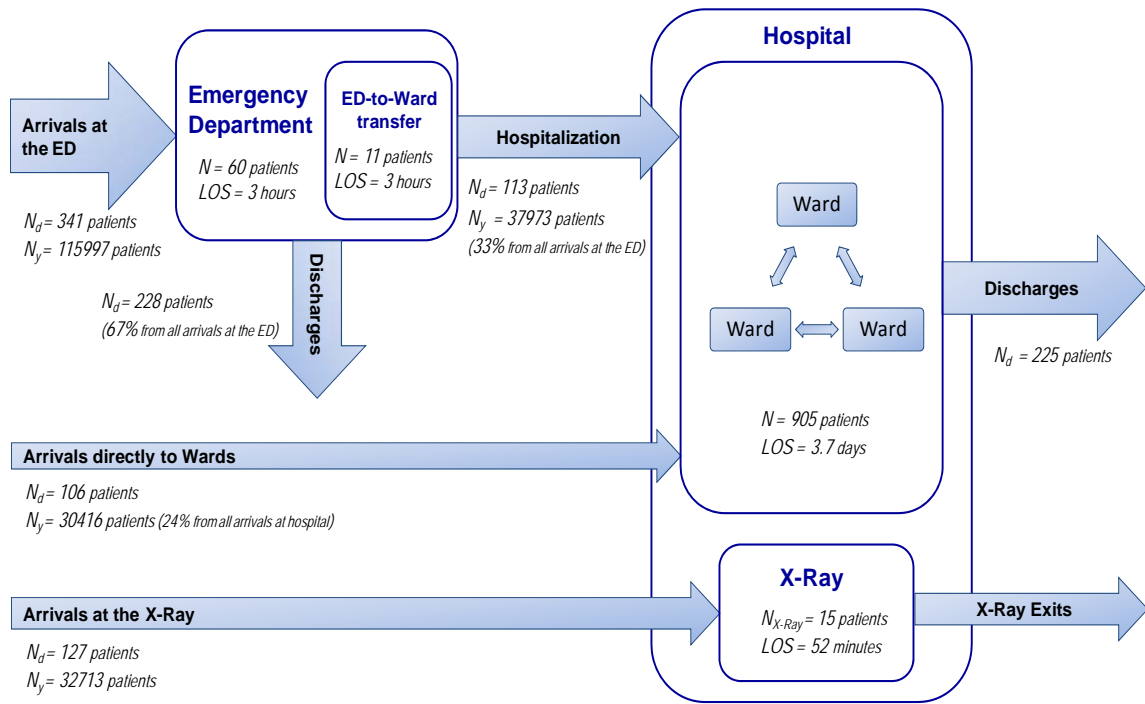
For Circulation

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Hospital description

The data we rely on was collected at a large Israeli hospital. This hospital consists of about 1000 beds and 45 medical units. The data includes detailed information on patient flow throughout the hospital, over a period of several years (January 2004–October 2007). In particular, the data allows one to follow the paths of individual patients throughout their stay at the hospital, including admission, discharge, and transfers between hospital units. The data does not acknowledge resolutions within the ED or within wards.



N_d - average number of patients that arrived per weekday, for period January 1, 2004 - October, 31, 2007

N_y - average number of patients that arrived per year, for years 2004, 2005, 2006, all days (for year 2007 data not fully completed; missing two months - November and December).

N - average number of patients in ED/ED-to-Ward transfer/Wards, recorded at 12:00 per weekday, for period January 1, 2004 - October, 31, 2007

N_{X-Ray} - average number of patients in X-Ray at 10:00 per weekday, for period January 1, 2004 - October, 31, 2007

LOS - length of stay in ED/ED-to-Ward transfer/Wards/X-Ray per weekday, for period January 1, 2004 - October, 31, 2007

Data description

The **visit** table includes general information on each patient that enters the hospital on a particular day – each record in this table relates to a specific visit.

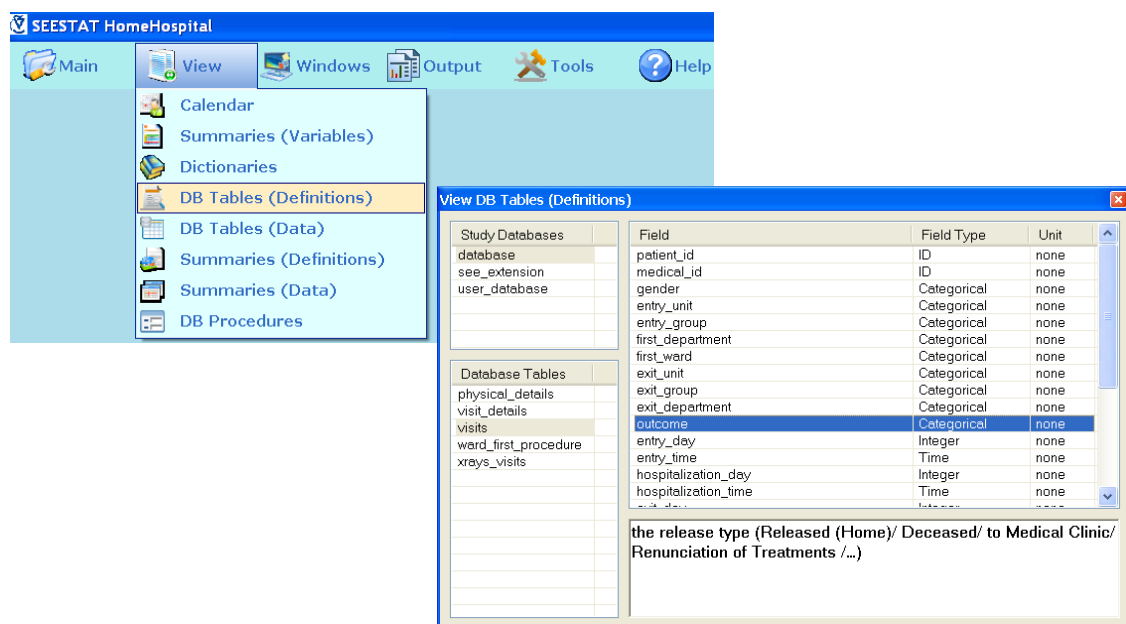
The **visit details** table includes information on each patient — each record in this table is associated with the hospital unit that the patient arrived at or was admitted to.

The **physical details** table includes information on each patient — each record in this table is associated with the hospital unit that the patient arrived at or was admitted to and information about the actual ward where the patient was located.

The **ward first procedure** table includes information on each patient — each record in this table is associated with the actual ward to which the patient was admitted and time of first procedure (filtering of values in this table: time of first procedure less than exit time, waiting time before first procedure greater than or equal to zero and less or equal to 20 hours).

The **x-ray visits** table includes information on each patient — each record in this table relates to a specific visit directly (external arrivals) to X-Ray.

Fields description available in SEESat: click **View-> DB Tables (Definitions)** and select database table and field:



The visit table

1. patient_id – the ID number of the patient
2. medical_id – the medical case number
3. gender – the gender of the patient (see Appendix 1: [gender](#)).
4. entry_unit – the hospital unit that the patient arrives at or is admitted to (see Appendix 1: [entry_exit](#)).
5. entry_group – indicates the entry group: Emergency Department or directly to Hospital Department (see Appendix 1: [entry_group](#)).
6. first_department – the medical-ward code of the first department to which the patient is admitted (see Appendix 1: [hospital unit](#)).
7. first_ward – the medical-ward code of the first ward to which the patient is admitted (see Appendix 1: [hospital unit](#)).
8. exit_unit – the hospital unit from which the patient is released (see Appendix 1: [entry_exit](#))
9. exit_group – indicates the exit group: Emergency Department or Hospital Department (see Appendix 1: [entry_group](#))
10. exit_department – the medical-ward code of the hospital department from which the patient is released (see Appendix 1: [hospital unit](#))
11. outcome – the release type (Released (Home)/ Deceased/ to Medical Clinic/ Renunciation of Treatments /...) (see Appendix 1: [outcome_id](#))
12. entry_day* – the arrival date
13. entry_time** – time in seconds at which the patient arrives at the hospital
14. hospitalization_day* – the hospitalization date
15. hospitalization_time** – time in seconds at which the patient was hospitalized
16. exit_day* – the release date
17. exit_time** – time in seconds at which the patient was released
18. ED_dur – the patient's length of stay in the Emergency department, in seconds.
19. ED_dur_hours – the patient's length of stay in the Emergency department, in hours.
20. hospitalization_dur – the patient's total length of stay in hospital departments, in seconds.
21. hospitalization_dur_hours – the patient's total length of stay in hospital departments, in hours.

* Date is the number of days since the origin which is time 00:00:00 on 01/01/1970

** Time in seconds is the time since the origin which is time 00:00:00 on 01/01/1970

22. hospitalization_dur_days – the patient's total length of stay in hospital departments, in days.
23. age_years[#] – the patient's age on the arrival date, in years
24. age_months – the number of months since the patient's last birthday
25. num_dep – the number of departments in which the patient was hospitalized during his/her stay in the hospital

The visit details table

1. patient_id – the ID number of the patient
2. medical_id – the medical case number
3. gender – the gender of the patient (see Appendix 1: [gender](#)).
4. entry_group – indicates the entry group: Emergency Department or directly to Hospital Department (see Appendix 1: [entry_group](#)).
5. department – the medical-ward code of the department to which the patient was admitted (see Appendix 1: [hospital_unit](#)).
6. outcome – the termination type of segment (Released (Home)/ Hospitalization/ to Medical Clinic/ Removing/ Left on His Own/ Deceased/ Renunciation of Treatments/...) (see Appendix 1: [outcome_id](#)).
7. entry_day^{*} – the date when the patient is admitted to a hospital department
8. entry_time^{**} – time in seconds at which the patient is admitted to a hospital department
9. exit_day^{*} – the date when the patient exits from a hospital department
10. exit_time^{**} – time in seconds at which the patient exits from a hospital department
11. seg_type – state of the patient visit in hospital (Begin/End/Intermediate)
(see Appendix 3: [seg_type](#))
12. duration – the patient's length of stay in the department, in seconds.
13. duration_hours – the patient's length of stay in the department, in hours.
14. duration_days – the patient's length of stay in the department, in days.
15. age_years[#] – the patient's age on the arrival date, in years
16. age_months – the number of months since the patient's last birthday

[#] age of patient = age_years + age_months; when the patient's birth date is missing, then the value of the field age is stated to be equal to 999

The physical details table

1. patient_id – the ID number of the patient
2. medical_id – the medical case number
3. gender – the gender of the patient (see Appendix 1: [gender](#)).
4. entry_group – indicates the entry group: Emergency Department or directly to Hospital Department (see Appendix 1: [entry group](#)).
5. department – the medical-ward code of the department to which the patient was admitted (see Appendix 1: [hospital unit](#)).
6. outcome – the termination type of segment (Released (Home)/ Hospitalization/ to Medical Clinic/ Transferring/ Left on His Own/ Deceased/ Renunciation of Treatments/...) (see Appendix 1: [outcome id](#)).
7. entry_day* – the date when the patient is admitted to a hospital department
8. entry_time** – time in seconds at which the patient is admitted to a hospital department
9. exit_day* – the date when the patient exits from a hospital department
10. exit_time** – time in seconds at which the patient exits from a hospital department
11. seg_type – state of the patient visit in hospital (Begin/End/Intermediate)
(see Appendix 3: [seg_type](#))
12. duration – the patient's length of stay in the department, in seconds.
13. duration_hours – the patient's length of stay in the department, in hours.
14. duration_days – the patient's length of stay in the department, in days.
15. age_years# – the patient's age on the arrival date, in years
16. age_months – the number of months since the patient's last birthday
17. physical_department – the code of actual hospital ward where the patient was located
(see Appendix 1: [hospital unit](#))

The ward first procedure table

1. patient_id – the ID number of the patient
2. medical_id – the medical case number
3. gender – the gender of the patient (see Appendix 1: [gender](#)).
4. department – the medical-ward code of the department to which the patient was admitted (see Appendix 1: [hospital unit](#)).
5. entry_day* – the date when the patient is admitted to a hospital department
6. entry_time** – time in seconds at which the patient is admitted to a hospital department
7. exit_day* – the date when the patient exits from a hospital department

8. `exit_time`^{**} – time in seconds at which the patient exits from a hospital department
9. `duration` – the patient's length of stay in the department, in seconds.
10. `duration_hours` – the patient's length of stay in the department, in hours.
11. `duration_days` – the patient's length of stay in the department, in days.
12. `first_procedure_time` – time of first procedure
13. `first_procedure_difference` – duration between `entry_time` and `first_procedure_time`, in seconds.
14. `first_procedure_difference_min` – duration between `entry_time` and `first_procedure_time`, in minutes.
15. `first_procedure_difference_hours` – duration between `entry_time` and `first_procedure_time`, in hours.
16. `corr_duration` – duration between `first_procedure_time` and `exit_time`, in seconds.
17. `corr_duration_hours` – duration between `first_procedure_time` and `exit_time`, in hours.
18. `corr_duration_days` – duration between `first_procedure_time` and `exit_time`, in days.
19. `physical_department` – the code of actual hospital ward where the patient was located (see Appendix 1: [hospital unit](#))
20. `prev_entry_group` – logical flag, indicates the previous entry group: Emergency Department or Hospital Department (see Appendix 1: [entry group](#)), for first patient's record `prev_entry_group` equal to zero.

The X-Ray visits table

1. `patient_id` – the ID number of the patient
2. `medical_id` – the medical case number
3. `gender` – the gender of the patient (see Appendix 1: [gender](#)).
4. `department` – the department code (Computed Tomography Unit/ Ultrasound Unit/ Mammography Unit/...) (see Appendix 1: [hospital unit](#)).
5. `outcome` – the release type (to Medical Clinic /...) (see Appendix 1: [outcome_id](#))
6. `entry_day`^{*} – the arrival date
7. `entry_time`^{**} – time in seconds at which the patient arrives at the X-Ray unit
8. `exit_day`^{*} – the release date
9. `exit_time`^{**} – time in seconds at which the patient was released
10. `duration` – the patient's length of stay in X-Ray, in seconds.
11. `age_years`[#] – the patient's age on the arrival date, in years
12. `age_months` – the number of months since the patient's last birthday

Appendix 1 Missing Values

| January 1, 2004 – October 31, 2007 (each record relates to a specific visit) | | | | |
|------------------------------------------------------------------------------|-------------------------|------------------------|----------------------------|---------------------------|
| | total number of records | missing gender records | missing birth date records | missing exit date records |
| Hospital | 565897 | 26 (0.005%) | 1351 (0.24%) | 44 (0.01%) |
| Directly to X-Ray | 125005 | 13 (0.01%) | 638 (0.51%) | - |

- Missing value of **gender** was filled by “Unknown” value.
- Missing value of **birth date**: the value of the field age equal to 999.

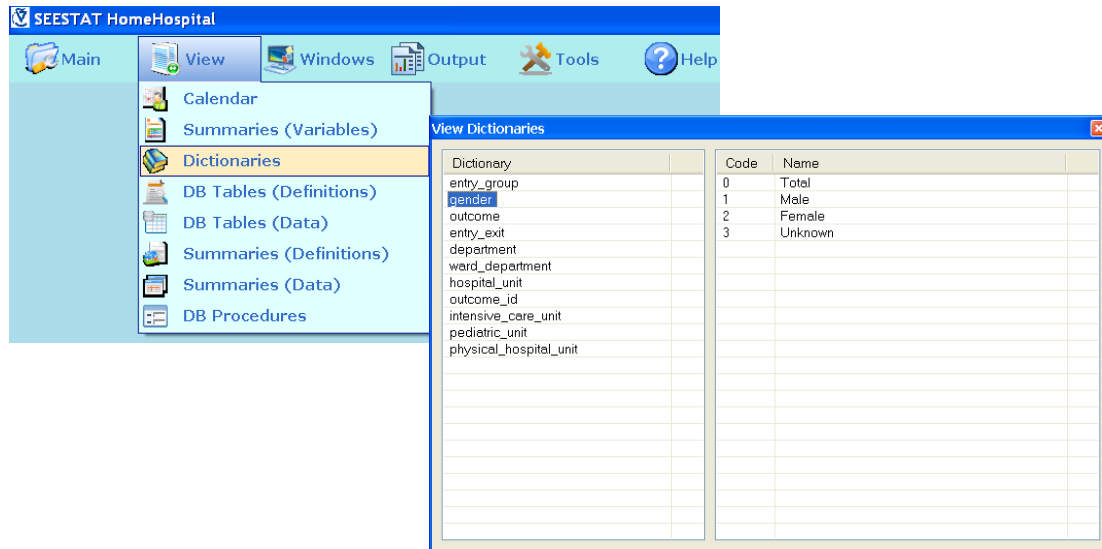
| Example: missing birth date (visit_detail table) | | | | | | | | | | | | | |
|--------------------------------------------------|------------|-------------|------------|------------------|------------------|---------|-----------|------------|----------|------------|----------|----------------|-----------|
| patient_id | medical_id | entry_group | department | entry_date | exit_date | outcome | entry_day | entry_time | exit_day | exit_time | seg_type | duration_hours | age_years |
| 10069040 | 20117363 | 1 | 1 | 10/02/2005 11:21 | 10/02/2005 14:22 | 2 | 12824 | 1108034483 | 12824 | 1108045333 | 1 | 3 | 999 |
| 10069040 | 20117363 | 2 | 43 | 10/02/2005 14:22 | 13/02/2005 8:00 | 3 | 12824 | 1108045333 | 12827 | 1108281600 | 4 | 65 | 999 |
| 10069040 | 20117363 | 2 | 46 | 13/02/2005 8:00 | 14/02/2005 8:00 | 3 | 12827 | 1108281600 | 12828 | 1108368000 | 4 | 24 | 999 |
| 10069040 | 20117363 | 2 | 43 | 14/02/2005 8:00 | 14/02/2005 11:20 | 7 | 12828 | 1108368000 | 12828 | 1108380037 | 3 | 3 | 999 |

- Missing value of **exit date** (patient hospitalized indefinitely): value of field exit_day equals to 2932896 (31/12/9999); as a result, exit time is equal to zero and duration is calculated to be a negative quantity, and should be ignored.

| Example: missing exit date (visit_detail table) | | | | | | | | | | | | |
|-------------------------------------------------|------------|-------------|------------|------------------|------------------|---------|-----------|------------|----------|------------|----------|----------------|
| patient_id | medical_id | entry_group | department | entry_date | exit_date | outcome | entry_day | entry_time | exit_day | exit_time | seg_type | duration_hours |
| 10149261 | 20535648 | 2 | 46 | 25/09/2007 11:38 | 02/10/2007 12:17 | 6 | 13781 | 1190720293 | 13788 | 1191327427 | 1 | 168 |
| 10149261 | 20535648 | 2 | 69 | 02/10/2007 12:17 | 10/10/2007 11:23 | 3 | 13788 | 1191327427 | 13796 | 1192015415 | 4 | 191 |
| 10149261 | 20535648 | 2 | 70 | 10/10/2007 11:23 | 21/10/2007 14:06 | 3 | 13796 | 1192015415 | 13807 | 1192975577 | 4 | 266 |
| 10149261 | 20535648 | 2 | 46 | 21/10/2007 14:06 | 02/11/2007 12:35 | 3 | 13807 | 1192975577 | 13819 | 1194006949 | 4 | 286 |
| 10149261 | 20535648 | 2 | 47 | 02/11/2007 12:35 | 04/11/2007 12:32 | 3 | 13819 | 1194006949 | 13821 | 1194179575 | 4 | 47 |
| 10149261 | 20535648 | 2 | 46 | 04/11/2007 12:32 | 28/11/2007 10:05 | 3 | 13821 | 1194179575 | 13845 | 1196244301 | 4 | 573 |
| 10149261 | 20535648 | 2 | 47 | 28/11/2007 10:05 | 02/12/2007 10:01 | 3 | 13845 | 1196244301 | 13849 | 1196589688 | 4 | 95 |
| 10149261 | 20535648 | 2 | 46 | 02/12/2007 10:01 | 31/12/9999 | 3 | 13849 | 1196589688 | 2932896 | 0 | 3 | -332386 |
| 10173918 | 20318333 | 1 | 1 | 06/09/2007 9:35 | 06/09/2007 10:44 | 2 | 13762 | 1189071312 | 13762 | 1189075459 | 1 | 1 |
| 10173918 | 20318333 | 2 | 68 | 06/09/2007 10:44 | 31/12/9999 | 5 | 13762 | 1189075459 | 2932896 | 0 | 3 | -330298 |
| 10180217 | 20328622 | 1 | 1 | 23/09/2007 15:45 | 23/09/2007 17:55 | 2 | 13779 | 1190562331 | 13779 | 1190570142 | 1 | 2 |
| 10180217 | 20328622 | 2 | 21 | 23/09/2007 17:55 | 31/12/9999 | 3 | 13779 | 1190570142 | 2932896 | 0 | 3 | -330713 |

Appendix 2 Dictionaries

Available in SEESTat: click **View**-> **Dictionaries** and select dictionary



2.1 gender

| gender | |
|--------|---------|
| code | name |
| 0 | Total |
| 1 | Male |
| 2 | Female |
| 3 | Unknown |

2.2 entry_exit

| entry_exit | |
|------------|------------------------------------|
| code | name |
| 0 | Total |
| 1 | Emergency Internal Medicine Unit |
| 2 | Emergency Surgery Unit |
| 3 | Emergency Traumatology Unit |
| 4 | Emergency Orthopedic Unit |
| 5 | Emergency Otorhinolaryngology Unit |
| 6 | Emergency Ophthalmology Unit |
| 7 | Emergency Psychiatry Unit |
| 8 | Emergency Gynecology Unit |
| 9 | Pediatric Emergency Unit |
| 10 | Pediatric Surgery Emergency Unit |
| 11 | Emergency Maternity Unit |

| | |
|----|---------------------------------------|
| 12 | Hospitalization |
| 13 | Internal Medicine Division |
| 14 | Division of Surgery |
| 15 | Division of Obstetrics and Gynecology |
| 16 | Department of Anesthesiology |
| 17 | Pediatrics Department |
| 18 | Department of Pediatric Surgery |
| 19 | Division of Laboratory Services |
| 20 | Oncology Institute |
| 22 | Delay |
| 23 | Other DRG |
| 24 | Clinic |
| 25 | Trauma Unit (road accidents) |
| 26 | Trauma Unit (industrial accident) |
| 30 | Unknown |

2.3 entry_group

| entry group | |
|-------------|----------------|
| code | name |
| 0 | Total |
| 1 | Emergency Room |
| 2 | Hospital |

2.4 hospital unit

| hospital unit | |
|---------------|--------------------------------------------|
| code | name |
| 1 | Emergency Internal Medicine Unit |
| 2 | Emergency Surgery Unit |
| 3 | Emergency Traumatology Unit |
| 4 | Emergency Orthopedic Unit |
| 5 | Emergency Otorhinolaryngology Unit |
| 6 | Emergency Ophthalmology Unit |
| 7 | Emergency Psychiatry Unit |
| 8 | Emergency Gynecology Unit |
| 9 | Pediatric Emergency Unit |
| 10 | Pediatric Emergency Surgery Unit |
| 11 | Emergency Maternity Unit |
| 12 | Chemotherapy Outpatient Center |
| 13 | Institute of Oncology |
| 14 | Chemotherapy Inpatient Oncology Unit |
| 15 | Radiotherapy Inpatient Oncology Unit |
| 16 | Institute for Immunology, Allergy and AIDS |
| 17 | Institute of Gastroenterology |

| | |
|----|-----------------------------------------------------|
| 18 | Intensive Care Unit Gastroenterology |
| 19 | Institute of Hematology and Bone Marrow Transplant |
| 20 | Pediatric Hematology and Oncology Department2 |
| 21 | Institute of Hematology and Bone Marrow Transplant1 |
| 22 | Thrombosis and Hemostasis Unit |
| 23 | Department of Intensive and Critical Medicine |
| 24 | Department of Neurology |
| 25 | Cognitive Neurology Unit |
| 26 | EEG Institute |
| 27 | Department of Nephrology |
| 28 | Hypertension Clinic |
| 29 | Hemodialysis Unit |
| 30 | Kidney Transplant Unit |
| 31 | Institute of Endocrinology, Diabetes and Metabolism |
| 32 | Bone and Calcium Metabolism Unit |
| 33 | Department of Dermatology |
| 34 | Phototherapy Unit |
| 35 | Internal Medicine A |
| 36 | Intensive Care Unit A |
| 37 | Internal Medicine B |
| 38 | Intensive Care Unit B |
| 39 | Internal Medicine C |
| 40 | Intensive Care Unit C |
| 41 | Internal Medicine D |
| 42 | Intensive Care Unit D |
| 43 | Internal Medicine E |
| 44 | Intensive Care Unit |
| 45 | Internal Medicine Military |
| 46 | Department of Cardiology |
| 47 | Intensive Cardiac Care Unit |
| 48 | Arrhythmia and Electrophysiology (Pacemakers) |
| 49 | Congestive Heart Failure Clinic |
| 50 | Interventional (Angioplasty) Cardiology |
| 51 | Department of Rheumatology |
| 52 | Institute of Pulmonology |
| 53 | Pain Relief Unit |
| 54 | Department of Urology |
| 55 | Neuro-Urology Unit |
| 56 | Department of Otorhinolaryngology |
| 57 | Orthopedics A - Department |
| 58 | Orthopedics A - Department1 |
| 59 | Orthopedic Oncology |
| 60 | Orthopedics B - Department |
| 61 | Orthopedics B - Department1 |
| 62 | Department of General Surgery A |
| 63 | Department of General Surgery B |
| 64 | Department of Plastic Surgery |
| 65 | Intensive Care Burn Unit |
| 66 | Department of Thoracic Surgery |

| | |
|-----|------------------------------------------------------------------|
| 67 | Hand Surgery Unit |
| 68 | Department of Vascular Surgery and Transplantation |
| 69 | Department of Cardiac Surgery |
| 70 | Intensive Care of Cardiac Surgery Unit |
| 71 | Department of Neurosurgery |
| 72 | Intensive Care of Neurosurgery Unit |
| 73 | Neuro-Oncology |
| 74 | Department of Maternity A |
| 75 | Department of Maternity B |
| 76 | Department of Newborn Care |
| 77 | Labor and Delivery Rooms |
| 78 | Department of Gynecology |
| 79 | Neonatal Intensive Care Unit (NICU) |
| 80 | Onco-Gynecology Unit |
| 81 | Endo-Gynecology Unit |
| 82 | High Risk Pregnancy Unit |
| 83 | Department of Psychiatry and Mental Health |
| 84 | Psychopathic Ward 5 |
| 85 | Psychopathic Ward 6 |
| 86 | Day Care Psychiatry Unit |
| 87 | Psychogeriatric Service |
| 88 | Department of Ophthalmology |
| 89 | Department of Oral and Maxillofacial Surgery |
| 90 | Institute of Endocrinology, Diabetes and Metabolism ¹ |
| 91 | Proctology |
| 92 | Pathology Laboratory |
| 93 | Radiology Laboratory |
| 94 | Post-Anesthesia Recovery Unit |
| 95 | Ambulatory Operating Room |
| 96 | Pre-Operating Room |
| 97 | Delay |
| 98 | Hospitalization |
| 99 | Unit High Risk Pregnancy Unit |
| 100 | Department of Plastic Surgery (suture) |
| 101 | Emergency Medicine Unit ¹ |
| 102 | Department of Pediatrics A |
| 103 | Department of Pediatrics B |
| 104 | Department of Pediatric Surgery |
| 105 | Pediatric Plastic Surgery Unit |
| 106 | Pediatric Oncology and Bone Marrow Transplant Unit |
| 107 | Pediatric Intensive Care Unit |
| 108 | Pediatric Hematology and Oncology Department |
| 109 | Pediatric Urology Clinic |
| 110 | Pediatric Orthopedics Unit |
| 111 | Pediatric Immunology and Allergy |
| 112 | Pediatric Endocrinology Clinic |
| 113 | Pediatric Otorhinolaryngology Unit |
| 114 | Pediatric Gastroenterology and Nutrition Unit |
| 115 | Pediatric Hemodialysis Unit |

| | |
|-----|----------------------------------------------------|
| 116 | Pediatric Metabolism Unit |
| 117 | Pediatric Hematology and Oncology Department1 |
| 118 | Department of Infectious Diseases |
| 119 | Pediatric Neurosurgery Unit |
| 120 | Department of Pediatric Cardiology |
| 121 | Pediatric Rheumatology Clinic |
| 122 | Pediatric Pulmonary Unit |
| 123 | Child and Adolescent Psychiatry Service |
| 124 | Pediatric Nephrology Unit |
| 125 | Pediatric Diabetes and Obesity Clinic |
| 126 | Pediatric Oral and Maxillofacial Surgery |
| 127 | Institute of Breast Health |
| 128 | Mammography Unit |
| 129 | Trauma Unit (road accidents) |
| 130 | Institute for Occupational Health |
| 131 | School of Radiology and Imaging |
| 132 | Institute of Nuclear Medicine |
| 133 | Computed Tomography Unit |
| 134 | Ultrasound Unit |
| 135 | Ultrasound Unit1 |
| 136 | Ultrasound Unit2 |
| 137 | Magnetic Resonance Imaging Unit |
| 138 | Oncology Clinic |
| 139 | Orthopedic Clinic |
| 140 | Orthopedic Clinic6 |
| 141 | Ilizarov External Fixation Clinic |
| 142 | Eating Disorders Clinic |
| 143 | Institute of Breast Health (image-guided biopsies) |
| 144 | Orthopedic Clinic1 |
| 145 | Orthopedic Clinic5 |
| 146 | Orthopedic Clinic4 |
| 147 | Non-Invasive Cardiology Unit |
| 148 | Hemodialysis Clinic |
| 149 | Hypertension Clinic1 |
| 150 | Plastic Surgery Clinic |
| 151 | Plastic Surgery Clinic (Burn) |
| 152 | Lipid Disorders Clinic |
| 153 | Liver Clinic |
| 154 | Orthopedic Clinic7 |
| 155 | Orthopedic Clinic3 |
| 156 | Pain Relief Clinic |
| 157 | Neuro-Urology Clinic |
| 158 | Gynecology Clinic |
| 159 | Fertility and Sperm Bank Clinic |
| 160 | Periodontics and Oral Medicine Clinic |
| 161 | Medicinal Plant Clinic (violent patients unit) |
| 162 | Dental Clinic |
| 163 | Rehabilitation Heart Clinic |
| 164 | Institute for Occupational Health1 |

| | |
|-----|-----------------------------------------------------|
| 165 | Pediatric Hematology and Oncology Clinic |
| 166 | Pediatric Hematology and Oncology Clinic1 |
| 167 | Pediatric Neurosurgery Clinic |
| 168 | Immunology and Tissue Classification Laboratory |
| 169 | Endocrinology Laboratory |
| 170 | Biochemistry Laboratory |
| 171 | Blood Bank Laboratory |
| 172 | Sperm Bank Laboratory |
| 173 | Urgent Testing Laboratory |
| 174 | Toxicology Laboratory |
| 175 | Biochemistry Laboratory1 |
| 176 | Microbiology Laboratory |
| 177 | Neurosurgery Laboratory |
| 178 | Cytology Laboratory |
| 179 | Ministry of Defense (rehabilitation) |
| 180 | Institute for Periodic Examinations |
| 181 | Invasive Imaging Tests |
| 182 | Hydrotherapy Pool (rehabilitative) |
| 183 | Orthopedic Clinic2 |
| 184 | Department of Vascular Surgery and Transplantation1 |
| 185 | Gynecology Clinic2 |
| 186 | Department of Clinical Nutrition |
| 187 | X-ray Screening |
| 188 | Unknown2 |
| 189 | Neurosurgery |
| 190 | Unknown1 |
| 191 | Bone and Calcium Metabolism Unit1 |
| 192 | Hearing and Speech Unit |
| 193 | Nutrition and Dietary Unit |
| 194 | Department of Physical Therapy |
| 195 | Bone Marrow Transplant Unit |
| 196 | Hemodialysis Clinic1 |
| 197 | Endodontics and Dental Trauma Unit |
| 198 | Gynecology Clinic1 |
| 200 | Unknown |

2.5 outcome_id

| outcome_id | |
|------------|---------------------|
| code | name |
| 1 | Emergency Room |
| 2 | Hospitalization |
| 3 | Removing |
| 4 | Beginning Removing |
| 5 | Completion Removing |
| 6 | Receiving |

| | |
|----|----------------------------|
| 7 | Released (Home) |
| 8 | Left on His Own |
| 9 | Left with Medical File |
| 10 | Deceased |
| 11 | Renunciation of Treatments |
| 12 | Cancellation |
| 13 | Medical Clinic |
| 14 | Other Institution |
| 15 | Other |
| 20 | Unknown |

Appendix 3 Aggregated Dictionaries

3.1 outcome

| outcome | |
|---------|----------------------------|
| code | name |
| 0 | Total |
| 1 | Emergency Room |
| 2 | Hospitalization |
| 3 | Transfer |
| 4 | Released (Home) |
| 5 | Left on His Own |
| 6 | Deceased |
| 7 | Renunciation of Treatments |
| 8 | Medical Clinic |
| 9 | Other Institution |
| 10 | Other |
| 11 | Unknown |

3.2 department

Aggregation by the medical profile of a hospital unit (Here, e.g. “Internal Medicine Unit” corresponds to “Internal Medicine A-E” in Appendix 2.)

| department | |
|------------|----------------------------------------------------|
| code | name |
| 0 | Total |
| 1 | Emergency Internal Medicine Unit |
| 2 | Emergency Surgery Unit |
| 3 | Emergency Traumatology Unit |
| 4 | Emergency Orthopedic Unit |
| 5 | Emergency Otorhinolaryngology Unit |
| 6 | Emergency Ophthalmology Unit |
| 7 | Emergency Psychiatry Unit |
| 8 | Emergency Gynecology Unit |
| 9 | Pediatric Emergency Unit |
| 10 | Pediatric Emergency Surgery Unit |
| 11 | Emergency Maternity Unit |
| 12 | Institute of Oncology |
| 13 | Institute for Immunology, Allergy and AIDS |
| 14 | Institute of Gastroenterology |
| 15 | Institute of Hematology and Bone Marrow Transplant |
| 16 | Department of Intensive and Critical Medicine |

| | |
|----|-----------------------------------------------------|
| 17 | Department of Neurology |
| 18 | Department of Nephrology |
| 19 | Institute of Endocrinology, Diabetes and Metabolism |
| 20 | Department of Dermatology |
| 21 | Department of Internal Medicine |
| 22 | Intensive Care Unit |
| 23 | Department of Cardiology |
| 24 | Department of Rheumatology |
| 25 | Institute of Pulmonology |
| 26 | Pain Relief Unit |
| 27 | Department of Urology |
| 28 | Department of Otorhinolaryngology |
| 29 | Department of Orthopedics |
| 30 | Department of General Surgery |
| 31 | Department of Plastic Surgery |
| 32 | Department of Vascular Surgery and Transplantation |
| 33 | Department of Cardiac Surgery |
| 34 | Department of Neurosurgery |
| 35 | Department of Maternity |
| 36 | Department of Newborn Care |
| 37 | Department of Gynecology |
| 38 | Department of Psychiatry and Mental Health |
| 39 | Department of Ophthalmology |
| 40 | Department of Oral and Maxillofacial Surgery |
| 41 | Pathology Laboratory |
| 42 | Department of Anesthesiology |
| 43 | Delay |
| 44 | Hospitalization |
| 45 | Pediatrics Department |
| 46 | Pediatric Surgery Department |
| 47 | Pediatric Plastic Surgery Unit |
| 48 | Pediatric Intensive Care Unit |
| 49 | Pediatric Hematology and Oncology Department |
| 50 | Pediatric Urology Clinic |
| 51 | Pediatric Orthopedics Unit |
| 52 | Pediatric Immunology and Allergy |
| 53 | Pediatric Endocrinology Clinic |
| 54 | Pediatric Otorhinolaryngology Unit |
| 55 | Pediatric Gastroenterology and Nutrition Unit |
| 56 | Pediatric Hemodialysis Unit |
| 57 | Pediatric Metabolism Unit |
| 58 | Department of Infectious Diseases |
| 59 | Pediatric Neurosurgery Unit |
| 60 | Pediatric Cardiology Department |
| 61 | Pediatric Rheumatology Clinic |
| 62 | Pediatric Pulmonary Unit |
| 63 | Pediatric Nephrology Unit |
| 64 | Pediatric Diabetes and Obesity Clinic |

| | |
|----|-------------------------------------------------|
| 65 | Pediatric Oral and Maxillofacial Surgery |
| 66 | Institute of Breast Health |
| 67 | Trauma Unit (road accidents) |
| 68 | Institute for Occupational Health |
| 69 | School of Radiology and Imaging |
| 70 | Institute of Nuclear Medicine |
| 71 | Oncology Clinic |
| 72 | Orthopedic Clinic |
| 73 | Eating Disorders Clinic |
| 74 | Hemodialysis Clinic |
| 75 | Hypertension Clinic |
| 76 | Plastic Surgery Clinic |
| 77 | Lipid Disorders Clinic |
| 78 | Liver Clinic |
| 79 | Neuro-urology Clinic |
| 80 | Gynecology Clinic |
| 81 | Periodontics and Oral Medicine Clinic |
| 82 | Rehabilitation Heart Clinic |
| 83 | Pediatric Hematology and Oncology Clinic |
| 84 | Immunology and Tissue Classification Laboratory |
| 85 | Endocrinology Laboratory |
| 86 | Biochemistry Laboratory |
| 87 | Blood Bank Laboratory |
| 88 | Sperm Bank Laboratory |
| 89 | Urgent Testing Laboratory |
| 90 | Toxicology Laboratory |
| 91 | Microbiology Laboratory |
| 92 | Cytology Laboratory |
| 93 | Institute for Periodic Examinations |
| 94 | Department of Clinical Nutrition |
| 95 | Hearing and Speech Unit |
| 96 | Department of Physical Therapy |
| 99 | Unknown |

3.3 ward_department

Aggregation by the size of hospital unit

| ward_department | |
|-----------------|---------------------|
| code | name |
| 0 | Total |
| 1 | Internal Medicine A |
| 2 | Internal Medicine D |
| 3 | Internal Medicine C |
| 4 | Internal Medicine E |
| 5 | Internal Medicine B |

| | |
|----|----------------------------------------------------|
| 6 | Department of General Surgery B |
| 7 | Department of Pediatrics A |
| 8 | Labor and Delivery Rooms |
| 9 | Orthopedics A - Department |
| 10 | Department of Pediatrics B |
| 11 | Orthopedics B - Department |
| 12 | Department of General Surgery A |
| 13 | Department of Neurology |
| 14 | Department of Intensive and Critical Medicine |
| 15 | Intensive Cardiac Care Unit |
| 16 | Department of Maternity A |
| 17 | Chemotherapy Inpatient Oncology Unit |
| 18 | Department of Neurosurgery |
| 19 | Psychopathic Ward 5 |
| 20 | Department of Maternity B |
| 21 | Department of Urology |
| 22 | Department of Gynecology |
| 23 | Pediatric Intensive Care Unit |
| 24 | Intensive Care of Neurosurgery Unit |
| 25 | Department of Ophthalmology |
| 26 | Radiotherapy Inpatient Oncology Unit |
| 27 | Department of Nephrology |
| 28 | Department of Cardiology |
| 29 | Department of Thoracic Surgery |
| 30 | Department of Dermatology |
| 31 | Department of Vascular Surgery and Transplantation |
| 32 | Department of Otorhinolaryngology |
| 33 | Pediatric Hematology |
| 34 | Department of Plastic Surgery |
| 35 | Psychopathic Ward 6 |
| 36 | Department of Pediatric Surgery |
| 37 | Department of Cardiac Surgery |
| 38 | Intensive Care Unit A |
| 39 | Institute of Hematology and Bone Marrow Transplant |
| 40 | Intensive Care Unit D |
| 41 | Department of Rheumatology |
| 42 | Department of Oral and Maxillofacial Surgery |
| 43 | Intensive Care Unit B |
| 44 | Pediatric Neurosurgery Unit |
| 45 | Intensive Care Unit C |
| 46 | Pediatric Oncology |
| 47 | Hand Surgery Unit |
| 48 | Onco-Gynecology Unit |
| 49 | Pediatric Orthopedics Unit |
| 50 | Neonatal Intensive Care Unit (NICU) |
| 51 | Pediatric Plastic Surgery Unit |
| 52 | Intensive Care Burn Unit |
| 53 | Pediatric Oral and Maxillofacial Surgery |
| 54 | Intensive Care of Cardiac Surgery Unit |

| | |
|----|----------------------------------------------------|
| 55 | Department of Newborn Care |
| 56 | Pediatric Urology Clinic |
| 57 | Pediatric Otorhinolaryngology Unit |
| 58 | Pain Relief Unit |
| 59 | Pediatric Oncology and Bone Marrow Transplant Unit |
| 60 | Department of Pediatric Cardiology |
| 61 | Interventional (Angioplasty) Cardiology |
| 62 | Intensive Care Unit |
| 63 | Day Care Psychiatry Unit |
| 65 | Other |

3.4 Intensive Care Unit

| intensive_care_unit | |
|---------------------|-----------------------------------------------|
| code | name |
| 0 | Total |
| 1 | Intensive Care Unit Gastroenterology |
| 2 | Department of Intensive and Critical Medicine |
| 3 | Intensive Care Unit A |
| 4 | Intensive Care Unit B |
| 5 | Intensive Care Unit C |
| 6 | Intensive Care Unit D |
| 7 | Intensive Care Unit |
| 8 | Intensive Cardiac Care Unit |
| 9 | Intensive Care Burn Unit |
| 10 | Intensive Care of Cardiac Surgery Unit |
| 11 | Intensive Care of Neurosurgery Unit |
| 12 | Neonatal Intensive Care Unit (NICU) |
| 13 | Pediatric Intensive Care Unit |
| 14 | Other |

3.5 Pediatric Unit

| pediatric_unit | |
|----------------|----------------------------------------------------|
| code | name |
| 0 | Total |
| 1 | Pediatric Hematology and Oncology Department2 |
| 2 | Department of Pediatrics A |
| 3 | Department of Pediatrics B |
| 4 | Department of Pediatric Surgery |
| 5 | Pediatric Plastic Surgery Unit |
| 6 | Pediatric Oncology and Bone Marrow Transplant Unit |
| 7 | Pediatric Intensive Care Unit |
| 8 | Pediatric Hematology and Oncology Department |
| 9 | Pediatric Urology Clinic |

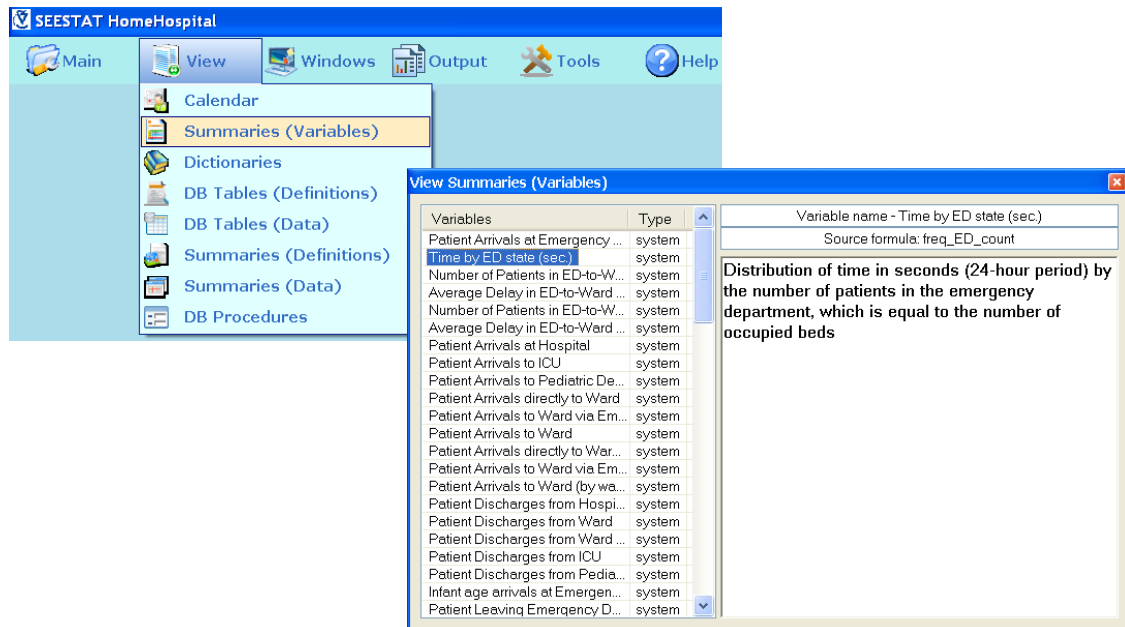
| | |
|----|-----------------------------------------------|
| 10 | Pediatric Orthopedics Unit |
| 11 | Pediatric Immunology and Allergy |
| 12 | Pediatric Endocrinology Clinic |
| 13 | Pediatric Otorhinolaryngology Unit |
| 14 | Pediatric Gastroenterology and Nutrition Unit |
| 15 | Pediatric Hemodialysis Unit |
| 16 | Pediatric Metabolism Unit |
| 17 | Pediatric Hematology and Oncology Department1 |
| 18 | Pediatric Neurosurgery Unit |
| 19 | Department of Pediatric Cardiology |
| 20 | Pediatric Rheumatology Clinic |
| 21 | Pediatric Pulmonary Unit |
| 22 | Pediatric Nephrology Unit |
| 23 | Pediatric Diabetes and Obesity Clinic |
| 24 | Pediatric Oral and Maxillofacial Surgery |
| 25 | Pediatric Hematology and Oncology Clinic |
| 26 | Pediatric Hematology and Oncology Clinic1 |
| 27 | Pediatric Neurosurgery Clinic |
| 28 | Other |

Appendix 4 Flags

| seg_type | |
|----------|-----------------------|
| code | name |
| 1 | segment start |
| 2 | segment start and end |
| 3 | segment end |
| 4 | middle segment |

Appendix 5 SEESat Variables

Available in SEESat: click **View**-> **Summaries (Variables)** and select variable



Intraday

Patient Arrivals at Emergency Department - Number of patients that arrived at the emergency department for each of its units, during each time interval.

Patient Arrivals at Hospital - Number of patients that arrived at the emergency department or went directly to hospital (external arrivals), during each time interval.

Patient Arrivals to Ward - Number of patients that were admitted to the hospital (directly and via emergency department), for each department, by first ward code, during each time interval.

Patient Arrivals to Ward (by ward_department) - Number of patients that were admitted to the hospital (directly and via emergency department), for each department, by first ward code, by ward_department dictionary, during each time interval.

Patient Arrivals directly to Ward - Number of patients that were admitted directly to wards, for each department, by first ward code, during each time interval.

Patient Arrivals directly to Ward (by ward_department) - Number of patients that were admitted directly to wards by ward_department dictionary, for each department, by first ward code, during each time interval.

Patient Arrivals to Ward via Emergency Department - Number of patients that were admitted to hospital via emergency department, for each department, by first ward code, during each time interval.

Patient Arrivals to Ward via Emergency Department (by ward_department) - Number of patients that were admitted to hospital via emergency department, for each department, by first ward code, by ward_department dictionary during each time interval.

Patient Arrivals to ICU - Number of patients that were admitted to intensive care units, including transferring between wards, during each time interval.

Patient Arrivals to Pediatric Department - Number of patients that were admitted to pediatric hospital units, including transferring between wards, during each time interval.

Patient Discharges from Hospital - Number of patients that were discharged from the hospital, during each time interval.

Patient Discharges from Ward - Number of patients that were discharged from the hospital, for each department, during each time interval.

Patient Discharges from Ward (by ward_department) - Number of patients that were discharged from the hospital, by ward_department dictionary, for each department, during each time interval.

Patient Discharges from ICU - Number of patients that were discharged from intensive care units, including transferring between wards, for each department, during each time interval.

Patient Discharges from Pediatric Department - Number of patients that were discharged from pediatric units, including transferring between wards, for each department, during each time interval.

Patients Leaving Emergency Department - Number of patients that were discharged from the emergency department for each of its units, categorized by the cause of leaving, during each time interval.

Number of Patients in Ward (average) - Average number of patients in a hospital department per second for each hospital department, during each time interval.

Number of Patients in Ward (average) (by ward_department) - Average number of patients in a hospital department per second for each hospital department, by ward_department dictionary, during each time interval.

Number of Patients in Ward (by physical location) - Number of patients in a hospital department per second for each hospital department, during each time interval, by actual ward where the patient was located.

Number of Patients in ICU (average) - Number of patients in intensive care units per second for each hospital department, during each time interval.

Number of Patients in Pediatric Department (average) - Average number of patients in pediatric hospital units per second for each hospital department, during each time interval.

Number of Patients in Emergency Department (average) - Average number of patients in emergency department per second, for each of its units, during each time interval.

Number of Patients in ED-to-Ward transfer (average) - Average number of hospitalized patients in emergency department until their transfer to a ward is carried out, per second, during each time interval.

Number of Patients in ED-to-Ward transfer (average) (by ward_department) - Average number of patients in emergency department until their transfer to a ward is carried out, per second, during each time interval, by ward_department dictionary

Average Length of Stay in Emergency Department (hours) – Average length of stay (in hours) of patients in the emergency department, for each of its units, for each time interval. For each time interval, the average is computed among patients that arrived at the emergency department during this interval.

Average Length of Stay in Ward (hours) - Average length of stay (in hours) of patients in the hospital department, for each ward, during each time interval. For each time interval,

the average is computed among patients that were admitted to the department during this interval.

Average Delay in ED-to-Ward transfer (hours) - Average length of stay (in hours) in emergency department of patients until their transfer to a ward is carried out, during each time interval. For each time interval, the average is computed among patients that were admitted to the department during this interval.

Average Delay in ED-to-Ward transfer (hours) (by ward_department) - Average length of stay (in hours) in emergency department of patients until their transfer to a ward is carried out, during each time interval, by ward_department dictionary. For each time interval, the average is computed among patients that were admitted to the department during this interval.

Proportion of Admissions to Wards from Emergency Department – Proportion of patients that were moved from the emergency department to the hospital wards from among all those released from the emergency department, for each of its units, for each time interval.

Proportion of leaving for Home from Emergency Department - Proportion of patients that were released from the emergency department to home from among all those released from the emergency department, for each of its units, for each time interval.

Daily Totals

Patient Arrivals at Emergency Department - Number of patients that arrived at the emergency department on each day, for each of its units.

Patient Arrivals at Hospital -Number of patients that arrived at the emergency department or directly to the hospital (external arrivals), on each day.

Patient Arrivals to Ward via Emergency Department - Number of patients that were admitted to the hospital via emergency department, on each day.

Patient Arrivals to Ward via Emergency Department (by ward_department) - Number of patients that were admitted to the hospital via emergency department, on each day, by ward_department dictionary.

Patient Arrivals to Ward - Number of patients that were admitted to the hospital (directly or via emergency department), on each day.

Patient Arrivals to Ward (by ward_department) - Number of patients that were admitted to the hospital (directly or via emergency department), on each day, by ward_department dictionary.

Patient Arrivals directly to Ward - Number of patients that were admitted directly to wards, on each day.

Patient Arrivals directly to Ward (by ward_department) - Number of patients that were admitted directly to wards, by ward_department dictionary, on each day.

Patient Arrivals to Ward (by physical location, including transferring) - Number of patients that were admitted to the hospital, on each day, by the actual ward where the patient was located, including transferring between wards.

Patient Discharges from Hospital - Number of patients that were discharged from the hospital, on each day.

Patient Discharges from Ward - Number of patients that were discharged from wards, on each day.

Patient Discharges from Ward (by ward_department) -Number of patients that were discharged from wards, on each day, by ward_department dictionary.

Patient Leaving Emergency Department -Number of patients that were discharged from the emergency department for each of its units, categorized by the cause of leaving, on each day.

Average Length of Stay in Emergency Department (hours) - Average length of stay (in hours) in emergency department, on each day, for each of its units.

Average Length of Stay in Ward (hours) - Average length of stay (in hours) in wards, on each day.

Average Delay in ED-to-Ward transfer (hours) - Average length of stay (in hours) of patients in the emergency department until their transfer to a ward is carried out, on each day, for each of its units.

Average Delay in ED-to-Ward transfer (hours) (by ward_department) - Average length of stay of patients (in hours) in emergency department until their transfer to a ward is carried out, on each day, for each of its units, by ward_department dictionary

Proportion of Admissions to Wards from Emergency Department – Proportion of patients that were moved from the emergency department to the hospital wards from among all those released from the emergency department, on each day.

Proportion of leaving for Home from Emergency Department - Proportion of patients that were released from the emergency department to home from among all those released from the emergency department, on each day.

Distributions

Time by ED state (sec.) - Distribution of time in seconds (24-hour period) by the number of patients in the emergency department.

Infant age arrivals at Emergency Department (months) - Distribution of infants that arrived at the emergency department by their age, in months.

Patient age arrivals at Emergency Department (years) - Distribution of patients that arrived at the emergency department by their age.

Patient length of stay in Emergency Department - Distribution of the length of stay of patients in the emergency department, in seconds.

Patient length of stay in Emergency Department (hours) - Distribution of the length of stay of patients in the emergency department, in hours

Patient length of stay in Hospital (days) - Distribution of the total length of stay (in days) in the hospital, where admissions come from the emergency department or directly to a hospital department. The time is between the first arrival at the department and release from the hospital.

Patient length of stay in Hospital (hours) - Distribution of the total length of stay (in hours) in the hospital, where admissions come from the emergency department or directly to a hospital department. The time is between the first arrival at the department and release from the hospital.

Patient length of stay in Ward (days) - Distribution of the length of stay (in days) of patients in hospital departments.

Patient length of stay in Ward (days) (by ward_department) - Distribution of the length of stay (in days) of patients in hospital departments, by ward_department dictionary.

Patient length of stay in Ward (hours) - Distribution of the length of stay (in hours) of patients in hospital departments.

Patient length of stay in Ward (hours) (by ward_department) - Distribution of the length of stay (in hours) of patients in hospital departments, by ward_department dictionary.

Patient length of stay in ICU (hours) - Distribution of the length of stay (in hours) of patients in intensive care units.

Waiting time in ED-to-Ward transfer (minutes) - Distribution of the waiting time (in minutes) in the emergency department of patients until their transfer to a ward is carried out.

Waiting time in ED-to-Ward transfer (minutes) (by ward_department) - Distribution of the waiting time (in minutes) in the emergency department of patients until their transfer to a ward is carried out, by ward_department dictionary.