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Indicator Construction: Length of Stay (Unadjusted) Family

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Indicator Construction: Length of Stay (Unadjusted) Family

Author:	Jesmond Smith
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DOCUMENT MANAGEMENT

REVISION HISTORY

Version	Date	Summary of Changes
0.1	6 th April	Draft following Indicator Specifications Template
0.2	22 nd April	Addition of 'LOSU for Surgery for Goitre'
0.3	29 th April	Change to title page and addition of indicator category descriptions. . Change of twelve months to thirty six months in the data filters

APPROVALS

Name	Signature	Title	Date of Issue	Version
Heather Dawe		Clinical Indicators Programme Manager		

REVIEW DETAILS

Review Date:	
Reviewer:	Clinical Indicators team

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1. Overview

Indicator Family Name
Length of Stay (Unadjusted)

Indicator Family Code
LOSU_PD

Subject
Length of Stay indicator for selected procedures (unadjusted mean length of stay).

Condition	Indicator Code	Indicator Category
Alcoholic Liver Disease	I00226	4
Coronary Angiography	I00256	1
Coronary Angioplasty	I00258	1
Examination of Uterus	I00263	1
Fractured Neck of Femur	I00558	4
Gallbladder Surgery	I00265	1
Heart Failure	I00092	4
Mastectomy for Breast Cancer	I00532	2
Pacemaker Implantation	I00273	1
Radical prostatectomy for prostate cancer	I00076	2
Surgery for Goitre	I00114	2
Surgery for Lung Cancer	I00123	1
Surgery for Oesophageal Cancer	I00546	2
Surgery for Ovarian Cancer	I00102	3
Surgery for Stomach Cancer	I00543	2
Surgery for Uterine Cancer	I00105	3
Surgery on Lower Back (Lumbar Spine)	I00282	1
Transurethral Resection of Prostate (TURP)	I00270	1
Varicose Vein Stripping	I00286	1

Detailed Descriptor
This indicator shows the mean length of stay for patients with the selected first main procedure and/or primary diagnosis. The indicator is broken down by NHS Trust

2. Construction

Reporting Frequency
Data supplied on monthly basis.
Reporting required on a monthly basis.
Data used will be 6 months in arrears.

Data Source
Hospital Episode Statistics (HES).

Calculation Methodology
<p><u>Introduction</u></p> <p>The Unadjusted Length of Stay is defined as the mean length of stay for the procedure or condition of interest, and is calculated by dividing the total days of all spells by the count of spells.</p> <p>The data are filtered to where the patient was aged 19 or over</p>
<p><u>Indicator Category Descriptions</u></p> <p>The indicators in the volume family are split into different categories due to the differences in the filtering applied to the data. All indicator categories are filtered to patients aged 19 or over, to exclude daycase and patients discharged as dead.</p> <p>Indicators in Category 1 have the filters described above and consider activity by main procedure, where the main activity is unique, has an operation code specific to the indicator, does not have a diagnosis of cancer and is an elective admission. 12 months of data is used to calculate this indicator.</p> <p>Indicators in Category 2 have the filters described above and consider activity by main procedure, where the main activity is unique, has an operation code specific to the indicator, has a primary diagnosis for the procedure specific for the indicator and is an elective admission. 12 months of data is used to calculate this indicator.</p> <p>Indicators in Category 3 have the filters described above and consider activity by main procedure, where the main activity is unique, has an operation code specific to the indicator, has a primary diagnosis for the procedure specific for the indicator and is an elective admission. 36 months of data is used to calculate this indicator.</p> <p>Indicators in Category 4 have the filters described above and consider activity by the primary diagnosis code specific for the indicator and for emergency admissions. 12 months of data is used to calculate this indicator.</p>

Data Fields

The required data fields for each indicator are indicated by a cross (x) in the table below.

			Indicator Category			
	Field	Description	1	2	3	4
Main Extract	CIP_SPELL_ID	An identifying number unique to each spell.	X	X	X	X
	SPELL_DISDATE_CLND	The discharge date following the original spell in hospital.	X	X	X	X
	SPELLSTARTAGE	The age of the patient at the start of the spell.	X	X	X	X
	SPELL_ADMIMETH	The admission method for the spell.	X	X	X	X
	FIRST_CLASSPAT	Identifies the patient classification.	X	X	X	X
	LAST_DISMETH	Method of discharge from hospital	X	X	X	X
	FIRST_PS_LOS	Number of days in the provider spell (days within the Trust where the patient was admitted)				X
	FIRST_DIAG_01_CLND	The primary diagnosis of the patient for the first episode in the spell in.				X
	FIRST_PROCODETC_IC_MAPPED	The provider code of the hospital the patient was admitted to				X
Procedures Extract	CIP_SPELL_ID	An identifying number unique to each spell.	X	X	X	
	CIP_SEQ	A sequential number to identify the order of the episodes that the procedure was recorded in within each spell.	X	X	X	
	OPER_SEQ	A sequential number to identify the order procedures were recorded within an episode.	X	X	X	
	OPER_CODE	The code of the procedure.	X	X	X	
	PROVIDER_LOS	Number of days in the provider spell (days within the Trust where the procedure was carried out).	X	X	X	
	DIAG_01_CLND	The primary diagnosis of the patient for the episode that the procedure was recorded in.	X	X	X	

Data Filters

The two extract files are linked using CIP_SPELL_ID. The main extract will contain one row per CIP_SPELL_ID. The procedures extract could contain many rows per CIP_SPELL_ID if there is more than one procedure in the continuous inpatient (CIP) spell. If there were no procedures in the CIP spell, then the CIP_SPELL_ID will not appear in the procedures extract.

Following the data filters below there will only be rows for procedures relating to the procedure of interest, and spells containing the procedure of interest. A cross (x) under an indicator indicates the filter is required for that indicator.

Field Name	Conditions	Rationale	Indicator Category			
			1	2	3	4
OPER_SEQ	Is equal to 1	This identifies the main procedures within the continuous inpatient spell	X	X	X	
CIP_SPELL_ID; CIP_SEQ	The minimum value of CIP_SEQ for each unique CIP_SPELL_ID	Identifies the first episode in each continuous inpatient spell with a main procedure. Following this filter there will be a maximum of one row in the Procedures Extract to each entry in the Main Extract.	X	X	X	
OPER_CODE	Is equal to any of the following { list of codes } See Table in Appendix 1 for OPCS-4 codes specific to the procedure.	This gives the procedure undergone by the patient. The codes are OPCS-4 classification codes for the procedure relevant to the indicator.	X	X	X	
SPELL_DISDATE_CLND	12 month period to end of month N-2. For example, data received for 2009/10 Month 1 will contain data up till the end of April 2009 (numbering of months is based on financial years). To calculate indicators up to the end of 'Month N-2' will mean using the data up to the end of February 2009.	This field is the discharge date following the spell in hospital for the procedure. The data looked at needs to be over a twelve month period, the exact values for which will change monthly.	X	X		X
	36 month period to end of month N-2. For example, data received for 2009/10 Month 1 will contain data up till the end of April 2009 (numbering of months is based on financial years). To calculate indicators up to the end of 'Month N-2' will mean using the data up to the end of February 2009	This field is the discharge date following the spell in hospital for the procedure. The data looked at needs to be over a thirty six month period, the exact values for which will change monthly			X	

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SPELLSTARTAGE	>18 and <7000	This field describes the age of the patient at the start of their spell in hospital. For this indicator only patients over the age of 18 are considered. For children under the age of 1 year, codes of 7001 through to 7007 may be used instead of 0 to describe their age in days. This is why the further classification relating to 7000 is needed.	X	X	X	X
DIAG_01_CLND	Is equal to any of the following { list of codes } See Table 1 in Appendix 1 for ICD-10 codes for the diagnosis specific to the indicator.	This field gives the primary diagnosis for the admitted patient.		X	X	
	Is not equal to any of the following { list of codes } Appendix 2 for ICD-10 codes for the diagnosis specific to the indicator.	Spells with a primary diagnosis of cancer are excluded from this indicator. The codes are the relevent ICD-10 classification codes for cancer that need to be excluded.	X			
FIRST_DIAG_01_CLND	Is equal to any of the following { list of codes } See Table 1 in Appendix 1 for ICD-10 codes for the diagnosis specific to the indicator.	This field gives the primary diagnosis for the admitted patient.				X
SPELL_ADMIMETH	is equal to any of the following; 11, 12, 13	This will include elective cases	X	X	X	
	is equal to any of the following; 21, 22, 23,24, 28	This will include emergency cases				X
FIRST_CLASSPAT	is not equal to 2	This will exclude daycases	X	X	X	X
LAST_DISMETH	is not equal to 4	This will exclude patients who were discharged dead.	X	X	X	X

Calculation Methodology

Length of Stay (Unadjusted)

The mean length of stay is calculated for procedure based indicators as follows;

$$\frac{\text{SUM of PROVIDER LOS (Total days of all spells)}}{\text{COUNT of CIP_SPELL_ID (Count of spells)}}$$

The mean length of stay is calculated for diagnosis based indicators as follows;

$$\frac{\text{SUM of FIRST PS LOS (Total days of all spells)}}{\text{COUNT of CIP_SPELL_ID (Count of spells)}}$$

Level of Reporting

Length of Stay is calculated for each provider:

Group by: PROCODETC_IC_MAPPED

Activity Volume

The Unadjusted Length of Stay for Trusts with a count of less than 30 CIP spells will not be calculated, due to the possibility of patient identification or low numbers giving rise to an unstable or misleading mean length of stay.

Appendix 1- Clinical Codes

Procedure	Diagnosis	OPCS-4	ICD-10	Indicators
Alcoholic Liver Disease	Alcoholic Liver Disease		K700, K702, K703, K704, K709	I00226
Coronary Angiography		K631, K632, K633, K634, K635, K636, K638, K639, K651, K652, K653, K654, K658, K659		I00256
Coronary Angioplasty		K491, K492, K493, K494, K498, K499, K501, K502, K503, K504, K508, K509, K751, K752, K753, K754, K758, K759		I00258
Examination of Uterus		Q181, Q188, Q189		I00263
Fractured Neck of Femur	Fractured Neck of Femur		S720, S721, S722	I00558
Gallbladder Surgery		J181, J182, J183, J184, J185, J188, J189		I00265
Heart Failure	Heart Failure		I500, I501, I509	I00092
Mastectomy for Breast Cancer		B271, B272, B273, B274, B275, B276, B278, B279	C500, C501, C502, C503, C504, C505, C506, C508, C509, D050, D051, D057, D059	I00532
Pacemaker Implantation		K601, K602, K603, K604, K605, K606, K607, K608, K609		I00273

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Radical prostatectomy for prostate cancer	Prostate cancer	M611, M612, M613, M614, M618, M619	C61X	I00076
Surgery for Lung Cancer	Lung cancer	E541, E542, E543, E544, E558	C340, C341, C342, C343, C348, C349	I00123
Surgery for Oesophageal Cancer	Oesophageal cancer	G011, G012, G013, G018, G019, G021, G022, G023, G024, G025, G028, G029, G031, G032, G033, G034, G035, G036, G038, G039	C150, C151, C152, C153, C154, C155, C158, C159	I00546
Surgery for Ovarian Cancer	Ovarian cancer	Q074, Q221	C56X	I00102
Surgery for Stomach Cancer	Gastric cancer (stomach cancer)	G011, G012, G013, G018, G019, G271, G272, G273, G274, G275, G278, G279, G281, G282, G283, G284, G285, G288, G289	C160, C161, C162, C163, C164, C165, C166, C168, C169, D002	I00543
Surgery for Uterine Cancer	Uterine cancer (malignant neoplasm of uterus)	Q074, Q221	C540, C541, C542, C543, C548, C549, C55X, D070	I00105
Surgery on Lower Back (Lumbar Spine)		V251, V252, V253, V254, V255, V256, V257, V258, V259, V261, V262, V263, V264, V265, V266, V267, V268, V269, V281, V282, V288, V289, V331, V332, V333, V334, V335, V336, V337, V338, V339, V341, V342, V343, V344, V345, V346, V347, V348, V349, V382, V383, V384, V385, V386, V393, V394, V395, V396, V397, V433, V473, V485, V486, V493, V563, V573, V583, V593, V603, V613, V623, V633		I00282
Transurethral Resection of Prostate (TURP)		M651, M652, M653, M654, M655, M658, M659		I00270
Varicose Vein Stripping		L851, L852, L853, L858, L859, L871, L872, L873, L874, L875, L876, L877, L878, L879		I00286

Table 1. OPCS-4 and ICD-10 classification codes that define each procedure and diagnosis respectively.
Clinical Code Source: Doctor Foster Intelligence (DFI)

Appendix 2 - Cancer codes to exclude

Below is the complete list of cancer codes in field DIAG_01_CLND for exclusion.

C000,C001,C002,C003,C004,C005,C006,C008,C009,C01X,C020,C021,C022,C023,C024,C028,C029,C030,C031,C039,C040,C041,C048,C049,C050,C051,C052,C058,C059,C060,C061,C062,C068,C069,C07X,C080,C081,C088,C089,C090,C091,C098,C099,C100,C101,C102,C103,C104,C108,C109,C110,C111,C112,C113,C118,C119,C12X,C130,C131,C132,C138,C139,C140,C148,C150,C151,C152,C153,C154,C155,C158,C159,C160,C161,C162,C163,C164,C165,C166,C168,C169,C170,C171,C172,C173,C178,C179,C180,C181,C182,C183,C184,C185,C186,C187,C188,C189,C19X,C20X,C210,C211,C212,C218,C220,C221,C222,C223,C224,C227,C229,C23X,C240,C241,C248,C249,C250,C251,C252,C253,C254,C257,C258,C259,C260,C261,C268,C269,C300,C301,C310,C311,C312,C313,C318,C319,C320,C321,C322,C323,C328,C329,C33X,C340,C341,C342,C343,C348,C349,C37X,C380,C381,C382,C383,C384,C388,C390,C398,C399,C400,C401,C402,C403,C408,C409,C410,C411,C412,C413,C414,C418,C419,C450,C451,C452,C457,C459,C461,C462,C467,C469,C470,C471,C472,C473,C474,C475,C476,C478,C479,C480,C481,C482,C488,C490,C491,C492,C493,C494,C495,C496,C498,C499,C500,C501,C502,C503,C504,C506,C508,C509,C510,C511,C512,C518,C519,C52X,C530,C531,C538,C539,C540,C541,C542,C543,C548,C549,C55X,C56X,C570,C571,C572,C573,C574,C577,C578,C579,C58X,C600,C601,C602,C608,C609,C61X,C620,C621,C629,C630,C631,C632,C637,C638,C639,C64X,C65X,C66X,C670,C671,C672,C673,C674,C675,C676,C677,C678,C679,C680,C688,C689,C690,C691,C692,C693,C694,C695,C696,C698,C699,C700,C701,C709,C710,C711,C712,C713,C714,C715,C716,C717,C718,C719,C720,C721,C722,C723,C724,C725,C728,C729,C73X,C740,C741,C749,C750,C751,C752,C753,C754,C755,C758,C759,C760,C761,C762,C763,C764,C765,C767,C768,C960,C961,C962,C963,C967,C969,D000,D001,D002,D010,D011,D012,D013,D014,D015,D017,D020,D021,D022,D023,D024,D050,D051,D057,D059,D060,D061,D067,D069,D070,D071,D072,D073,D074,D075,D076,D090,D091,D092,D093,D097,D099