

## Supplementary materials

**Supplementary Table S1.** Swiss cantons listed by the seven regions used for the study.

<b>Region</b>	<b>Cantons</b>
Leman	Geneva, Vaud, Valais
Mittelland	Bern, Solothurn, Fribourg, Neuchâtel, Jura
Northwest	Basel-Stadt, Basel-Landschaft, Aargau
Zurich	Zürich
Eastern	St. Gallen, Thurgau, Appenzell Innerrhoden, Appenzell Ausserrhoden, Glarus, Schaffhausen, Graubünden
Central	Uri, Schwyz, Obwalden, Nidwalden, Lucerne, Zug
Ticino	Ticino

**Supplementary Table S2.** Inclusion and exclusion criteria to define a potentially avoidable hospitalization for asthma.

<b>Inclusion criteria §</b>	
ICD-10-WHO	J450 PREDOMINANTLY ALLERGIC ASTHMA J451 NONALLERGIC ASTHMA J458 MIXED ASTHMA J459 ASTHMA, UNSPECIFIED J46 STATUS ASTHMATICUS
<b>Exclusion criteria †</b>	
ICD-10-WHO	E840 CYSTIC FIBROSIS WITH PULMONARY MANIFESTATIONS E841 CYSTIC FIBROSIS WITH INTESTINAL MANIFESTATIONS E848 CYSTIC FIBROSIS WITH OTHER MANIFESTATIONS E849 CYSTIC FIBROSIS, UNSPECIFIED P27.0 WILSON-MIKITY SYNDROME P27.1 BRONCHOPULMONARY DYSPLASIA ORIGINATING IN THE PERINATAL PERIOD P27.8 OTHER CHRONIC RESPIRATORY DISEASES ORIGINATING IN THE PERINATAL PERIOD P27.9 UNSPECIFIED CHRONIC RESP DISEASE ORIGINATING IN THE PERINATAL PERIOD Q25.4 OTHER CONGENITAL MALFORMATIONS OF AORTA Q31.1 CONGENITAL SUBGLOTTIC STENOSIS Q31.2 LARYNGEAL HYPOPLASIA Q31.3 LARYNGOCELE Q31.5 CONGENITAL LARYNGOMALACIA Q31.8 OTHER CONGENITAL MALFORMATIONS OF LARYNX Q31.9 CONGENITAL MALFORMATION OF LARYNX, UNSPECIFIED Q32.0 CONGENITAL TRACHEOMALACIA Q32.1 OTHER CONGENITAL MALFORMATIONS OF TRACHEA Q32.2 CONGENITAL BRONCHOMALACIA Q32.3 CONGENITAL STENOSIS OF BRONCHUS Q32.4 OTHER CONGENITAL MALFORMATIONS OF BRONCHUS Q33.0 CONGENITAL CYSTIC LUNG Q33.1 ACCESSORY LOBE OF LUNG Q33.2 SEQUESTRATION OF LUNG Q33.3 AGENESIS OF LUNG Q33.4 CONGENITAL BRONCHIECTASIS Q33.5 ECTOPIC TISSUE IN LUNG Q33.6 HYPOPLASIA AND DYSPLASIA OF LUNG Q33.8 OTHER CONGENITAL MALFORMATIONS OF LUNG Q33.9 CONGENITAL MALFORMATION OF LUNG, UNSPECIFIED Q34.0 ANOMALY OF PLEURA

	<p>Q34.1 CONGENITAL CYST OF MEDIASTINUM</p> <p>Q34.8 OTHER SPECIFIED CONGENITAL MALFORMATIONS OF RESPIRATORY SYSTEM</p> <p>Q34.9 CONGENITAL MALFORMATION OF RESPIRATORY SYSTEM, UNSPECIFIED</p> <p>Q39.0 ATRESIA OF OESOPHAGUS WITHOUT FISTULA</p> <p>Q39.1 ATRESIA OF OESOPHAGUS WITH TRACHEO-OESOPHAGEAL FISTULA</p> <p>Q39.2 CONGENITAL TRACHEO-OESOPHAGEAL FISTULA WITHOUT ATRESIA</p> <p>Q39.3 CONGENITAL STENOSIS AND STRICTURE OF OESOPHAGUS</p> <p>Q39.4 OESOPHAGEAL WEB</p> <p>Q39.8 OTHER CONGENITAL MALFORMATIONS OF OESOPHAGUS</p> <p>Q89.3 SITUS INVERSUS</p>
<ul style="list-style-type: none"> <li>- Cases where the patient died in hospital during the admission</li> <li>- Cases resulting from a transfer from another acute care institution (transfers-in)</li> <li>- Pregnancy, childbirth, and puerperium</li> <li>- Same day/day only admissions</li> </ul>	

§, based on ICD-10 codes for the main cause of admission;

†, based on ICD-10 codes for secondary diseases or comorbidities. According to OECD Health Care Quality Indicators Project criteria [OECD. Health Care Quality and Outcomes (HCQO) 2018-19 Indicator definitions. [cited 2023 21.03.2023]; Available from: <http://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf>].

**Supplementary Table S3.** Inclusion and exclusion criteria to define a potentially avoidable hospitalization for chronic obstructive pulmonary disease.

<b>Inclusion criteria §</b>	
ICD-10-WHO	<p>J40 BRONCHITIS*</p> <p>J410 SIMPLE CHRONIC BRONCHITIS</p> <p>J411 MUCOPURULENT CHRONIC BRONCHITIS</p> <p>J418 MIXED SIMPLE AND MUCOPURULENT CHRONIC BRONCHITIS</p> <p>J42 UNSPECIFIED CHRONIC BRONCHITIS</p> <p>J430 MACLEOD'S SYNDROME</p> <p>J431 PANLOBULAR EMPHYSEMA</p> <p>J432 CENTRILOBULAR EMPHYSEMA</p> <p>J438 OTHER EMPHYSEMA</p> <p>J439 EMPHYSEMA, UNSPECIFIED</p> <p>J440 COPD WITH ACUTE LOWER RESPIRATORY INFECTION</p> <p>J441 COPD WITH ACUTE EXACERBATION, UNSPECIFIED</p> <p>J448 OTHER SPECIFIED CHRONIC OBSTRUCTIVE PULMONARY DISEASE</p> <p>J449 CHRONIC OBSTRUCTIVE PULMONARY DISEASE, UNSPECIFIED</p> <p>J47 BRONCHIECTASIS</p> <p>* Qualifies only if accompanied by secondary diagnosis of J41, J43, J44, J47</p>
<b>Exclusion criteria</b>	
<ul style="list-style-type: none"> <li>- Cases where the patient died in hospital during the admission</li> <li>- Cases resulting from a transfer from another acute care institution (transfers-in)</li> <li>- Pregnancy, childbirth, and puerperium</li> <li>- Same day/day only admissions</li> </ul>	

§, based on ICD-10 codes for the main cause of admission;

According to OECD Health Care Quality Indicators Project criteria [13. OECD. Health Care Quality and Outcomes (HCQO) 2018-19 Indicator definitions. [cited 2021 08.01.2021]; Available from: <http://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf>.].

**Supplementary Table S4.** Values of the diagnosis-related group point for 24 cantons of Switzerland.

<b>Canton</b>	<b>Year</b>	<b>Value (CHF)</b>
AG	2020	9,600.00
AI	2020	9,480.00
AR	2020	9,555.00
BE	2020	10,800.00
BL	2020	9,733.00
BS	2020	10,160.00
FR	2020	9,092.00
GE	2020	10,650.00
GL	2020	9,710.00
GR	2019	9,640.00
JU	2020	9,650.00
LU	2020	9,800.00
NE	2020	9,650.00
NW	2020	10,650.00
OW	2019	9,635.00
SG	2020	9,900.00
SH	2020	9,595.00
SO	2020	9,650.00
SZ	2020	9,772.00
UR	2020	10,650.00
VD	2020	10,650.00
VS	2020	9,550.00
ZG	2020	10,840.00
ZH	2020	10,855.00

1 CHF=1.01 EUR or 1.07 USD as of 16.03.2023