

Appendix 1. ED Characteristics

	Maastad Hospital, Rotterdam, the Netherlands	Erasmus MC, Rotterdam, the Netherlands	Hospital Fernando da Fonseca, Lisbon, Portugal	St Mary's Hospital, London, United Kingdom	General Hospital, Vienna, Austria
Hospital characteristics	Teaching hospital 59 paediatric beds	University hospital 60 paediatric beds	Community hospital 91 paediatric beds	University hospital 46 paediatric beds	University hospital 74 paediatric beds
Catchment area	Urban Generally low socio-economic status	Urban Mixed high and low socio-economic status	Mixed urban and rural Generally low socio-economic status	Urban Mixed high and low socio-economic status	Urban Mixed high and low socio-economic status
Emergency department characteristics	Mixed adult-paediatric 9500 children/year	Paediatric only till October 2014, from then on mixed 6500 children/year	Paediatric only 60,000 children/year	Paediatric only 27,000 children/year	Paediatric only 22,000 children/year
Supervising physician	Paediatrician	Paediatrician	Paediatrician	Paediatric emergency physician	Paediatrician
Inclusion period	01-05-2014 to 31-10-2015	01-01-2012 to 31-12-2014	01-03-2014 to 28-02-2015	01-07-2014 to 28-02-2015	01-01-2014 to 31-12-2014
Number of patients included	10,484	13,968	53,175	15,027	19,268
Primary care availability	24/7	24/7	Daytime and evenings	Daytime and evenings	Daytime
Referral by emergency service	4.5%	8.9%	4.0%	5.6%	Not available
Self-referral	17%	27%	96%	82%	>90%*
Comorbidity in all children	<10%*	38%	<10%*	11%	10%

Appendix 2. MTS presentational flow charts reclassified into 10 presentational flow chart categories

Category	MTS presentational flow charts[15]
Cardiac	Chest pain, palpitations
Dermatologic	Abscesses and local infections, bites and stings, burns and scalds, rashes, Wounds
Ear Nose Throat	Ear problems, facial problems, sore throat
Gastrointestinal	Abdominal pain in adults, abdominal pain in children, diarrhoea and vomiting, gastrointestinal bleeding
Neurologic, psychiatric and intoxications	Apparently drunk, behaving strangely, collapsed adult, fits, Headache, mental illness, overdose and poisoning, self-harm
Respiratory	Asthma, shortness of breath in adults, shortness of breath in children
Trauma/Muscular	Assault, back pain, falls, head injury, limping child, limb problems, major trauma, neck pain, torso injury
Unwell	Crying baby, irritable child, unwell adult, unwell child, worried parent
Urinary/gynaecological	Pregnancy, per vaginum bleeding, sexually acquired infection, testicular pain, urinary problems
Other	Allergy, dental problems, diabetes, eye problems, exposure to chemicals, foreign body, major incidents