

**LTU Research (Library)**

## Bendigo–Health Collection (Bendigo) (MODS02)

Description of collection and Guidelines for analysing it

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## CHAPTER 1. INPUT CONVENTIONS

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Convention	Description
<b>screen</b>	Monospace fonts show values (for example, of file-name references)
<b>boldface</b>	Boldface text indicates key terms
<i>italics</i>	Italic text indicates a system variable.
→	→ indicates a process.

Table 1.1: Conventions

The collection contained herewith is one of the outputs of a project funded by the **Australian National Data Service (ANDS)** as one of the **Major Open Data Collections (MODC)** funded nationally for partner institutions to publish nationally and internationally significant datasets, as fully open data.

**La Trobe University Library (LTU-Lib)** partnered with our Health Sciences Faculty (**LTU-HS**) to procure data sets from two Victorian regional health service providers in 2014/15 – **Loddon Mallee Murray Medicare Local (LMMML)** and **Bendigo Health Hospital (BHH)** – and from these created publically available, healthy communities data collections for research purposes. The data sets from both health providers (BHH and LMMML) cover patient data for the years 2005-2014. The intent was to combine these data sets with data from other sources (**Australian Bureau of Statistics (ABS)**, **Australian Institute of Health and Welfare (AIHW)**) to produce a single, unified collection – as depicted in Figure 2.1. Constraints of time under conditions of having to be meet strict ethical requirements meant that the two main data sets procured from **LMMML** and **BHH** could not be joined. As a result, the data-sets have had to be published as separate collections; one covering the **LMMML** data, the other – described in this document – covering the **BHH** data.

Despite not being able to combine **BHH** and **LMMML** data-sets, each *have* been com-

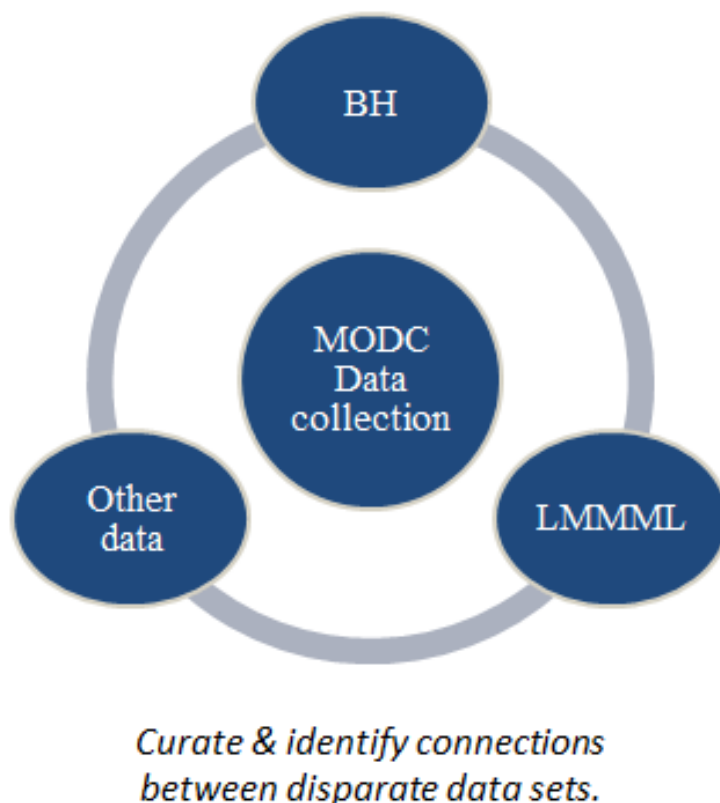


Figure 2.1: Model for MODC Data Collection

bined with other data to substantially enrich what is available to researchers for querying on. Processes required for processing and combining the raw data sets into their publishable endpoints have also been fully scripted, thereby easing the task of combining **BHH** and **LMMML** data-sets in the future.

**BHH** data records include **Statistical Local Area (SLA)** codes and these have been linked to **ABS**–socio-economic data. **BHH** records also include **Australian Refined Diagnosis Related Groups (AR-DRG)** codes, which have been linked to **AIHW**-data to obtain descriptive information about the codes and for the purpose of aggregating the data.

To meet the requirement that the data be anonymised, it was filtered by age (Year-Of-Birth between 1925 – 2005) and sex (Male or Female). The **Australian Refined Diagnosis Related Groups (AR-DRG)**-classification for each record was then aggregated to the coarsest level (**Major Diagnostic Category (MDC)**) and all dates rounded-down to the nearest 5-year value. Finally, aggregated counts for each category of classification – **Diagnosis\_Group** (`bh_drg_group`), **Admission\_Type** (`bh_admission_type`), **Care\_Type** (`bh_care_type`), **Length Of Stay** (`bh_length_of_stay`), **Separation\_Method** (`bh_separation_method`) and **Source\_Of\_Admission** (`bh_source_of_admission`) – were calculated and those **Patient\_Episode** records were deleted where represented in any category having less than 50 records in total.<sup>1</sup>

After filtering, 40,237 records remained of the 48,215 raw data records received from **BHH**. These 40,237 records were normalised into a re-configured main table (**Patient\_Episode** (`bh_patient_episode`)) and (above-cited) look-up tables.

Chapter 3 details the main entities and relationships comprising the **BHH** collection.

Chapter 4 gives an inventory of the files in the **BHH** collection.

Chapter 5 describes and enumerates the contents of the derived look-up tables present in the collection and describes the the linking relationships between the main **BHH** table and these look-up tables.

Chapter 6 details table column definitions for all columns in all tables in the **BHH** collection, along with descriptive information about the meaning of each column.

Chapter 7 gives summary tables of **Patient\_Episode** record counts grouped by each category of classification.

Chapter 8 provides an example of running a query against the **BHH** collection.

Appendix A gives data processing details.

Appendices B and C gives details of the source, acquisition and preparation of **ABS** and **AR-DRG** data, respectively.

Appendix D lists contents of all **SLAs** linked to by the **BHH** data.

Appendix E lists log output of the processes run to generate published data from the raw data as received from **BHH**.

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<sup>1</sup>The only location information present in the **BHH** raw data received was the **SLA**. (Unlike the **LMMML** raw data) this was deemed already sufficiently aggregated not to require further processing.

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## CHAPTER 3. SUMMARY OF THE COLLECTION

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Figure 3.1 is an Entity–Relationship diagram for the main entities and relationships comprising the Bendigo Health data collection:

- **Patient\_Episode** (bh\_patient\_episode)
- **Diagnosis\_Group** (bh\_drg\_group)
- **Location** (bh\_abs)

Table names corresponding to entities described are given in parentheses.

Table 3.1 describes the main linking relationships between the BendigoHealth database tables.

Contents of all Diagnoses Groups linked to by Patient\_Episode are listed in Table 3.2.

Contents of all (**ABS**) locations (=SLAs) linked to by bh\_patient\_episode are listed in Table D.1 of Appendix D.

**Patient\_Episode** (bh\_patient\_episode) also has look-up tables for **Admission\_Type** (bh\_admission\_type), **Source\_Of\_Admission** (bh\_source\_of\_admission), **Length Of Stay** (bh\_length\_of\_stay), **Separation\_Method** (bh\_separation\_method) and **Care\_Type** (bh\_care\_type). The contents of these look-up tables are given in Chapter 5.

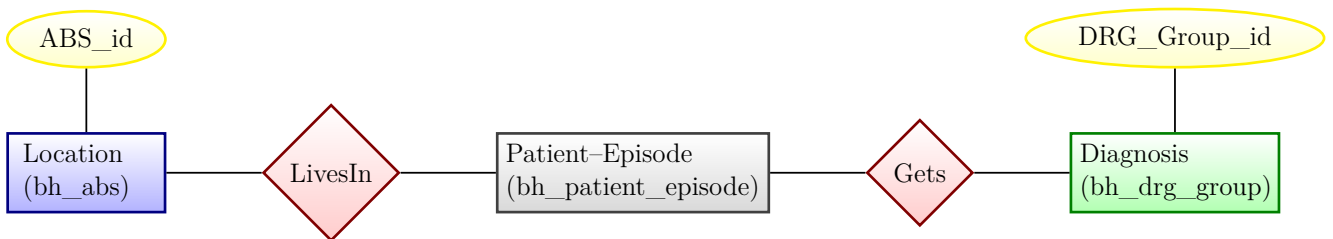


Figure 3.1: E–R diagram for Medicare Local data (Bendigo)

BH-entity = BH–Data; ABS-entity = ABS–Data; AIHW-entity = AIHW–Data;

Table ...	Column	→	Lookup-Table ...	-Col
bh_patient_episode	DRG_id	→	bh_drg_group	id
bh_patient_episode	DRG_id	→	bh_abs	id

Table 3.1: Linking relationships between key tables

Table 3.2: [bh\_drg\_group]

id	MDCCategory	DRGGroup
1	8	Unrelated OR DRGs
2	9	Error DRGs
3	A	Major procedures where the principal diagnosis may be associated with any MDC
4	B	Diseases and disorders of the nervous system
5	C	Diseases and disorders of the eye
6	D	Diseases and disorders of the ear, nose, mouth and throat
7	E	Diseases and disorders of the respiratory system
8	F	Diseases and disorders of the circulatory system
9	G	Diseases and disorders of the digestive system
10	H	Diseases and disorders of the hepatobiliary system and pancreas
11	I	Diseases and disorders of the musculoskeletal system and connective tissue
12	J	Diseases and disorders of the skin, subcutaneous tissue and breast
13	K	Endocrine, nutritional and metabolic diseases and disorders
14	L	Diseases and disorders of the kidney and urinary tract
15	M	Diseases and disorders of the male reproductive system
16	N	Diseases and disorders of the female reproductive system
17	O	Pregnancy, childbirth and the puerperium
18	P	Newborns and other neonates
19	Q	Diseases and disorders of the blood and blood forming organs and immunological disorders
20	R	Neoplastic disorders (haematological and solid neoplasms)
21	S	Infectious and parasitic diseases
22	T	42
23	U	Mental diseases and disorders
24	V	Alcohol/drug use and alcohol/drug induced organic mental disorders
25	W	Injuries, poisoning and toxic effects of drugs
26	X	42
27	Y	Burns
28	Z	Factors influencing health status and other contacts with health services



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## CHAPTER 4. INVENTORY OF THE COLLECTION

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The **Bendigo Health Hospital** data collection is represented in the repository in **MySQL** database format (`bh_all.sql`) and as **Comma Separated Values (CSV)** exports of the individual tables within that database. Also present in the collection are **XLS** spreadsheets of **ABS** Socio-economic data by Statistical Local Area (**SLA**) (`DRG-Mapping-Table.xlsx`) and **Australian Refined Diagnosis Related Groups (AR-DRG)**s. The **AR-DRG**-diagnosis and **ABS**-location information present in the database was obtained from these two sources. Table 4.1 lists the files present in the repository and Table 4.2 lists the (database look-up table export) files present within the compressed zip archive `exportTables.zip`.

FileName	FileSize	File Description
<i>Database tables</i>		
<code>exportTables.zip</code>	3.5Mb	Compressed zip of select <b>BHH</b> database tables exported in <b>CSV</b> format
<code>bh_all.sql</code>	.5Mb	<b>MySQL</b> dump of select <b>BHH</b> database tables
<i>Auxilliary tables</i>		
<code>DRG-Mapping-Table.xlsx</code>	217K	<b>AR-DRG</b>
<code>ABS.xlsx</code>	2.2M	Australian Bureau of Statistics – Socio-economic data by Statistical Local Area ( <b>SLA</b> )
<i>Documentation</i>		
<code>guidelinesForUsingBHData.pdf</code>	571K	Documentation (This file.)

Table 4.1: Files in collection

FileName	FileSize	File Description
bh_abs.csv	614K	Export of [bh_abs] (derived from ingest of ABS.xlsx)
bh_admission_type.csv	291	Export of [bh_admission_type]
bh_care_type.csv	815	Export of [bh_care_type]
bh_drg.csv	74K	Export of [bh_drg] (derived from ingest of DRG-Mapping-Table.xlsx)
bh_drg_group.csv	1.7K	Export of [bh_drg_group] (derived from [bh_drg])
bh_length_of_stay.csv	118	Export of [bh_length_of_stay]
bh_mdc.csv	22	Export of [bh_mdc] (=Major Diagnostic Categories; derived from bh_drg)
bh_schema.csv	6.9K	Export of BendigoHealth database schema
bh_separation_method.csv	669	Export of [bh_separation_method]
bh_sex.csv	63	Export of bh_sex
bh_source_of_admission.csv	607	Export of [bh_source_of_admission]

Table 4.2: Files in exportTables.zip

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## CHAPTER 5. LOOK-UP TABLES

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Following is a listing of the contents of all look-up tables present in the BendigoHealth database collection.

Please refer to these tables in the construction of queries for filtering/selecting records. In brief:

- Table 5.2 details **Admission\_\_Types** referenced (by key) in **Patient\_\_Episode** (bh\_admission\_type)
- Table 5.3 details **Care\_\_Types** referenced (by key) in **Patient\_\_Episode** (bh\_care\_type)
- Table 3.2 details **Diagnosis\_\_Groups** referenced (by key) in **Patient\_\_Episode** (bh\_drg\_group)
- Table 5.4 details **Length Of Stays** referenced (by key) in **Patient\_\_Episode** (bh\_length\_of\_stay)
- Table 5.5 details **Separation\_\_Methods** referenced (by key) in **Patient\_\_Episode** (bh\_separation\_method)
- Table 5.6 details **Source\_\_Of\_\_Admissions** referenced (by key) in **Patient\_\_Episode** (bh\_source\_of\_admission)
- Table 5.7 details **Sex** referenced (by key) in **Patient\_\_Episode** (bh\_sex)

Table 5.1 describes the linking relationships between the main BendigoHealth table and look-up tables.

Table ...	Column	→	Lookup-Table ...	-Col
bh_patient_episode	AdmissionType_id	→	bh_admission_type	id
bh_patient_episode	SourceOfAdmission_id	→	bh_admission_type	id
bh_patient_episode	LengthOfStay_id	→	bh_admission_type	id
bh_patient_episode	CareType_id	→	bh_admission_type	id
bh_patient_episode	SeparationMethod_id	→	bh_admission_type	id
bh_patient_episode	DRGGroup_id	→	bh_drg_group	id
bh_patient_episode	Sex_id	→	bh_Sex	id

Table 5.1: Linking relationships between key tables

Table 5.2: [bh\_admission\_type]

<b>id</b>	<b>AdmissionTypeCode</b>	<b>AdmissionType</b>
1	11	Admission from waiting list
2	C	Admission from ED
3	M	Maternity
4	O	Other Emergency Admission
5	P	Planned Admission
6	S	Statistical Admission
7	X	Other Planned Admission
8	Y	Birth episode

Table 5.3: [bh\_care\_type]

<b>id</b>	<b>CareType</b>	<b>CareTypeDescription</b>
1	0	Alcohol and Drug Program
2	1	NHT/Non-Acute
3	2	Designated Rehabilitation Program/Unit: Level 1
4	4	Other care (Acute) including Qualified newborn
5	5A	Approved Mental Health Service or Psycho geriatric Program – Acute, Adult Mental Health Service
6	5E	Approved Mental Health Service or Psycho geriatric Program: – Mental Health Secure Extended Care Unit (SECU)
7	5G	Approved Mental Health Service or Psycho geriatric Program – Acute, Aged Persons Mental Health Service (APMH)
8	6	Designated Rehabilitation Program/Unit: Level 2
9	8	Palliative Care Program
10	9	Geriatric Evaluation and Management Program
11	NSP	Unknown
12	R2	Restorative Care, Offsite
13	U	Unqualified newborn

Table 5.4: [bh\_length\_of\_stay]

<b>id</b>	<b>LengthOfStayCode</b>	<b>LengthOfStayDescription</b>
1	M	Multi day stay
2	O	Overnight
3	S	Same Day

Table 5.5: [bh\_separation\_method]

<b>id</b>	<b>SeparationMethod</b>	<b>SeparationMethodDescription</b>
1	4	Unknown
2	A	Separation and transfer to mental health residential facility
3	B	Separation and transfer to Transition Care bed based program

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Table 5.5 – *Continued from previous page*

<b>id</b>	<b>SeparationMethod</b>	<b>SeparationMethodDescription</b>
4	CA	Unknown
5	CB	Unknown
6	CH	Unknown
7	CN	Unknown
8	CT	Unknown
9	H	Separation to private residence/accommodation
10	N	Separation and transfer to aged care residential facility
11	S	Statistical Separation (change in Care Type within this hospital)
12	T	Separation and transfer to other acute hospital/extended care/rehabilitation/geriatric centre
13	Z	Left against medical advice

Table 5.6: [bh\_source\_of\_admission]

<b>id</b>	<b>SourceOfAdmissionCode</b>	<b>SourceOfAdmission</b>
1	A	Transfer from Mental Health Residential
2	B	Transfer from Transition Care bed based program
3	CB	Contract - Transfer from Transition Care bed based
4	CH	Contract - Home/Priv Resid/Accomm
5	CN	Contract - Transfer from Aged Care Residential
6	CT	Contract - Transfer from Acute Hosp/Ext Care/Rehab
7	H	Home/Private Residence/Accommodation
8	N	Transfer from Aged Care Residential
9	S	Statistical Admission
10	T	Transfer from Acute Hosp/Ext Care/Rehab/Geriatric
11	Y	Birth episode

Table 5.7: [bh\_sex]

<b>id</b>	<b>Sex_Desc</b>
1	Male
2	Female
9	Not Recorded

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## CHAPTER 6. TABLE DEFINITIONS

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Table 6.1 details table column definitions for all columns in all tables in the BendigoHealth database collection, along with descriptive information about the meaning of each column. Please refer to Chapter 4 for information about aggregations applied to data (to meet ethics requirements)

Table 6.1: [bh\_schemaBH]

Tbl	Col	Null?	ColType	ColKey	Comment
bh_abs	id	NO	int(11)	PRI	
bh_abs	SLA_5_Digit_Code	NO	int(11)	MUL	
bh_abs	SLA_Code	NO	int(11)	MUL	
bh_abs	SLA_Name	YES	varchar(100)		
bh_abs	ML_Code	NO	varchar(20)		
bh_abs	ML_Name	NO	varchar(100)		
bh_abs	SD_Code_2011	YES	int(11)		
bh_abs	SD_Name_2011	YES	varchar(50)		
bh_abs	SSD_Code_2011	YES	int(11)		
bh_abs	SSD_Name_2011	YES	varchar(50)		
bh_abs	Sdist_Code_2011	YES	int(11)		
bh_abs	Sdist_Name_2011	YES	varchar(100)		
bh_abs	MSR_Code_2011	YES	int(11)		
bh_abs	MSR_Name_2011	YES	varchar(100)		
bh_abs	SR_Code_2011	YES	int(11)		
bh_abs	SR_Name_2011	YES	varchar(50)		
bh_abs	SRS_Code_2011	YES	int(11)		
bh_abs	SRS_Name_2011	YES	varchar(50)		
bh_abs	SLA_Region_Code_2011	YES	int(11)		
bh_abs	State_Code	YES	int(11)		
bh_abs	State	NO	varchar(50)		
bh_abs	Postcode	YES	int(11)		
bh_abs	Pct_Postcode_in_LGA	YES	decimal(8,3)		
bh_abs	Latitude	YES	decimal(10,7)		
bh_abs	Longitude	YES	decimal(10,7)		
bh_abs	Electoral_Divisions	YES	varchar(50)		Electoral divisions in this SLA
bh_abs	Postcode_Main	YES	int(11)		Main Postcode in this SLA
bh_abs	Postcodes_All	NO	varchar(250)		All postcodes in this SLA
bh_abs	Area	YES	decimal(14,8)		Area in SqKms
bh_abs	Population_Usual_Resident_Population_2009	YES	int(11)		
bh_abs	Population_Usual_Resident_Population_2011	YES	int(11)		
bh_abs	IRSAD_Score_by_SLA	YES	decimal(14,9)		
bh_abs	IRSAD_Decile_by_SLA	YES	int(11)		
bh_abs	IRSAD_Score_by_SLA	YES	decimal(14,9)		

Continued on next page



Table 6.1 – Continued from previous page

Tbl	Col	Null?	ColType	ColKey	Comment
bh_abs	IRSD_Decile_by_SLA	YES	int(11)		
bh_abs	IER_Score_by_SLA	YES	decimal(14,9)		
bh_abs	IER_Decile_by_SLA	YES	int(11)		
bh_abs	IEO_Score_by_SLA	YES	decimal(14,9)		
bh_abs	IEO_Decile_by_SLA	YES	int(11)		
bh_abs_tex	id	NO	int(11)	PRI	
bh_abs_tex	SLACode	NO	int(11)		
bh_abs_tex	SLAName	YES	varchar(100)		
bh_abs_tex	MLCode	NO	varchar(20)		
bh_abs_tex	MLName	NO	varchar(100)		
bh_abs_tex	PCode	YES	int(11)		
bh_abs_tex	PCodesAll	NO	varchar(250)		=Postcode_Main
bh_abs_tex	Area	YES	decimal(14,8)		=Postcodes_All
bh_admission_type	id	NO	int(11)	PRI	
bh_admission_type	AdmissionTypeCode	NO	varchar(10)	MUL	
bh_admission_type	AdmissionType	NO	varchar(100)	MUL	
bh_care_type	id	NO	int(11)	PRI	
bh_care_type	CareType	NO	varchar(10)	MUL	
bh_care_type	CareTypeDescription	YES	varchar(300)	MUL	
bh_cnt_by_admission_type	id	NO	int(11)	PRI	
bh_cnt_by_admission_type	AdmissionType	NO	varchar(100)		
bh_cnt_by_admission_type	cntTot	NO	int(11)		
bh_cnt_by_care_type	id	NO	int(11)	PRI	
bh_cnt_by_care_type	CareType	NO	varchar(100)		
bh_cnt_by_care_type	CareTypeDescription	NO	varchar(200)		
bh_cnt_by_care_type	cntTot	NO	int(11)		
bh_cnt_by_drg_group	id	NO	int(11)	PRI	
bh_cnt_by_drg_group	DRGGroup	NO	varchar(100)		
bh_cnt_by_drg_group	cntTot	NO	int(11)		
bh_cnt_by_length_of_stay	id	NO	int(11)	PRI	
bh_cnt_by_length_of_stay	LengthOfStay	NO	varchar(100)		
bh_cnt_by_length_of_stay	LengthOfStayDescription	NO	varchar(200)		
bh_cnt_by_length_of_stay	cntTot	NO	int(11)		
bh_cnt_by_separation_method	id	NO	int(11)	PRI	
bh_cnt_by_separation_method	SeparationMethod	NO	varchar(100)		
bh_cnt_by_separation_method	SeparationMethodDescription	NO	varchar(100)		

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Table 6.1 – Continued from previous page

Tbl	Col	Null?	ColType	ColKey	Comment
bh_cnt_by_separation_method	cntTot	NO	int(11)		
bh_cnt_by_sex	id	NO	int(11)	PRI	
bh_cnt_by_sex	Sex	NO	varchar(100)		
bh_cnt_by_sex	cntTot	NO	int(11)		
bh_cnt_by_source_of_admission	id	NO	int(11)	PRI	
bh_cnt_by_source_of_admission	SourceOfAdmission	NO	varchar(100)		
bh_cnt_by_source_of_admission	cntTot	NO	int(11)		
bh_drg	id	NO	int(11)	PRI	
bh_drg	DRGCode	NO	varchar(10)		
bh_drg	Partition	NO	varchar(80)		
bh_drg	MDCDescriptionLongFull	NO	varchar(100)		
bh_drg	MDC_id	YES	int(11)	MUL	
bh_drg	DRGGroup_id	YES	int(11)	MUL	
bh_drg	Version	NO	int(11)		
bh_drg_group	id	NO	int(11)	PRI	
bh_drg_group	MDCCategory	NO	varchar(10)		
bh_drg_group	DRGGroup	NO	varchar(100)	MUL	
bh_example_query	id	NO	int(11)	PRI	
bh_example_query	bh_drg_group	NO	varchar(100)		
bh_example_query	cntTot	NO	int(11)		
bh_length_of_stay	id	NO	int(11)	PRI	
bh_length_of_stay	LengthOfStayCode	NO	varchar(10)	MUL	
bh_length_of_stay	LengthOfStayDescription	YES	varchar(100)		
bh_mdc	id	NO	int(11)	PRI	
bh_mdc	MDCDescriptionLongWithoutQualifiers	NO	varchar(200)		
bh_patient_episode	id	NO	int(11)	PRI	
bh_patient_episode	AdmissionType_id	YES	int(11)	MUL	
bh_patient_episode	SourceOfAdmission_id	YES	int(11)	MUL	
bh_patient_episode	AdmissionYear	NO	int(11)		Indicates where the patient came from
bh_patient_episode	SeparationYear	NO	int(11)		Year of admission (rounded down to nearest 5-year)
bh_patient_episode	BirthYear	NO	int(11)		Year of separation (rounded down to nearest 5-year)
bh_patient_episode	Sex_id	YES	int(11)		Year of birth (rounded down to nearest 5-year)
bh_patient_episode	LengthOfStay_id	YES	int(11)	MUL	
bh_patient_episode	MechanicalVentilationHours	YES	int(11)	MUL	
bh_patient_episode	AcuteLOS	YES	int(11)		Numeric data in hours 0-9999

Please note that LOS is using Admission Date/Time and Separation Date/Time, and excludes HITH days

Continued on next page



Table 6.1 – Continued from previous page

Tbl	Col	Null?	ColType	ColKey	Comment
bh_patient_episode	ICUHours	YES	int(11)		Hours in ICU, rounded to nearest hour
bh_patient_episode	HITH	YES	int(11)		Numeric days. Number of whole days patient was in Hospital in the Home_ in this episode
bh_patient_episode	LeaveDays	YES	int(11)		Numeric days. Number of days patients were on leave during the inpatient episode
bh_patient_episode	PsychiatricCareDays	YES	int(11)		Numeric Days. The number of days in psychiatric care
bh_patient_episode	CareType_id	YES	int(11)	MUL	Indicates whether a patient is under acute or non-acute care (eg. Acute, rehab, palliative, etc.)
bh_patient_episode	SeparationMethod_id	YES	int(11)	MUL	Method of separation
bh_patient_episode	DRG_id	YES	int(11)	MUL	Australian refined Diagnosis-related group (www.aihw.gov.au/hospitals-data/ar-drg-data-cubes)
bh_patient_episode	DRGGroup_id	YES	int(11)	MUL	
bh_patient_episode	ABS_id	YES	int(11)	MUL	
bh_separation_method	id	NO	int(11)	PRI	
bh_separation_method	SeparationMethod	NO	varchar(100)	MUL	
bh_separation_method	SeparationMethodDescription	YES	varchar(100)		
bh_source_of_admission	id	NO	int(11)	PRI	
bh_source_of_admission	SourceOfAdmissionCode	NO	varchar(100)	MUL	
bh_source_of_admission	SourceOfAdmission	NO	varchar(100)	MUL	

---

## CHAPTER 7. SUMMARY TABLES

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Tables 7.1 – 7.7 list patient-episode record counts grouped as follows:

- Table 7.1 : patient-episode record-counts grouped by **Admission\_Type**
- Table 7.2 : patient-episode record-counts grouped by **Care\_Type**
- Table 7.3 : patient-episode record-counts grouped by **Diagnosis\_Group**
- Table 7.4 : patient-episode record-counts grouped by **Length Of Stay**
- Table 7.5 : patient-episode record-counts grouped by **Separation\_Method**
- Table 7.6 : patient-episode record-counts grouped by **Sex**
- Table 7.7 : patient-episode record-counts grouped by **Source\_Of\_Admission**

Table 7.1: [bh\_cnt\_by\_admission\_type]

id	AdmissionType	cntTot
1	Admission from waiting list	5222
2	Admission from ED	22778
3	Maternity	167
4	Other Emergency Admission	508
5	Planned Admission	832
6	Statistical Admission	1123
7	Other Planned Admission	9607

Table 7.2: [bh\_cnt\_by\_care\_type]

id	CareType	CareTypeDescription	cntTot
3	2	Designated Rehabilitation Program/Unit: Level 1	206
4	4	Other care (Acute) including Qualified newborn	35443
5	5A	Approved Mental Health Service or Psycho geriatric Program – Acute, Adult Mental Health Service	49
8	6	Designated Rehabilitation Program/Unit: Level 2	2147
9	8	Palliative Care Program	440
10	9	Geriatric Evaluation and Management Program	1952

Table 7.3: [bh\_cnt\_by\_drg\_group]

id	DRGGroup	cntTot
1	Unrelated OR DRGs	71
2	Error DRGs	60
3	Major procedures where the principal diagnosis may be associated with any MDC	288
4	Diseases and disorders of the nervous system	3124
5	Diseases and disorders of the eye	118

*Continued on next page*

Table 7.3 – *Continued from previous page*

<b>id</b>	<b>DRGGroup</b>	<b>cntTot</b>
6	Diseases and disorders of the ear, nose, mouth and throat	373
7	Diseases and disorders of the respiratory system	3470
8	Diseases and disorders of the circulatory system	15937
9	Diseases and disorders of the digestive system	4404
10	Diseases and disorders of the hepatobiliary system and pancreas	1183
11	Diseases and disorders of the musculoskeletal system and connective tissue	2325
12	Diseases and disorders of the skin, subcutaneous tissue and breast	708
13	Endocrine, nutritional and metabolic diseases and disorders	720
14	Diseases and disorders of the kidney and urinary tract	1584
15	Diseases and disorders of the male reproductive system	246
16	Diseases and disorders of the female reproductive system	264
17	Pregnancy, childbirth and the puerperium	229
19	Diseases and disorders of the blood and blood forming organs and immunological disorders	539
20	Neoplastic disorders (haematological and solid neoplasms)	546
22	42	973
23	Mental diseases and disorders	121
28	Factors influencing health status and other contacts with health services	2946

Table 7.4: [bh\_cnt\_by\_length\_of\_stay]

<b>id</b>	<b>LengthOfStay</b>	<b>LengthOfStayDescription</b>	<b>cntTot</b>
1	M	Multi day stay	24984
2	O	Overnight	5282
3	S	Same Day	9971

Table 7.5: [bh\_cnt\_by\_separation\_method]

<b>id</b>	<b>SeparationMethod</b>	<b>SeparationMethodDescription</b>	<b>cntTot</b>
1	4	Unknown	1473
3	B	Separation and transfer to Transition Care bed based program	187
6	CH	Unknown	124
9	H	Separation to private residence/accommodation	27537
10	N	Separation and transfer to aged care residential facility	777
11	S	Statistical Separation (change in Care Type within this hospital)	1336
12	T	Separation and transfer to other acute hospital/extended care/rehabilitation/geriatric centre	8596
13	Z	Left against medical advice	207

Table 7.6: [bh\_cnt\_by\_sex]

<b>id</b>	<b>Sex</b>	<b>cntTot</b>
1	Male	22494
2	Female	17743

Table 7.7: [bh\_cnt\_by\_source\_of\_admission]

<b>id</b>	<b>SourceOfAdmission</b>	<b>cntTot</b>
4	Contract - Home/Priv Resid/Accomm	107
7	Home/Private Residence/Accommodation	33941
8	Transfer from Aged Care Residential	388
9	Statistical Admission	1123
10	Transfer from Acute Hosp/Ext Care/Rehab/Geriatric	4678

---

## CHAPTER 8. QUERYING THE DATA

---

Following is an example of running a query against the data. ...

```
SELECT
  DRGGroup,
  count(*) AS cntTot
FROM
  bh_patient_episode, bh_drg_group
WHERE
  bh_patient_episode.DRGGroup_id = bh_drg_group.id
GROUP BY
  DRGGroup
ORDER BY
  DRGGroup
```

This will return the number of records in each DRG–category. Results are presented in Table 8.1:

Table 8.1: [bh\_example\_query]

id	bh_drg_group	cntTot
1	42	978
2	Alcohol/drug use and alcohol/drug induced organic mental disorders	23
3	Burns	7
4	Diseases and disorders of the blood and blood forming organs and immunological disorders	539
5	Diseases and disorders of the circulatory system	15966
6	Diseases and disorders of the digestive system	4406
7	Diseases and disorders of the ear, nose, mouth and throat	373
8	Diseases and disorders of the eye	118
9	Diseases and disorders of the female reproductive system	265
10	Diseases and disorders of the hepatobiliary system and pancreas	1183
11	Diseases and disorders of the kidney and urinary tract	1588
12	Diseases and disorders of the male reproductive system	247
13	Diseases and disorders of the musculoskeletal system and connective tissue	2331
14	Diseases and disorders of the nervous system	3137
15	Diseases and disorders of the respiratory system	3478
16	Diseases and disorders of the skin, subcutaneous tissue and breast	714
17	Endocrine, nutritional and metabolic diseases and disorders	725
18	Error DRGs	60
19	Factors influencing health status and other contacts with health services	2991
20	Infectious and parasitic diseases	3
21	Injuries, poisoning and toxic effects of drugs	30
22	Major procedures where the principal diagnosis may be associated with any MDC	290
23	Mental diseases and disorders	148
24	Neoplastic disorders (haematological and solid neoplasms)	546
25	Newborns and other neonates	16
26	Pregnancy, childbirth and the puerperium	229
27	Unrelated OR DRGs	71

---

## APPENDIX A. PROCESSING OF RAW DATA

---

There were 48,215 records in the raw data received from BendigoHealth (BH20052014.xlsx). These records were processed for purposes of de-identification/anonymisation (§1) and data-cleansing (§2) as detailed below (018\_BH.py).

### §1 Processing for De-identification/anonymisation

Of the 48,215 raw-data records, 7,978 records were excluded or removed for purposes of de-identification / anonymisation leaving 40,237 records for publication. A summary of the progressive count of records left at each step of exclusions/deletions is listed in Table A.1. Details of the steps taken are given in §1.1. After the exclusion/removal of records (filtering), the **AR-DRG**-classification of the remaining 40,237 records was aggregated to the level of **Major Diagnostic Category (MDC)** and all dates were rounded-down to the nearest 5-year value. Details are given in Section §1.1 (See Appendix C for **AR-DRG** classification details.)

Look-up table	Category	No. deleted	No. left
Raw Count	-	0	48,215
Sex	Not M or F	4	48,211
Year of Birth	Not between 1925 - 2005	7740	40,470
DRG-Group	-	79	40,391
AdmissionType	-	83	40,308
SeparationMethod	-	48	40,260
SourceOfAdmission	-	23	40,237

Table A.1: Deleted records by category of deletion

## §1.1 Details of steps taken to anonymise data

### Filtering

- **Exclusions** The following exclusions were performed on the data:
  - **Sex** checked to confirm patient categorised as either **Female** or **Male**; if not confirmed, record excluded. (4 rows excluded.)
  - **BirthYear** checked to confirm the patient born between 1925 – 2005 inclusive (that is, that s/he was between 15 and 90 years old); if not confirmed, record excluded. (7,744 rows excluded; 40,470 records left.)
- **Removals** A calculation was made of counts of **patient-episode** records by each category of each look-up table – **Diagnosis\_Group**, **Admission\_Type**, **Care\_Type**, **Length Of Stay**, **Separation\_Method** and **Source\_Of\_Admission**. **Patient\_Episode** records were deleted where represented in any category having less than 50 records in total (025\_DropRecordsWithLowCounts.py). Tables A.2 – A.6 list these categories and their low-count (< 50) aggregates.

Table A.2 : low-count patient-episode record-counts grouped by **Admission\_Type**

Table A.3 : low-count patient-episode record-counts grouped by **Care\_Type**

Table A.4 : low-count patient-episode record-counts grouped by **Diagnosis\_Group**

Table A.5 : low-count patient-episode record-counts grouped by **Separation\_Method**

Table A.6 : low-count patient-episode record-counts grouped by **Source\_Of\_Admission**

Table A.2: [bh\_cnt\_by\_admission\_typeLowCount]

id	AdmissionType	cntTot
8	Birth episode	10

Table A.3: [bh\_cnt\_by\_care\_typeLowCount]

id	CareType	CareTypeDescription	cntTot
1	0	Alcohol and Drug Program	2
2	1	NHT/Non-Acute	36
6	5E	Approved Mental Health Service or Psycho geriatric Program: – Mental Health Secure Extended Care Unit (SECU)	1
7	5G	Approved Mental Health Service or Psycho geriatric Program – Acute, Aged Persons Mental Health Service (APMH)	28
11	NSP	Unknown	2
12	R2	Restorative Care, Offsite	15
13	U	Unqualified newborn	2



Table A.4: [bh\_cnt\_by\_drg\_groupLowCount]

id	DRGGroup	cntTot
18	Newborns and other neonates	16
21	Infectious and parasitic diseases	3
24	Alcohol/drug use and alcohol/drug induced organic mental disorders	23
25	Injuries, poisoning and toxic effects of drugs	30
27	Burns	7

Table A.5: [bh\_cnt\_by\_separation\_methodLowCount]

id	SeparationMethod	SeparationMethodDescription	cntTot
2	A	Separation and transfer to mental health residential facility	25
4	CA	Unknown	1
5	CB	Unknown	1
7	CN	Unknown	7
8	CT	Unknown	14

Table A.6: [bh\_cnt\_by\_source\_of\_admissionLowCount]

id	SourceOfAdmission	cntTot
1	Transfer from Mental Health Residential	13
2	Transfer from Transition Care bed based program	12
3	Contract - Transfer from Transition Care bed based	1
5	Contract - Transfer from Aged Care Residential	1
6	Contract - Transfer from Acute Hosp/Ext Care/Rehab	3
11	Birth episode	10

## Aggregation

The following aggregations were performed:

- All dates (= **AdmissionDate**, **BirthYear** and **SeparationDate**) rounded down to the nearest 5-year value using the formula:

$$X = X - (X \bmod 5) \quad (\text{A.1})$$

(where X = (Year of) {**AdmissionDate** | **BirthYear** | **SeparationDate**})

- All **AR-DRG** classification codes replaced by **Major Diagnostic Category (MDC)**. See Appendix C for **AR-DRG** classification details.

## §2 Data-cleansing processing

The following data-cleansing processes were performed:

- **Statistical Local Area (SLA)** set to 99999 if not known

- All integer fields (**MechanicalVentilationHours**, **AcuteLOS**, **ICUHours**, **HITH**, **LeaveDays**, **PsychiatricCareDays**) set to NULL if missing; '0' if 'empty'.

## §1 Source of ABS socio-economic data

The **Australian Bureau of Statistics (ABS)** provides a wide range of statistics for various standard geographical areas. Of these, the Socio-Economic Indexes for Areas (SEIFA 2011) were obtained free of charge from the ABS website's download page for 2033.0.55.001 – Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2011:

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/2033.0.55.0012011?OpenDocument>

SEIFA 2011 consists of four key socio-economic indices:

- Index of Relative Socio-economic Disadvantage (IRSD)
- Index of Relative Socio-economic Advantage and Disadvantage (IRSAD)
- Index of Education and Occupation (IEO)
- Index of Economic Resources (IER)

These indices are explained in depth in the Socio-Economic Indexes for Areas (SEIFA) 2011 Technical Paper, also available via the above link.

## §2 ABS SEIFA Data Acquisition and Preparation

Key ABS socio-economic indicators were located via a search of the ABS website and were downloaded from this page:

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/2033.0.55.0012011?OpenDocument>

File downloaded:

Statistical Local Area, Indexes, SEIFA 2011 - 2033.0.55.001 sla indexes.xls

SEIFA data used was located in the Table 1 worksheet, which included both the scores and deciles across each of the 4 key socio-economic indices listed above (IRSD, IRSAD, IEO and IER) for each Statistical Local Area.

The SEIFA scores and deciles were added to the MODS data set, based on the SLA column which was used as the data source for a VLOOKUP formula that was used to extract the SEIFA data from the Table 1 worksheet for each SLA represented in the MODS data set.

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## APPENDIX C. NOTES CONCERNING **Australian Refined Diagnosis Related Groups (AR-DRG)**S

---

### §1 Definition

The Australian Institute of Health and Welfare define **Australian Refined Diagnosis Related Groups (AR-DRG)** as “*an Australian admitted patient classification system which provides a clinically meaningful way of relating the number and type of patients treated in a hospital . . . to the resources required by the hospital.*”

### §2 Sources of information

Two main sources of information were used:

1. Australian Institute of Health and Welfare:  
<http://www.aihw.gov.au/hospitals-data/ar-drg-data-cubes/>
2. New Zealand Ministry of Health:  
<http://www.health.govt.nz/nz-health-statistics/data-references/diagnosis-related-groups/australian-refined-diagnosis-related-groups-v60x-ar-drg-v60x>

### §3 Partitioning of the Code

The **AR-DRG** consists of a 4-character code of the form “**ADD**S”, partitioned as follows:

- A** A single letter representing the **Major Diagnostic Category (MDC)** to which the DRG belongs.
- DD** A two digit code representing the “partition” to which the DRG belongs, falling into one of three ranges:

Range	=	Partition
01 – 39	=	Surgical
40 – 59	=	Other
60 – 99	=	Medical

**S** A single letter indicating the consumption level demanded by the DRG:

---

Letter	=	Consumption Level
A	=	highest consumption of resources
B	=	second highest consumption of resources
C	=	third highest consumption of resources
D	=	fourth highest consumption of resources
Z	=	no split for the adjacent DRG

---

Only the first part (**MDC**) from the original **AR-DRG** codes was used in the final data set to ensure the data was sufficiently de-identified. (Note that in the database **MDC** is represented by `MDCCategory` and is described by `DRGGroup`. See Table 3.2 for details.)

## §4 Code Versions

The codes have been published in various versions from 1998 (version 1) until the present (version 7). With each version, new codes have been introduced while some older codes have been removed. Because the date range of the original Bendigo Health data set started from 2004, some of the **AR-DRG**s included no longer existed and definitions for these codes had to be extracted from older versions of the **AR-DRG**, obtained from the New Zealand Ministry of Health site.

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## APPENDIX D. ABS DATA

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Table D.1 lists contents of all 338 (**ABS**) Locations (=SLAs) linked to by **Patient\_Episode**.

Table D.1: [bh\_abs\_tex]

id	SLA Code	SLA Name	ML Code	ML Name	P Code	P Codes All	Area
1	99999		999999	ML_Name_Unknown		Unknown	
2	11550	Canterbury (C)	ML102	Inner West Sydney	2191	2133, 2191, 2192, 2193, 2194, 2195, 2196, 2204, 2206, 2208, 2209, 2210	33.56387500
3	16650	Rockdale (C)	ML103	South Eastern Sydney	2205	2205, 2207, 2208, 2216, 2217, 2218, 2219	28.21929000
4	17151	Sutherland Shire (A) - East	ML103	South Eastern Sydney	2224	2224, 2227, 2228, 2229, 2230, 2231, 2232, 2233	147.39278700
5	17152	Sutherland Shire (A) - West	ML103	South Eastern Sydney	2225	2172, 2224, 2225, 2226, 2227, 2232, 2233, 2234	186.18610700
6	18350	Wingecarribee (A)	ML104	South Western Sydney	2575	2571, 2575, 2576, 2577, 2578, 2579, 2580	2688.39008100
7	10752	Blacktown (C) - South-East	ML105	Western Sydney	2147	2146, 2147, 2148, 2766, 2767	59.19811500
8	10753	Blacktown (C) - South-West	ML105	Western Sydney	2761	2760, 2761, 2766, 2770	65.70733900
9	13800	Hawkesbury (C)	ML106	Nepean - Blue Mountains	2753	2753, 2754, 2755, 2756, 2757, 2758, 2765, 2775	2774.64121300
10	14700	Lane Cove (A)	ML108	Sydney North Shore and Beaches	2066	2065, 2066	10.47954900
11	16370	Pittwater (A)	ML108	Sydney North Shore and Beaches	2101	2084, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108	90.32835900
12	16952	Shoalhaven (C) - Pt B	ML110	Illawarra - Shoalhaven	2535	2535, 2536, 2538, 2539, 2540, 2577, 2622	4320.22725200
13	15050	Maitland (C)	ML111	Hunter	2320	2320, 2321, 2322, 2323, 2324, 2326, 2334, 2335, 2421	391.51716700
14	16400	Port Stephens (A)	ML111	Hunter	2314	2295, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2324	858.47328600
15	10600	Bellingen (A)	ML113	North Coast NSW	2453	2441, 2448, 2449, 2453, 2454, 2455	1600.37292400
16	14350	Kempsey (A)	ML113	North Coast NSW	2431	2431, 2440, 2441	3375.66962700
17	14851	Lismore (C) - Pt A	ML113	North Coast NSW	2480	2477, 2480	166.02450900
18	17400	Tenterfield (A)	ML113	North Coast NSW	2372	2371, 2372, 2469, 2475, 2476, 4383	736.54786200
19	14201	Inverell (A) - Pt A	ML114	New England	2361	2360, 2361, 2369, 2370, 2371, 2402, 2403, 2409, 2410, 4385	6869.11994000
20	12601	Dubbo (C) - Pt A	ML115	Western NSW	2830	2830.0	329.86069600
21	16150	Orange (C)	ML115	Western NSW	2800	2798, 2800	283.93707000
22	18100	Weddin (A)	ML115	Western NSW	2721	2594, 2721, 2794, 2809, 2810, 2871	3408.54611500
23	11600	Carrathool (A)	ML116	Murrumbidgee	2675	2652, 2665, 2669, 2675, 2680, 2681, 2711, 2878	18932.49799000
24	13850	Hay (A)	ML116	Murrumbidgee	2711	2710, 2711	11326.01913000
25	14250	Jerilderie (A)	ML116	Murrumbidgee	2716	2646, 2700, 2707, 2710, 2712, 2713, 2716	428.30689800
26	15800	Narrandera (A)	ML116	Murrumbidgee	2665	2650, 2652, 2665, 2700, 2705	4116.23514800
27	17751	Wagga Wagga (C) - Pt A	ML116	Murrumbidgee	2650	2650, 2651, 2652, 2661, 2678	220.07219900

Continued on next page



Table D.1 – Continued from previous page

id	SLA Code	SLA Name	MLC Code	ML Name	P Code	PCodesAll	Area
28	17754	Wagga Wagga (C) - Pt B	ML116	Murrumbidgee	2652	2644, 2650, 2651, 2652, 2655, 2656, 2661, 2702	4605.80139500
29	18750	Young (A)	ML116	Murrumbidgee	2594	2586, 2594, 2666, 2803, 2807	2692.68067600
30	10550	Bega Valley (A)	ML117	Southern NSW	2548	2546, 2548, 2549, 2550, 2551, 2632	6279.00720800
31	12750	Eurobodalla (A)	ML117	Southern NSW	2536	2536, 2537, 2545, 2546, 2622	3428.16547800
32	11250	Broken Hill (C)	ML118	Far West NSW	2880	2880.0	170.29426300
33	11700	Central Darling (A)	ML118	Far West NSW	2836	2836, 2840, 2878, 2879	53493.89077000
34	11750	Cobar (A)	ML118	Far West NSW	2835	2672, 2831, 2835, 2840, 2877	45570.94943000
35	24601	Melbourne (C) - Inner	ML201	Inner North West Melbourne	3000	3000.0	1.91983800
36	24605	Melbourne (C) - S'bank-D'lands	ML201	Inner North West Melbourne	3005	3005, 3006, 3008, 3207	4.72187600
37	24608	Melbourne (C) - Remainder	ML201	Inner North West Melbourne	3002	3000, 3002, 3003, 3004, 3010, 3031, 3050, 3051, 3052, 3053, 3054, 3141, 3207	29.21167400
38	25063	Moonee Valley (C) - Essendon	ML201	Inner North West Melbourne	3032	3031, 3032, 3039, 3040, 3041	20.45590000
39	25065	Moonee Valley (C) - West	ML201	Inner North West Melbourne	3033	3033, 3034, 3040, 3041, 3042	22.68617300
40	25252	Moreland (C) - Coburg	ML201	Inner North West Melbourne	3044	3044, 3058	18.24797300
41	25253	Moreland (C) - North	ML201	Inner North West Melbourne	3046	3043, 3044, 3046, 3060	22.05406300
42	27352	Yarra (C) - Richmond	ML201	Inner North West Melbourne	3121	3121.0	6.21235000
43	20911	Bayside (C) - Brighton	ML202	Bayside	3186	3186, 3187	13.80834700
44	22311	Glen Eira (C) - Caulfield	ML202	Bayside	3161	3145, 3161, 3162, 3163, 3183, 3185, 3204	22.20742400
45	22314	Glen Eira (C) - South	ML202	Bayside	3165	3165, 3187, 3204	16.48399800
46	23431	Kingston (C) - North	ML202	Bayside	3169	3167, 3169, 3172, 3189, 3190, 3192, 3194, 3195, 3202	68.59049100
47	23434	Kingston (C) - South	ML202	Bayside	3196	3175, 3195, 3196, 3197	22.77683000
48	25901	Port Phillip (C) - St Kilda	ML202	Bayside	3182	3004, 3181, 3182, 3183, 3184, 3185, 3206	8.75561300
49	25902	Port Phillip (C) - West	ML202	Bayside	3004	3004, 3006, 3205, 3206, 3207	11.94920100
50	26351	Stonnington (C) - Prahran	ML202	Bayside	3141	3141, 3142, 3143, 3181	9.57614500
51	26352	Stonnington (C) - Malvern	ML202	Bayside	3144	3142, 3143, 3144, 3145, 3146	16.07266700
52	23111	Hobsons Bay (C) - Altona	ML203	South Western Melbourne	3018	3012, 3015, 3018, 3025, 3026, 3028	48.04016500
53	23112	Hobsons Bay (C) - Williamstown	ML203	South Western Melbourne	3015	3015, 3016, 3025	16.20054900
54	27261	Wyndham (C) - North	ML203	South Western Melbourne	3026	3024, 3026, 3027, 3028, 3029, 3030	145.95492500
55	27264	Wyndham (C) - South	ML203	South Western Melbourne	3030	3030.0	140.15732300
56	27267	Wyndham (C) - West	ML203	South Western Melbourne	3024	3024, 3030, 3211, 3338	255.98178000
57	21181	Brimbank (C) - Keilor	ML204	Macedon Ranges and North Western Melbourne	3021	3021, 3033, 3036, 3037, 3038, 3042, 3043	58.83462700
58	21182	Brimbank (C) - Sunshine	ML204	Macedon Ranges and North Western Melbourne	3020	3012, 3020, 3021, 3022, 3023, 3030	64.56438700
59	23275	Hume (C) - Sunbury	ML204	Macedon Ranges and North Western Melbourne	3429	3063, 3427, 3428, 3429, 3430, 3431	237.65897800
60	24131	Macedon Ranges (S) - Kyneton	ML204	Macedon Ranges and North Western Melbourne	3444	3435, 3442, 3444, 3446, 3447, 3458, 3461	563.69172800

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Table D.1 – Continued from previous page

id	SLA Code	SLA Name	ML Code	ML Name	P Code	P Codes All	Area
61	24134	Macedon Ranges (S) - Romsey	ML204	Macedon Ranges and North Western Melbourne	3430	3430, 3431, 3432, 3433, 3434, 3435, 3438, 3441, 3442, 3756, 3762, 3764	628.14107700
62	24135	Macedon Ranges (S) Bal	ML204	Macedon Ranges and North Western Melbourne	3437	3337, 3429, 3431, 3435, 3437, 3438, 3440, 3441, 3442, 3444, 3458	556.44351900
63	24330	Maribyrnong (C)	ML204	Macedon Ranges and North Western Melbourne	3011	3011, 3012, 3013, 3019, 3032	31.22681600
64	24651	Melton (S) - East	ML204	Macedon Ranges and North Western Melbourne	3023	3023, 3029, 3037, 3335, 3427	91.90425000
65	24654	Melton (S) Bal	ML204	Macedon Ranges and North Western Melbourne	3335	3024, 3335, 3337, 3338, 3340, 3427	435.65316500
66	25151	Moorabool (S) - Bacchus Marsh	ML204	Macedon Ranges and North Western Melbourne	3340	3340, 3341	607.30833900
67	20661	Banyule (C) - Heidelberg	ML205	Northern Melbourne	3079	3079, 3081, 3084, 3085, 3087, 3088	32.64222200
68	20662	Banyule (C) - North	ML205	Northern Melbourne	3087	3083, 3085, 3087, 3088, 3093, 3094, 3095	29.89991600
69	21891	Darebin (C) - Northcote	ML205	Northern Melbourne	3070	3070, 3071, 3078	14.02730300
70	21892	Darebin (C) - Preston	ML205	Northern Melbourne	3072	3058, 3072, 3073, 3083, 3085, 3086	39.44378300
71	23271	Hume (C) - Broadmeadows	ML205	Northern Melbourne	3043	3043, 3047, 3048, 3049, 3060, 3061	44.37607500
72	23274	Hume (C) - Craigieburn	ML205	Northern Melbourne	3045	3036, 3045, 3048, 3049, 3059, 3062, 3063, 3064, 3428	221.79423300
73	25713	Nilumbik (S) - South	ML205	Northern Melbourne	3095	3095, 3096, 3097, 3113	65.83473100
74	25715	Nilumbik (S) - South-West	ML205	Northern Melbourne	3089	3088, 3089, 3090, 3091, 3095, 3096, 3099	52.90429600
75	25718	Nilumbik (S) Bal	ML205	Northern Melbourne	3099	3091, 3096, 3097, 3099, 3754, 3755, 3759, 3760, 3761, 3763, 3775	313.59812300
76	27071	Whittlesea (C) - North	ML205	Northern Melbourne	3750	3064, 3076, 3750, 3751, 3752, 3753, 3754, 3755, 3757	433.71144800
77	21112	Boroondara (C) - Camberwell S.	ML206	Inner East Melbourne	3124	3124, 3126, 3127, 3145, 3146, 3147	18.19406100
78	21113	Boroondara (C) - Hawthorn	ML206	Inner East Melbourne	3122	3122, 3123, 3124, 3142, 3146	9.88214200
79	21114	Boroondara (C) - Kew	ML206	Inner East Melbourne	3101	3101, 3102	14.51144500
80	24211	Manningham (C) - East	ML206	Inner East Melbourne	3113	3106, 3109, 3111, 3113, 3114, 3115, 3134	57.97635700
81	24214	Manningham (C) - West	ML206	Inner East Melbourne	3105	3105, 3106, 3107, 3108, 3109, 3111, 3131	55.37201300
82	24971	Monash (C) - South-West	ML206	Inner East Melbourne	3148	3148, 3166, 3167, 3168, 3800	21.45924400
83	24974	Monash (C) - Waverley East	ML206	Inner East Melbourne	3150	3150, 3170	27.92116400
84	24975	Monash (C) - Waverley West	ML206	Inner East Melbourne	3149	3125, 3147, 3148, 3149, 3150, 3168, 3170	32.11689000
85	26981	Whitehorse (C) - Box Hill	ML206	Inner East Melbourne	3125	3104, 3125, 3127, 3128, 3129	21.59232100
86	26984	Whitehorse (C) - Nunawading E.	ML206	Inner East Melbourne	3132	3131, 3132, 3133	21.42837400
87	26985	Whitehorse (C) - Nunawading W.	ML206	Inner East Melbourne	3130	3130, 3131, 3151	21.25820700
88	23674	Knox (C) - South	ML207	Eastern Melbourne	3178	3156, 3178, 3179, 3180	42.22713000
89	24411	Maroondah (C) - Croydon	ML207	Eastern Melbourne	3136	3115, 3134, 3135, 3136, 3137, 3153	37.91500200
90	24412	Maroondah (C) - Ringwood	ML207	Eastern Melbourne	3134	3114, 3133, 3134, 3135, 3136	23.49620700

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id	SLA Code	SLA Name	ML Code	ML Name	P Code	P Codes All	Area
91	27451	Yarra Ranges (S) - Central	ML207	Eastern Melbourne	3139	3139, 3777, 3797, 3799, 3833	421.72866400
92	27454	Yarra Ranges (S) - North	ML207	Eastern Melbourne	3775	3139, 3770, 3775, 3777	387.84447200
93	21452	Cardinia (S) - North	ML208	South Eastern Melbourne	3781	3139, 3159, 3781, 3782, 3783, 3807, 3808, 3810, 3812, 3813, 3814, 3815, 3816, 3981	714.96362500
94	21453	Cardinia (S) - Pakenham	ML208	South Eastern Melbourne	3807	3807, 3808, 3809, 3810, 3812, 3978	217.68626500
95	21612	Casey (C) - Berwick	ML208	South Eastern Melbourne	3804	3804, 3805, 3806, 3807, 3977	83.12612100
96	21613	Casey (C) - Cranbourne	ML208	South Eastern Melbourne	3975	3975, 3976, 3977, 3978	83.93080400
97	21616	Casey (C) - Hallam	ML208	South Eastern Melbourne	3177	3156, 3177, 3802, 3803, 3804, 3805	40.17183700
98	22671	Gr. Dandenong (C) - Dandenong	ML208	South Eastern Melbourne	3175	3173, 3174, 3175	38.87957800
99	22674	Gr. Dandenong (C) Bal	ML208	South Eastern Melbourne	3171	3171, 3172, 3173, 3174, 3175, 3975	90.71597300
100	22171	Frankston (C) - East	ML209	Frankston - Mornington Peninsula	3201	3201, 3910, 3911, 3977	64.60098400
101	22174	Frankston (C) - West	ML209	Frankston - Mornington Peninsula	3198	3197, 3198, 3199, 3200, 3201, 3910, 3911	64.99763000
102	25341	Mornington P'sula (S) - East	ML209	Frankston - Mornington Peninsula	3911	3911, 3912, 3913, 3915, 3916, 3918, 3919, 3920, 3926, 3927, 3933, 3937	293.83764100
103	25344	Mornington P'sula (S) - South	ML209	Frankston - Mornington Peninsula	3916	3916, 3926, 3928, 3929, 3934, 3936, 3937, 3938, 3939, 3940, 3941, 3942, 3943, 3944	328.26672800
104	25345	Mornington P'sula (S) - West	ML209	Frankston - Mornington Peninsula	3930	3915, 3930, 3931, 3933, 3934	101.96238100
105	21751	Colac-Otway (S) - Colac	ML210	Barwon	3250	3250.0	20.54845200
106	22492	Golden Plains (S) - South-East	ML210	Barwon	3321	3321, 3321, 3322, 3328, 3329, 3330, 3331, 3332, 3333, 3334, 3342, 3351, 3352	1666.00555400
107	22751	Bellarine - Inner	ML210	Barwon	3219	3219, 3221, 3222, 3224	68.04918900
108	22752	Corio - Inner	ML210	Barwon	3212	3212, 3214, 3215, 3218, 3221	164.40527800
109	22753	Geelong	ML210	Barwon	0	3219, 3220	13.02464100
110	22754	Geelong West	ML210	Barwon	3218	3215, 3218, 3220	6.22860100
111	22756	South Barwon - Inner	ML210	Barwon	3216	3216, 3217, 3221, 3227	129.96072200
112	22757	Greater Geelong (C) - Pt B	ML210	Barwon	3222	3221, 3222, 3223, 3224, 3225, 3226, 3227	307.14997200
113	22758	Greater Geelong (C) - Pt C	ML210	Barwon	0	3211, 3212, 3221, 3340	552.75648400
114	26080	Queenscliffe (B)	ML210	Barwon	3225	3225.0	8.61832800
115	26493	Surf Coast (S) - East	ML210	Barwon	3228	3216, 3221, 3227, 3228, 3240, 3321	356.11272800
116	26495	Surf Coast (S) - West	ML210	Barwon	3230	3216, 3228, 3230, 3231, 3232, 3235, 3240, 3241, 3242, 3321	1196.82150900
117	20260	Ararat (RC)	ML211	Grampians	3375	3271, 3272, 3293, 3294, 3351, 3361, 3373, 3374, 3375, 3377, 3378, 3379, 3381, 3469	4211.35681400
118	20571	Ballarat (C) - Central	ML211	Grampians	3350	3350, 3356	34.09129900
119	20572	Ballarat (C) - Inner North	ML211	Grampians	3352	3350, 3351, 3352, 3355, 3356, 3364	327.96296500
120	20574	Ballarat (C) - South	ML211	Grampians	3356	3350, 3351, 3352, 3356, 3357	113.25945100
121	21671	C. Goldfields (S) - M'borough	ML211	Grampians	3465	3465.0	23.23950800

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id	SLA Code	SLA Name	ML Code	ML Name	P Code	P Codes All	Area
122	21674	C. Goldfields (S) Bal	ML211	Grampians	3371	3364, 3370, 3371, 3462, 3464, 3465, 3472, 3475	1509.54495300
123	22491	Golden Plains (S) - North-West	ML211	Grampians	3351	3324, 3351, 3352, 3360	1037.42388500
124	22911	Hepburn (S) - East	ML211	Grampians	3458	3364, 3444, 3446, 3447, 3451, 3458, 3460, 3461	734.87246600
125	22912	Hepburn (S) - West	ML211	Grampians	3363	3352, 3363, 3364, 3370, 3371, 3461	738.11108600
126	22980	Hindmarsh (S)	ML211	Grampians	3414	3393, 3395, 3401, 3414, 3418, 3419, 3423, 3424	7524.18203200
127	23191	Horsham (RC) - Central	ML211	Grampians	3400	3400.0	23.82951600
128	23194	Horsham (RC) Bal	ML211	Grampians	3401	3385, 3390, 3401, 3409	4243.23258400
129	25154	Moorabool (S) - Ballan	ML211	Grampians	3341	3334, 3340, 3341, 3342, 3345, 3352, 3458, 3461	908.17565300
130	25155	Moorabool (S) - West	ML211	Grampians	3334	3333, 3334, 3345, 3352, 3357, 3364, 3461	595.13644000
131	25811	N. Grampians (S) - St Arnaud	ML211	Grampians	3477	3384, 3387, 3388, 3465, 3475, 3477, 3478, 3480	2468.17273300
132	25814	N. Grampians (S) - Stawell	ML211	Grampians	3374	3374, 3377, 3380, 3381, 3384, 3385, 3387, 3388, 3477	3259.83730700
133	25991	Pyrenees (S) - North	ML211	Grampians	3467	3352, 3371, 3373, 3377, 3384, 3465, 3467, 3468, 3469, 3477, 3478	1938.99918900
134	25994	Pyrenees (S) - South	ML211	Grampians	3373	3325, 3351, 3352, 3360, 3361, 3373, 3375	1495.57045600
135	26890	West Wimmera (S)	ML211	Grampians	3317	3312, 3317, 3318, 3319, 3401, 3409, 3412, 3413, 3415, 3418, 3419, 3420	9108.37763700
136	27631	Yarriambiack (S) - North	ML211	Grampians	3395	3395, 3396, 3424, 3485, 3487, 3488, 3489, 3491	3794.66822700
137	27632	Yarriambiack (S) - South	ML211	Grampians	3388	3385, 3388, 3390, 3391, 3392, 3393, 3395, 3401, 3480	3531.12052700
138	21831	Corangamite (S) - North	ML212	Great South Coast	3260	3251, 3260, 3264, 3265, 3266, 3271, 3322, 3323, 3324, 3325, 3352, 3360, 3361	2687.48542800
139	21832	Corangamite (S) - South	ML212	Great South Coast	3266	3237, 3239, 3249, 3260, 3265, 3266, 3267, 3268, 3269, 3270	1720.06903200
140	22411	Gleneelg (S) - Heywood	ML212	Great South Coast	3292	3285, 3292, 3301, 3302, 3303, 3304, 3305, 3309, 3312	3344.44148500
141	22413	Gleneelg (S) - Portland	ML212	Great South Coast	3305	3305.0	57.02848800
142	25491	Moyne (S) - North-East	ML212	Great South Coast	3271	3264, 3265, 3271, 3272, 3273, 3276, 3279, 3351, 3379	1731.53334200
143	25496	Moyne (S) - South	ML212	Great South Coast	3265	3265, 3268, 3270, 3275, 3276, 3277, 3278, 3279, 3280, 3281, 3282, 3283, 3284, 3285	1470.89566800
144	26261	S. Grampians (S) - Hamilton	ML212	Great South Coast	3300	3300.0	21.99468500
145	26264	S. Grampians (S) - Wannon	ML212	Great South Coast	3315	3301, 3312, 3314, 3315, 3317, 3401, 3407	1997.12436700

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id	SLA Code	SLAName	MLCode	MLName	PCode	PCodesAll	Area
146	26265	S. Grampians (S) Bal	ML212	Great South Coast	3289	3289, 3293, 3294, 3300, 3301, 3302, 3314, 3315, 3401, 3407	4636.31509100
147	26730	Warrnambool (C)	ML212	Great South Coast	3277	3277, 3280, 3281, 3282, 3283	120.85246000
148	10300	Bahranald (A)	ML213	Lower Murray	2715	2711, 2715, 2734, 2737, 2878, 3549	21693.08196000
149	18200	Wentworth (A)	ML213	Lower Murray	2648	2648, 2715, 2717, 2738, 2739, 3490, 3494, 3498, 3501, 3505	26256.79325000
150	21271	Buloke (S) - North	ML213	Lower Murray	3483	3393, 3395, 3482, 3483, 3485, 3487, 3488, 3525, 3527, 3529, 3530, 3531, 3533, 3542, 3544	1567.09867700
151	24781	Mildura (RC) - Pt A	ML213	Lower Murray	3496	3496, 3498, 3500, 3501, 3505	518.89807000
152	24782	Mildura (RC) - Pt B	ML213	Lower Murray	3490	3489, 3490, 3491, 3494, 3496, 3501, 3505, 3506, 3507, 3509, 3512, 3533	21563.58657000
153	26614	Swan Hill (RC) - Robinvale	ML213	Lower Murray	3549	3549, 3597, 3599	832.19156900
154	26616	Swan Hill (RC) Bal	ML213	Lower Murray	3544	2715, 2735, 3533, 3544, 3546, 3549, 3579, 3583, 3584, 3585, 3586, 3588, 3589, 3590, 3591, 3594, 3595, 3596, 3597, 3599	2740.72431500
155	11860	Conargo (A)	ML214	Loddon - Mallee - Murray	0	2710, 2713, 2714, 2716, 2733	8737.94187500
156	12500	Deniliquin (A)	ML214	Loddon - Mallee - Murray	2710	2710.0	143.18715400
157	15500	Murray (A)	ML214	Loddon - Mallee - Murray	2731	2710, 2714, 2731, 2732, 3564, 3639	4344.45317300
158	17800	Wakool (A)	ML214	Loddon - Mallee - Murray	2732	2710, 2711, 2732, 2733, 2734, 2735, 2736, 3579, 3585, 3586	7520.47214600
159	21272	Buloke (S) - South	ML214	Loddon - Mallee - Murray	3480	3477, 3478, 3480, 3482, 3518, 3525, 3527	2549.91124700
160	21371	Campaspe (S) - Echuca	ML214	Loddon - Mallee - Murray	3564	3564.0	39.29854300
161	21374	Campaspe (S) - Kyabram	ML214	Loddon - Mallee - Murray	3620	3559, 3561, 3564, 3620, 3621, 3622, 3624, 3639	984.95238800
162	21375	Campaspe (S) - Rochester	ML214	Loddon - Mallee - Murray	3561	3559, 3561, 3562, 3563, 3564, 3565, 3566, 3572, 3573, 3622	1950.25300100
163	21376	Campaspe (S) - South	ML214	Loddon - Mallee - Murray	3559	3523, 3551, 3557, 3558, 3559, 3561, 3612, 3623	1544.35230600
164	22250	Gannawarra (S)	ML214	Loddon - Mallee - Murray	3540	2732, 3527, 3540, 3542, 3567, 3568, 3579, 3580, 3581, 3585	3735.33356200
165	22621	Gr. Bendigo (C) - Central	ML214	Loddon - Mallee - Murray	0	3550, 3555	15.60373100
166	22622	Gr. Bendigo (C) - Eaglehawk	ML214	Loddon - Mallee - Murray	3556	3550, 3556	12.05620800
167	22623	Gr. Bendigo (C) - Inner East	ML214	Loddon - Mallee - Murray	3550	3550, 3551, 3555	26.29731200
168	22624	Gr. Bendigo (C) - Inner North	ML214	Loddon - Mallee - Murray	0	3550, 3551, 3556	147.45109800
169	22625	Gr. Bendigo (C) - Inner West	ML214	Loddon - Mallee - Murray	3555	3453, 3515, 3516, 3550, 3551, 3555, 3556	177.86588000
170	22626	Gr. Bendigo (C) - S'saye	ML214	Loddon - Mallee - Murray	3551	3550, 3551, 3555	114.99829900
171	22628	Gr. Bendigo (C) - Pt B	ML214	Loddon - Mallee - Murray	3515	3444, 3453, 3463, 3515, 3516, 3523, 3551, 3556, 3557, 3558, 3559, 3570	2505.70757000

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id	SLA Code	SLA Name	ML Code	ML Name	P Code	P Codes All	Area
172	23943	Loddon (S) - North	ML214	Loddon - Mallee - Murray	3537	3517, 3518, 3525, 3527, 3537, 3567, 3570, 3571, 3572, 3573, 3575, 3576, 3579	3210.40243100
173	23945	Loddon (S) - South	ML214	Loddon - Mallee - Murray	3516	3463, 3472, 3475, 3477, 3515, 3516, 3517, 3518, 3520, 3525, 3551, 3556, 3570	3486.03763800
174	25431	Mount Alexander (S) - C'maine	ML214	Loddon - Mallee - Murray	3450	3450, 3451	22.94881300
175	25434	Mount Alexander (S) Bal	ML214	Loddon - Mallee - Murray	3447	3364, 3444, 3446, 3447, 3448, 3450, 3451, 3453, 3461, 3462, 3463, 3464, 3465, 3472	1506.66969600
176	26611	Swan Hill (RC) - Central	ML214	Loddon - Mallee - Murray	3585	3585.0	22.09211600
177	22831	Gr. Shepparton (C) - Pt A	ML215	Goulburn Valley	3614	3614, 3616, 3629, 3630, 3631, 3633, 3634	389.93991500
178	22834	Gr. Shepparton (C) - Pt B East	ML215	Goulburn Valley	3634	3610, 3630, 3631, 3633, 3634, 3646, 3647, 3669, 3725	1072.99778000
179	22835	Gr. Shepparton (C) - Pt B West	ML215	Goulburn Valley	3610	3608, 3610, 3614, 3616, 3617, 3618, 3620, 3623, 3629, 3631	959.01531700
180	24851	Mitchell (S) - North	ML215	Goulburn Valley	3521	3435, 3444, 3521, 3522, 3523, 3658, 3659, 3660, 3662, 3663, 3664, 3666, 3764	1894.88279500
181	24854	Mitchell (S) - South	ML215	Goulburn Valley	3658	3658, 3659, 3753, 3756, 3758, 3762, 3764	967.54793800
182	24901	Moir (S) - East	ML215	Goulburn Valley	3727	3634, 3636, 3644, 3646, 3649, 3675, 3678, 3685, 3727, 3728, 3730	1527.73224200
183	24904	Moir (S) - West	ML215	Goulburn Valley	3635	2714, 3634, 3635, 3636, 3637, 3638, 3639, 3640, 3641, 3644, 3646, 3649	2518.82067500
184	25621	Murrindindi (S) - East	ML215	Goulburn Valley	3711	3666, 3711, 3712, 3713, 3714, 3715, 3718, 3719, 3778, 3779	2228.19172600
185	25622	Murrindindi (S) - West	ML215	Goulburn Valley	3717	3658, 3660, 3666, 3714, 3717, 3718, 3719, 3757, 3763, 3777	1651.20888000
186	26430	Strathbogie (S)	ML215	Goulburn Valley	3607	3523, 3607, 3608, 3610, 3612, 3631, 3646, 3663, 3664, 3665, 3666, 3669, 3670	3303.25495300
187	10050	Albury (C)	ML216	Hume	2640	2640, 2641, 3691, 3694	305.93089700
188	10650	Berrigan (A)	ML216	Hume	2712	2646, 2647, 2712, 2713, 2714, 3644	2065.92696300
189	12300	Corowa Shire (A)	ML216	Hume	2643	2643, 2646, 2647	2329.25202200
190	20111	Alpine (S) - East	ML216	Hume	3697	3691, 3697, 3698, 3699, 3737, 3739, 3740, 3741, 3744, 3898	3562.12649600
191	20112	Alpine (S) - West	ML216	Hume	3737	3737, 3738, 3739, 3740	1226.15647100
192	21011	Benalla (RC) - Benalla	ML216	Hume	3672	3672.0	23.52264100
193	21014	Benalla (RC) Bal	ML216	Hume	3670	3669, 3670, 3672, 3673, 3675, 3723, 3725, 3726	2329.11749200
194	23351	Indigo (S) - Pt A	ML216	Hume	3683	3683, 3685, 3688, 3691, 3695, 3737, 3747, 3749	1513.09949300

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id	SLA Code	SLA Name	ML Code	ML Name	P Code	P Codes All	Area
195	23352	Indigo (S) - Pt B	ML216	Hume	3685	3682, 3683, 3685, 3687	526.96668400
196	24250	Mansfield (S)	ML216	Hume	3715	3669, 3713, 3715, 3719, 3720, 3722, 3723	3843.83575600
197	26671	Towong (S) - Pt A	ML216	Hume	3700	3691, 3695, 3700, 3701	582.45680700
198	26672	Towong (S) - Pt B	ML216	Hume	3701	2642, 3691, 3700, 3701, 3704, 3705, 3707, 3708, 3709	6092.51830700
199	26701	Wangaratta (RC) - Central	ML216	Hume	3677	3677, 3678	27.75258900
200	27170	Wodonga (RC)	ML216	Hume	3690	3690, 3691, 3694	432.68881300
201	28249	Mount Buller Alpine Resort	ML216	Hume	0	3722, 3723	22.57615900
202	20741	Bass Coast (S) - Phillip Is.	ML217	Gippsland	3922	3922, 3923, 3925	100.57305400
203	20744	Bass Coast (S) Bal	ML217	Gippsland	3979	3925, 3945, 3951, 3979, 3984, 3990, 3991, 3992, 3995, 3996	764.18830000
204	20831	Baw Baw (S) - Pt A	ML217	Gippsland	3824	3824, 3825	307.14912100
205	20835	Baw Baw (S) - Pt B West	ML217	Gippsland	3816	3816, 3818, 3820, 3821, 3822, 3823, 3825, 3831, 3832, 3833, 3950, 3953, 3981, 3988	1598.59182700
206	22111	E. Gippsland (S) - Bairnsdale	ML217	Gippsland	3875	3875, 3878, 3880, 3882, 3885, 3902, 3903, 3904, 3909	627.94030000
207	22117	E. Gippsland (S) Bal	ML217	Gippsland	3885	3701, 3875, 3885, 3893, 3895, 3896, 3898, 3900	5705.83037000
208	23811	Latrobe (C) - Moe	ML217	Gippsland	3825	3825.0	136.90415300
209	23814	Latrobe (C) - Morwell	ML217	Gippsland	3840	3824, 3825, 3840, 3842, 3869, 3870, 3871	369.85876300
210	23815	Latrobe (C) - Traralgon	ML217	Gippsland	3844	3825, 3840, 3844, 3854, 3856, 3857	446.13783700
211	26171	South Gippsland (S) - Central	ML217	Gippsland	3871	3824, 3835, 3870, 3871, 3950, 3951, 3953, 3954, 3956, 3957, 3958, 3959, 3960, 3996	1392.65598300
212	26174	South Gippsland (S) - East	ML217	Gippsland	3957	3871, 3956, 3957, 3958, 3959, 3960, 3962, 3964, 3965, 3966, 3967	1365.49530300
213	26175	South Gippsland (S) - West	ML217	Gippsland	3945	3945, 3946, 3950, 3951, 3953, 3984, 3987, 3988	539.20196000
214	26811	Wellington (S) - Alberton	ML217	Gippsland	3874	3844, 3847, 3851, 3870, 3873, 3874, 3962, 3966, 3967, 3971	1874.70031500
215	26812	Wellington (S) - Avon	ML217	Gippsland	3852	3850, 3851, 3852, 3860, 3862, 3864	2641.27615200
216	26813	Wellington (S) - Maffra	ML217	Gippsland	3858	3850, 3851, 3857, 3858, 3859, 3860, 3862	4203.23747500
217	26814	Wellington (S) - Rosedale	ML217	Gippsland	3847	3844, 3847, 3850, 3851, 3854, 3856, 3857, 3858, 3873	2067.57792000
218	26815	Wellington (S) - Sale	ML217	Gippsland	3850	3850.0	30.50839300
219	31146	City - Remainder [Q]	ML301	Metro North Brisbane	0		1.52065100
220	31151	Clayfield	ML301	Metro North Brisbane	0		2.90574800
221	31271	Hendra	ML301	Metro North Brisbane	0		2.70515300
222	31312	Kedron	ML301	Metro North Brisbane	4031	4012, 4031, 4032, 4053	5.20520900
223	31326	Keperra	ML301	Metro North Brisbane	0		5.45312900

Continued on next page



Table D.1 – Continued from previous page

id	SLA Code	SLA Name	ML Code	ML Name	P Code	P Codes All	Area
224	31012	Algester	ML302	Greater Metro South Brisbane	0		3.88780000
225	31563	Tarragindi	ML302	Greater Metro South Brisbane	0		4.53507400
226	36251	Alexandra Hills	ML302	Greater Metro South Brisbane	0		13.57175000
227	36257	Capalaba	ML302	Greater Metro South Brisbane	0		18.89209800
228	36283	Redland (C) Bal	ML302	Greater Metro South Brisbane	0		318.64210800
229	33515	Broadbeach Waters	ML303	Gold Coast	0		5.29066300
230	33543	Helensvale	ML303	Gold Coast	4212	4212.0	19.90347700
231	33567	Nerang	ML303	Gold Coast	4211	4211, 4214	64.07888100
232	33582	Robina	ML303	Gold Coast	0		14.83498800
233	33585	Southport	ML303	Gold Coast	4215	4214, 4215	14.26278200
234	31176	Doolandella-Forest Lake	ML305	West Moreton - Oxley	0		9.96761700
235	33976	Ipswich (C) - West	ML305	West Moreton - Oxley	4340	4306, 4340, 4346	218.01292400
236	35600	Murweh (S)	ML306	Darling Downs - South Queensland	4468	4467, 4468, 4470, 4477, 4478, 4479	40698.49263000
237	37038	Murray	ML310	Townsville - Mackay	0		25.64257200
238	37044	Oonomba-Idalia-Cluden	ML310	Townsville - Mackay	0		9.10706200
239	37071	Vincent	ML310	Townsville - Mackay	0		1.30249800
240	32072	Cairns (R) - Northern Suburbs	ML311	Far North Queensland	4879	4871, 4877, 4878, 4879	51.71612000
241	45681	Playford (C) - East Central	ML401	Northern Adelaide	5114	5112, 5113, 5114	11.70362100
242	45683	Playford (C) - Elizabeth	ML401	Northern Adelaide	5112	5112, 5113, 5114	20.17639600
243	45894	Port Adel. Enfield (C) - Inner	ML401	Northern Adelaide	5084	5083, 5084, 5085, 5094	15.17630700
244	47148	Salisbury (C) Bal	ML401	Northern Adelaide	5095	5094, 5095, 5107, 5110, 5111	89.42673700
245	47705	Tea Tree Gully (C) - North	ML401	Northern Adelaide	5125	5109, 5125, 5126, 5127	17.59346400
246	44551	Mount Barker (DC) - Central	ML402	Central Adelaide and Hills	5245	5245, 5250, 5251, 5252	50.01797900
247	45895	Port Adel. Enfield (C) - Coast	ML402	Central Adelaide and Hills	5015	5015, 5016, 5017, 5018, 5019	21.56635300
248	48414	West Torrens (C) - West	ML402	Central Adelaide and Hills	5032	5024, 5031, 5032, 5033, 5037, 5038, 5040, 5045, 5950	24.32895500
249	40221	Alexandrina (DC) - Coastal	ML403	Southern Adelaide - Fleurieu - Kangaroo Island	5210	5172, 5210, 5211, 5212, 5213, 5214, 5255	476.64306500
250	44065	Marion (C) - South	ML403	Southern Adelaide - Fleurieu - Kangaroo Island	5158	5049, 5158, 5159	20.52138900
251	44345	Mitcham (C) - West	ML403	Southern Adelaide - Fleurieu - Kangaroo Island	5039	5039, 5041, 5042	12.76988400
252	45341	Onkaparinga (C) - Hackham	ML403	Southern Adelaide - Fleurieu - Kangaroo Island	5163	5163, 5168	32.42117200
253	45344	Onkaparinga (C) - North Coast	ML403	Southern Adelaide - Fleurieu - Kangaroo Island	5160	5160, 5162, 5163, 5164, 5165, 5166, 5167, 5168	25.64157400
254	45347	Onkaparinga (C) - Woodcroft	ML403	Southern Adelaide - Fleurieu - Kangaroo Island	5161	5158, 5159, 5161, 5162, 5163	27.33038900
255	42250	Grant (DC)	ML404	Country South SA	5291	5277, 5278, 5280, 5291	1898.01402300
256	44620	Mount Gambier (C)	ML404	Country South SA	5290	5290, 5291	33.89444700
257	47800	The Coorong (DC)	ML404	Country South SA	5259	5259, 5260, 5261, 5264, 5265, 5266, 5267, 5301	8832.44179100
258	48341	Wattle Range (DC) - East	ML404	Country South SA	5263	5263, 5271, 5277, 5278, 5279	1542.70522400

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Table D.1 – Continued from previous page

id	SLA Code	SLA Name	ML Code	ML Name	P Code	PCodes All	Area
259	43650	Light (RegC)	ML405	Country North SA	5360	5118, 5350, 5351, 5352, 5355, 5356, 5360, 5371, 5372, 5373, 5374, 5400, 5401, 5410, 5502	1276.84475300
260	54200	Kalamunda (S)	ML501	Perth Central and East Metro	6057	6057, 6058, 6076, 6105, 6107, 6111	324.20020500
261	57914	Stirling (C) - Central	ML502	Perth North Metro	6017	6014, 6016, 6017, 6021, 6022, 6050, 6052, 6059, 6060, 6061, 6062	59.10134700
262	58761	Wanneroo (C) - North-East	ML502	Perth North Metro	6031	6031, 6032, 6033, 6065, 6077, 6078	457.15858300
263	55320	Melville (C)	ML503	Fremantle	6149	6149, 6150, 6153, 6154, 6156, 6157, 6163	52.81763600
264	50210	Armadale (C)	ML504	Bentley - Armadale	6111	6111, 6112	559.91584400
265	51330	Canning (C)	ML504	Bentley - Armadale	6102	6102, 6106, 6107, 6147, 6148, 6149, 6155	64.89985400
266	54830	Kwinana (T)	ML505	Perth South Coastal	6165	6165, 6167, 6170	120.01184500
267	55110	Mandurah (C)	ML505	Perth South Coastal	6180	6180, 6209, 6210, 6211	174.22533900
268	57490	Rockingham (C)	ML505	Perth South Coastal	6168	6168, 6169, 6171, 6172, 6173, 6174, 6175, 6176, 6182	256.89093600
269	55390	Menzies (S)	ML507	Goldfields - Midwest	6436	6431, 6436	124635.48500000
270	60811	Central Coast (M) - Pt A	ML601	Tasmania	7315	7310, 7315, 7316	106.35720600
271	61210	Circular Head (M)	ML601	Tasmania	7330	7321, 7330, 7331	4897.63111700
272	61410	Clarence (C)	ML601	Tasmania	7015	7015, 7016, 7017, 7018, 7019, 7020, 7021, 7022, 7023, 7024, 7025, 7026, 7170, 7172	377.95457500
273	61610	Devonport (C)	ML601	Tasmania	7310	7307, 7310, 7315	111.25845500
274	61810	Dorset (M)	ML601	Tasmania	7260	7254, 7260, 7261, 7262, 7263, 7264, 7265	3227.61891300
275	62211	George Town (M) - Pt A	ML601	Tasmania	7253	7252, 7253	104.55621000
276	62610	Glenorchy (C)	ML601	Tasmania	7009	7008, 7009, 7010, 7011, 7012, 7030	121.14870000
277	63611	Kingborough (M) - Pt A	ML601	Tasmania	7050	7007, 7050, 7052, 7053, 7054, 7055, 7109, 7150	269.62784400
278	64012	Launceston (C) - Pt B	ML601	Tasmania	7248	7248, 7249, 7250, 7252, 7258, 7259	236.44388600
279	64811	Sorell (M) - Pt A	ML601	Tasmania	7171	7171, 7172, 7173	257.45539900
280	65412	Waratah/Wynyard (M) - Pt B	ML601	Tasmania	0	7321, 7322, 7325	3359.15826800
281	65610	West Coast (M)	ML601	Tasmania	7466	7321, 7466, 7467, 7468, 7469, 7470	9859.76982000
282	65811	West Tamar (M) - Pt A	ML601	Tasmania	7270	7250, 7270, 7275, 7276, 7277	294.04734500
283	71078	Nakara	ML701	Northern Territory	0		1.14037200
284	72200	Katherine (T)	ML701	Northern Territory	850	822, 850, 852, 853	7416.64561600
285	80609	Bonython	ML801	Australian Capital Territory	0		2.90411900
286	82079	Duffy	ML801	Australian Capital Territory	0		2.79404800
287	82259	Evatt	ML801	Australian Capital Territory	0		3.06040100
288	85319	Lyons	ML801	Australian Capital Territory	0		2.26183900
289	86759	Parkes	ML801	Australian Capital Territory	0		2.71966500
290	10450		999999	ML_Name_Unknown			
291	10852		999999	ML_Name_Unknown			
292	11733		999999	ML_Name_Unknown			

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Table D.1 – Continued from previous page

id	SLA Code	SLA Name	ML Code	ML Name	P Code	PCodesAll	Area
293	12450		999999	ML_Name_Unknown			
294	13350		999999	ML_Name_Unknown			
295	13400		999999	ML_Name_Unknown			
296	14050		999999	ML_Name_Unknown			
297	14650		999999	ML_Name_Unknown			
298	15400		999999	ML_Name_Unknown			
299	15902		999999	ML_Name_Unknown			
300	16250		999999	ML_Name_Unknown			
301	16350		999999	ML_Name_Unknown			
302	17300		999999	ML_Name_Unknown			
303	17551		999999	ML_Name_Unknown			
304	18450		999999	ML_Name_Unknown			
305	18550		999999	ML_Name_Unknown			
306	23671		999999	ML_Name_Unknown			
307	27074		999999	ML_Name_Unknown			
308	27455		999999	ML_Name_Unknown			
309	30350		999999	ML_Name_Unknown			
310	30600		999999	ML_Name_Unknown			
311	31981		999999	ML_Name_Unknown			
312	32018		999999	ML_Name_Unknown			
313	32132		999999	ML_Name_Unknown			
314	33050		999999	ML_Name_Unknown			
315	33300		999999	ML_Name_Unknown			
316	33350		999999	ML_Name_Unknown			
317	33461		999999	ML_Name_Unknown			
318	33466		999999	ML_Name_Unknown			
319	33501		999999	ML_Name_Unknown			
320	33532		999999	ML_Name_Unknown			
321	33553		999999	ML_Name_Unknown			
322	33591		999999	ML_Name_Unknown			
323	33751		999999	ML_Name_Unknown			
324	34400		999999	ML_Name_Unknown			
325	34700		999999	ML_Name_Unknown			
326	34850		999999	ML_Name_Unknown			
327	34902		999999	ML_Name_Unknown			
328	34950		999999	ML_Name_Unknown			
329	35755		999999	ML_Name_Unknown			
330	35758		999999	ML_Name_Unknown			
331	36208		999999	ML_Name_Unknown			
332	36451		999999	ML_Name_Unknown			
333	36807		999999	ML_Name_Unknown			
334	36850		999999	ML_Name_Unknown			
335	36906		999999	ML_Name_Unknown			
336	45898		999999	ML_Name_Unknown			

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Table D.1 – Continued from previous page

id	SLA Code	SLA Name	ML Code	ML Name	P Code	PCodesAll	Area
337	56440		999999	ML_Name_Unknown			
338	81449		999999	ML_Name_Unknown			

---

## APPENDIX E. LOG OUTPUT FROM DATA PROCESSING

---

Following is the raw log output of the processes run to generate published data from the raw data as received from BendigoHealth.

```
1 This program (000_CreateModsDB.sh):
  1. DROPs and re-CREATES [mods02]
  2. DROPs and re-CREATES user mods2
5  3. GRANTs mods2 Read-Write access to [mods02].*

Press y to continue (anything else to stop): Database
information_schema
fedora3
10 islandora
  mods02
  mysql
  performance_schema
  symphony
15 test
  test_pymysql
  test_pymysql2
All done. List of databases in above list; [mods02] should be amongst them.
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
'ml_abs'
20 result = self._query(query)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
'bh_abs'
  result = self._query(query)

This program (001_ABS.py):
25 1. extracts data:
   <dirInMLData>/ABS.xlsx --> [mods02]![ml_abs]

  2. dumps data:
30  [mods02]![ml_abs] --> ml_abs.csv

<dirInMLData> = /opt/repos/bitbucket/mods02/dsML/dataIn
<dirOutMLData> = /opt/repos/bitbucket/mods02/dsML/dataOut

35

Pre-requisites:
-----
Needs to be run twice; second time to include abs-ids not present in ml_patients
40 See # Add missing abs-ids for details
Missing ids found were:
  - 'Unknown-99999',
  - 'ML111-13400',
  - 'Unknown-32666',
45  - 'ML105-10501',
  - 'Unknown-36414',
  - 'ML216-13374',
  - 'ML101-11100',
  - 'ML801-85589',
50  - 'ML801-81449',
  - 'ML508-59520',
  - 'ML506-56440',
  - 'ML105-10503',
  - 'ML506-59450',
55  - 'ML801-84959',
  - 'ML105-10505',
```

```
60 - 'Unknown-32663',
    - 'ML111-13350',
    - 'Unknown-32665',
    - 'ML216-13371',
    - 'ML506-59660',
    - 'Unknown-32662'
```

65 References:

-----  
<http://stackoverflow.com/questions/372885/how-do-i-connect-to-a-mysql-database-in-python>

```
Loading ABS.xlsx . . .
70 Processing ABS.xlsx -> [ml_abs] (1401 rows) . . .
    100 rows loaded
    200 rows loaded
    300 rows loaded
    400 rows loaded
75 500 rows loaded
    600 rows loaded
    700 rows loaded
    800 rows loaded
    900 rows loaded
80 1000 rows loaded
    1100 rows loaded
    1200 rows loaded
    1300 rows loaded
    1400 rows loaded
85 1400 rows processed : 1400 rows loaded -> [ml_abs] ( 7.53 secs)
Adding missing abs ids
Populating [bh_abs]
```

```
INSERT INTO bh_abs (
90   SLA_5_Digit_Code,
    SLA_Code,
    SLA_Name,
    ML_Code,
    ML_Name,
95   SD_Code_2011,
    SD_Name_2011,
    SSD_Code_2011,
    SSD_Name_2011,
100  Sdist_Code_2011,
    Sdist_Name_2011,
    MSR_Code_2011,
    MSR_Name_2011,
    SR_Code_2011,
    SR_Name_2011,
105  SRS_Code_2011,
    SRS_Name_2011,
    SLA_Region_Code_2011,
    State_Code,
    State,
110  Postcode,
    Pct_Postcode_in_LGA,
    Latitude,
    Longitude,
    Electoral_Divisions,
115  Postcode_Main,
    Postcodes_All,
    Area,
    Population_Usual_Resident_Population_2009,
    Population_Usual_Resident_Population_2011,
120  IRSAD_Score_by_SLA,
    IRSAD_Decile_by_SLA,
    IRSD_Score_by_SLA,
    IRSD_Decile_by_SLA,
    IER_Score_by_SLA,
125  IER_Decile_by_SLA,
    IEO_Score_by_SLA,
    IEO_Decile_by_SLA
)
SELECT DISTINCT
```

```

130     SLA_5_Digit_Code,
        SLA_Code,
        SLA_Name,
        ML_Code,
        ML_Name,
135     SD_Code_2011,
        SD_Name_2011,
        SSD_Code_2011,
        SSD_Name_2011,
        Sdist_Code_2011,
140     Sdist_Name_2011,
        MSR_Code_2011,
        MSR_Name_2011,
        SR_Code_2011,
        SR_Name_2011,
145     SRS_Code_2011,
        SRS_Name_2011,
        SLA_Region_Code_2011,
        State_Code,
        State,
150     Postcode,
        Pct_Postcode_in_LGA,
        Latitude,
        Longitude,
        Electoral_Divisions,
155     Postcode_Main,
        Postcodes_All,
        Area,
        Population_Usual_Resident_Population_2009,
        Population_Usual_Resident_Population_2011,
160     IRSAD_Score_by_SLA,
        IRSAD_Decile_by_SLA,
        IRSD_Score_by_SLA,
        IRSD_Decile_by_SLA,
        IER_Score_by_SLA,
165     IER_Decile_by_SLA,
        IEO_Score_by_SLA,
        IEO_Decile_by_SLA
FROM
    ml_abs
170
All done
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
'ml_sex'
result = self._query(query)

175 This program (002_Sex.py):

1. extracts data:
   <dirInMLData>/Sex.xlsx --> [mods02]![ml_sex]

180 2. dumps data:
   [mods02]![ml_sex] --> ml_sex.csv

<dirInMLData> = /opt/repos/bitbucket/mods02/dsML/dataIn
<dirOutMLData> = /opt/repos/bitbucket/mods02/dsML/dataOut
185

Pre-requisites:
-----

References:
-----
http://stackoverflow.com/questions/372885/how-do-i-connect-to-a-mysql-database-in-python
195
Loading Sex.xlsx . . .
Processing Sex.xlsx -> [ml_sex] (3 rows) . . .
3 rows processed : 3 rows loaded -> [ml_sex] ( 0.15 secs)
All done
200 /home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
'bh_patient_episode'

```

```

    result = self._query(query)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
'bh_drg'
    result = self._query(query)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
'bh_drg_group'
205    result = self._query(query)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
'bh_mdc'
    result = self._query(query)

This program (016_DRG_Mapping_Tables.py):
210
1. extracts data:
   <dirInBHData>/DRG-Mapping-Table.xlsx --> [mods02]![bh_drg_mapping_table]

2. dumps data:
215   [mods02]![bh_drg_mapping_table] --> bh_drg_mapping_table.csv

<dirInBHData> = /opt/repos/bitbucket/mods02/dsBH/dataIn
<dirOutBHData> = /opt/repos/bitbucket/mods02/dsBH/dataOut

220

Pre-requisites:
-----

225

References:
-----
http://stackoverflow.com/questions/372885/how-do-i-connect-to-a-mysql-database-in-python

230 Loading DRG-Map-Table.xlsx . . .
Processing DRG-Mapping-Table.xlsx -> [bh_DRG] (1025 rows) . . .
1000 rows loaded
1025 rows processed : 1025 rows loaded -> [bh_DRG] ( 2.54 secs)
INSERT INTO bh_drg_group (MDCCategory, DRGGroup) SELECT DISTINCT MDCCategory_, MDCDescription_ FROM
bh_drg ORDER BY DRGCode
235 UPDATE bh_drg, bh_drg_group SET bh_drg.DRGGroup_id = bh_drg_group.id WHERE bh_drg.MDCCategory_ =
bh_drg_group.MDCCategory_
ALTER TABLE bh_drg DROP MDCCategory_, DROP MDCDescription_
Populating [bh_mdc].[MDCDescriptionLongWithoutQualifiers] <-- [bh_drg].[
MDCDescriptionWithoutQualifiers_] (=Creation of Look-Up table)
INSERT INTO bh_mdc (MDCDescriptionLongWithoutQualifiers) SELECT DISTINCT
MDCDescriptionLongWithoutQualifiers_ FROM bh_drg ORDER BY MDCDescriptionLongWithoutQualifiers_
UPDATE bh_drg, bh_mdc SET bh_drg.MDC_id = bh_mdc.id WHERE bh_drg.MDCDescriptionLongWithoutQualifiers_
= bh_mdc.MDCDescriptionLongWithoutQualifiers
240 ALTER TABLE bh_drg DROP MDCDescriptionLongWithoutQualifiers_

This program (018_BH.py):

1. extracts data:
245   <dirInBHData>/BH20052014.xlsx --> [mods02]![bh_patient_episode]

2. dumps data:
   [mods02]![bh_patient_episode] --> bh_patient_episode.csv

250 <dirInBHData> = /opt/repos/bitbucket/mods02/dsBH/dataIn
<dirOutBHData> = /opt/repos/bitbucket/mods02/dsBH/dataOut

255 Pre-requisites:
-----

References:
-----
260 http://stackoverflow.com/questions/372885/how-do-i-connect-to-a-mysql-database-in-python

Creating tables
Loading BH20052014.xlsx
265 Processing BH20052014.xlsx -> [bh_patient_episode] (48215 rows) . . .

```

```

1000 rows loaded
2000 rows loaded
3000 rows loaded
4000 rows loaded
270 5000 rows loaded
6000 rows loaded
7000 rows loaded
8000 rows loaded
9000 rows loaded
275 10000 rows loaded
11000 rows loaded
12000 rows loaded
13000 rows loaded
14000 rows loaded
280 15000 rows loaded
16000 rows loaded
17000 rows loaded
18000 rows loaded
19000 rows loaded
285 20000 rows loaded
21000 rows loaded
22000 rows loaded
23000 rows loaded
24000 rows loaded
290 25000 rows loaded
26000 rows loaded
27000 rows loaded
28000 rows loaded
29000 rows loaded
295 30000 rows loaded
31000 rows loaded
32000 rows loaded
33000 rows loaded
34000 rows loaded
300 35000 rows loaded
36000 rows loaded
37000 rows loaded
38000 rows loaded
39000 rows loaded
305 40000 rows loaded
40470 rows loaded
48215 rows processed : 40470 rows loaded -> [bh_patient_episode] (135.65 secs)
4 rows excluded (Sex)
7744 rows excluded (Age)
310 CREATE TEMPORARY TABLE IF NOT EXISTS X AS (SELECT DISTINCT SLA_Code_ from bh_patient_episode where
      SLA_Code_ not in (SELECT DISTINCT SLA_5_Digit_Code from bh_abs))
INSERT INTO bh_abs (SLA_5_Digit_Code, SLA_Code, SLA_Name, ML_Code, ML_Name, State) SELECT SLA_Code_,
      SLA_Code_, NULL, 999999, 'ML_Name_Unknown', 'Vic' FROM X;
Updating [bh_patient_episode]![ABS_id] <-- [bh_abs]![id] joining on SLA_Code_ <--> SLA_5_Digit_Code
UPDATE bh_patient_episode,bh_abs SET bh_patient_episode.ABS_id = bh_abs.id WHERE bh_patient_episode.
      SLA_Code_ = bh_abs.SLA_5_Digit_Code
Dropping [bh_patient_episode]![SLA_Code_] (as now have this linked to [bh_abs]![id]
315 ALTER TABLE bh_patient_episode DROP COLUMN SLA_Code_
Populating [bh_admission_type].[AdmissionTypeCode,AdmissionType] <-- [bh_patient_episode].[
      AdmissionTypeCode_,AdmissionType_] (=Creation of Look-Up table)
INSERT INTO bh_admission_type (AdmissionTypeCode, AdmissionType) SELECT DISTINCT AdmissionTypeCode_,
      AdmissionType_ FROM bh_patient_episode ORDER BY AdmissionTypeCode_
UPDATE bh_patient_episode, bh_admission_type SET bh_patient_episode.AdmissionType_id =
      bh_admission_type.id WHERE bh_patient_episode.AdmissionTypeCode_ = bh_admission_type.
      AdmissionTypeCode
ALTER TABLE bh_patient_episode DROP COLUMN AdmissionTypeCode_
320 ALTER TABLE bh_patient_episode DROP COLUMN AdmissionType_
Populating [bh_source_of_admission].[SourceOfAdmissionCode,SourceOfAdmission] <-- [bh_patient_episode
      ].[SourceOfAdmissionCode_,SourceOfAdmission_] (=Creation of Look-Up table)
INSERT INTO bh_source_of_admission (SourceOfAdmissionCode, SourceOfAdmission) SELECT DISTINCT
      SourceOfAdmissionCode_, SourceOfAdmission_ FROM bh_patient_episode ORDER BY
      SourceOfAdmissionCode_
UPDATE bh_patient_episode, bh_source_of_admission SET bh_patient_episode.SourceOfAdmission_id =
      bh_source_of_admission.id WHERE bh_patient_episode.SourceOfAdmissionCode_ =
      bh_source_of_admission.SourceOfAdmissionCode
ALTER TABLE bh_patient_episode DROP COLUMN SourceOfAdmissionCode_
325 ALTER TABLE bh_patient_episode DROP COLUMN SourceOfAdmission_

```



```

Populating [bh_length_of_stay].[LengthOfStayCode] <-- [bh_patient_episode].[LengthOfStayCode_] (=
  Creation of Look-Up table)
INSERT INTO bh_length_of_stay (LengthOfStayCode) SELECT DISTINCT LengthOfStayCode_ FROM
  bh_patient_episode ORDER BY LengthOfStayCode_
UPDATE bh_patient_episode, bh_length_of_stay SET bh_patient_episode.LengthOfStay_id =
  bh_length_of_stay.id WHERE bh_patient_episode.LengthOfStayCode_ = bh_length_of_stay.
  LengthOfStayCode
ALTER TABLE bh_patient_episode DROP COLUMN LengthOfStayCode_
330 UPDATE bh_patient_episode, ml_sex SET bh_patient_episode.Sex_id = ml_sex.id WHERE bh_patient_episode.
  Gender_ = substr(ml_sex.Sex_Desc,1,1)
ALTER TABLE bh_patient_episode DROP COLUMN Gender_
Updating [bh_length_of_stay]:[LengthOfStayDescription for LengthOfStayCode = 'S'
UPDATE bh_length_of_stay SET LengthOfStayDescription = 'Same Day' WHERE LengthOfStayCode = 'S'
Updating [bh_length_of_stay]:[LengthOfStayDescription for LengthOfStayCode = 'O'
335 UPDATE bh_length_of_stay SET LengthOfStayDescription = 'Overnight' WHERE LengthOfStayCode = 'O'
Updating [bh_length_of_stay]:[LengthOfStayDescription for LengthOfStayCode = 'M'
UPDATE bh_length_of_stay SET LengthOfStayDescription = 'Multi day stay' WHERE LengthOfStayCode = 'M'
Populating [bh_separation_method].[SeparationMethod] <-- [bh_patient_episode].[SeparationMethodCode_]
  (=Creation of Look-Up table)
INSERT INTO bh_separation_method (SeparationMethod) SELECT DISTINCT SeparationMethodCode_ FROM
  bh_patient_episode ORDER BY SeparationMethodCode_
340 UPDATE bh_patient_episode, bh_separation_method SET bh_patient_episode.SeparationMethod_id =
  bh_separation_method.id WHERE bh_patient_episode.SeparationMethodCode_ = bh_separation_method.
  SeparationMethod
ALTER TABLE bh_patient_episode DROP COLUMN SeparationMethodCode_
Updating [bh_separation_method]:[SeparationMethodDescription for SeparationMethod = 'Z'
UPDATE bh_separation_method SET SeparationMethodDescription = 'Left against medical advice' WHERE
  SeparationMethod = 'Z'
Updating [bh_separation_method]:[SeparationMethodDescription for SeparationMethod = 'H'
345 UPDATE bh_separation_method SET SeparationMethodDescription = 'Separation to private residence/
  accomodation' WHERE SeparationMethod = 'H'
Updating [bh_separation_method]:[SeparationMethodDescription for SeparationMethod = 'S'
UPDATE bh_separation_method SET SeparationMethodDescription = 'Statistical Separation (change in Care
  Type within this hospital' WHERE SeparationMethod = 'S'
Updating [bh_separation_method]:[SeparationMethodDescription for SeparationMethod = 'T'
UPDATE bh_separation_method SET SeparationMethodDescription = 'Separation and transfer to other acute
  hospital/extended care/rehabilitation/geriatric centre' WHERE SeparationMethod = 'T'
350 Updating [bh_separation_method]:[SeparationMethodDescription for SeparationMethod = 'N'
UPDATE bh_separation_method SET SeparationMethodDescription = 'Separation and transfer to aged care
  residential facility' WHERE SeparationMethod = 'N'
Updating [bh_separation_method]:[SeparationMethodDescription for SeparationMethod = 'A'
UPDATE bh_separation_method SET SeparationMethodDescription = 'Separation and transfer to mental
  health residential facility' WHERE SeparationMethod = 'A'
Updating [bh_separation_method]:[SeparationMethodDescription for SeparationMethod = 'B'
355 UPDATE bh_separation_method SET SeparationMethodDescription = 'Separation and transfer to Transition
  Care bed based program' WHERE SeparationMethod = 'B'
Updating [bh_separation_method]:[SeparationMethodDescription for SeparationMethod = '4'
UPDATE bh_separation_method SET SeparationMethodDescription = 'Unknown' WHERE SeparationMethod = '4'
Updating [bh_separation_method]:[SeparationMethodDescription for SeparationMethod = 'CA'
UPDATE bh_separation_method SET SeparationMethodDescription = 'Unknown' WHERE SeparationMethod = 'CA'
360 Updating [bh_separation_method]:[SeparationMethodDescription for SeparationMethod = 'CB'
UPDATE bh_separation_method SET SeparationMethodDescription = 'Unknown' WHERE SeparationMethod = 'CB'
Updating [bh_separation_method]:[SeparationMethodDescription for SeparationMethod = 'CH'
UPDATE bh_separation_method SET SeparationMethodDescription = 'Unknown' WHERE SeparationMethod = 'CH'
Updating [bh_separation_method]:[SeparationMethodDescription for SeparationMethod = 'CN'
365 UPDATE bh_separation_method SET SeparationMethodDescription = 'Unknown' WHERE SeparationMethod = 'CN'
Updating [bh_separation_method]:[SeparationMethodDescription for SeparationMethod = 'CT'
UPDATE bh_separation_method SET SeparationMethodDescription = 'Unknown' WHERE SeparationMethod = 'CT'
Populating [bh_care_type].[CareType] <-- [bh_patient_episode].[CareType_] (=Creation of Look-Up table)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown
  table 'bh_patient_episode'
  result = self._query(query)
370 /home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
  'bh_admission_type'
  result = self._query(query)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
  'bh_source_of_admission'
  result = self._query(query)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
  'bh_length_of_stay'
375 result = self._query(query)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
  'bh_separation_method'

```

```

    result = self._query(query)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
    'bh_care_type'
    result = self._query(query)
380 /home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
    'bh_example_query'
    result = self._query(query)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
    'bh_abs_tex'
    result = self._query(query)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Field '
    Postcodes_All' doesn't have a default value
385 result = self._query(query)

INSERT INTO bh_care_type (CareType) SELECT DISTINCT CareType_ FROM bh_patient_episode ORDER BY
    CareType_
UPDATE bh_patient_episode, bh_care_type SET bh_patient_episode.CareType_id = bh_care_type.id WHERE
    bh_patient_episode.CareType_ = bh_care_type.CareType
ALTER TABLE bh_patient_episode DROP COLUMN CareType_
390 Updating [bh_care_type]:[CareTypeDescription for CareType = '0'
UPDATE bh_care_type SET CareTypeDescription = 'Alcohol and Drug Program' WHERE CareType = '0'
Updating [bh_care_type]:[CareTypeDescription for CareType = '1'
UPDATE bh_care_type SET CareTypeDescription = 'NHT/Non-Acute' WHERE CareType = '1'
Updating [bh_care_type]:[CareTypeDescription for CareType = '2'
395 UPDATE bh_care_type SET CareTypeDescription = 'Designated Rehabilitation Program/Unit: Level 1' WHERE
    CareType = '2'
Updating [bh_care_type]:[CareTypeDescription for CareType = '4'
UPDATE bh_care_type SET CareTypeDescription = 'Other care (Acute) including Qualified newborn' WHERE
    CareType = '4'
Updating [bh_care_type]:[CareTypeDescription for CareType = '5A'
UPDATE bh_care_type SET CareTypeDescription = 'Approved Mental Health Service or Psycho geriatric
    Program -- Acute, Adult Mental Health Service' WHERE CareType = '5A'
400 Updating [bh_care_type]:[CareTypeDescription for CareType = '5G'
UPDATE bh_care_type SET CareTypeDescription = 'Approved Mental Health Service or Psycho geriatric
    Program -- Acute, Aged Persons Mental Health Service (APMH)' WHERE CareType = '5G'
Updating [bh_care_type]:[CareTypeDescription for CareType = '6'
UPDATE bh_care_type SET CareTypeDescription = 'Designated Rehabilitation Program/Unit: Level 2' WHERE
    CareType = '6'
Updating [bh_care_type]:[CareTypeDescription for CareType = '8'
405 UPDATE bh_care_type SET CareTypeDescription = 'Palliative Care Program' WHERE CareType = '8'
Updating [bh_care_type]:[CareTypeDescription for CareType = '9'
UPDATE bh_care_type SET CareTypeDescription = 'Geriatric Evaluation and Management Program' WHERE
    CareType = '9'
Updating [bh_care_type]:[CareTypeDescription for CareType = 'NSP'
UPDATE bh_care_type SET CareTypeDescription = 'Unknown' WHERE CareType = 'NSP'
410 Updating [bh_care_type]:[CareTypeDescription for CareType = 'U'
UPDATE bh_care_type SET CareTypeDescription = 'Unqualified newborn' WHERE CareType = 'U'
Updating [bh_care_type]:[CareTypeDescription for CareType = '5E'
UPDATE bh_care_type SET CareTypeDescription = 'Approved Mental Health Service or Psycho geriatric
    Program: -- Mental Health Secure Extended Care Unit (SECU)' WHERE CareType = '5E'
Updating [bh_care_type]:[CareTypeDescription for CareType = 'R2'
415 UPDATE bh_care_type SET CareTypeDescription = 'Restorative Care, Offsite' WHERE CareType = 'R2'
UPDATE bh_patient_episode, bh_drg, bh_drg_group SET bh_patient_episode.DRGGroup_id = bh_drg_group.id
    WHERE bh_patient_episode.DRG_ = bh_drg.DRGCode and bh_drg.DRGGroup_id = bh_drg_group.id
ALTER TABLE bh_patient_episode DROP COLUMN DRG_
INSERT INTO bh_example_query (bh_drg_group, cntTot) SELECT DRGGroup, count(*) FROM bh_patient_episode,
    bh_drg_group WHERE bh_patient_episode.DRGGroup_id = bh_drg_group.id GROUP BY DRGGroup
Dumping to /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_example_query.csv
420
INSERT INTO bh_abs_tex
    (SLACode,          SLAName, MLCode, MLName, PCode,          PCodesAll,   Area)
SELECT
    SLA_5_Digit_Code, SLA_Name, ML_Code, ML_Name, Postcode_Main, Postcodes_All, Area
425 FROM
    bh_abs
WHERE
    id IN (SELECT DISTINCT ABS_id FROM bh_patient_episode)

430 Exporting to /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_abs_tex.csv
All done
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
    'bh_cnt_by_admission_type'

```

```

    result = self._query(query)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
'bh_cnt_by_source_of_admission'
435 result = self._query(query)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
'bh_cnt_by_length_of_stay'
    result = self._query(query)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
'bh_cnt_by_separation_method'
    result = self._query(query)
440 /home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
'bh_cnt_by_care_type'
    result = self._query(query)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
'bh_cnt_by_drg_group'
    result = self._query(query)
/home/cja/.virtualenvs/mods/lib/python3.4/site-packages/pymysql/cursors.py:134: Warning: Unknown table
'bh_cnt_by_sex'
445 result = self._query(query)

```

This program (019\_CreateSummaryTables.py):

```

1. Creates and exports summary tables of BendigoHealth data in [mods02] to csv
450

```

```

<dirInMLData> = /opt/repos/bitbucket/mods02/dsML/dataIn
<dirOutMLData> = /opt/repos/bitbucket/mods02/dsML/dataOut

```

```

455
Pre-requisites:
-----

```

```

460
References:
-----
http://stackoverflow.com/questions/372885/how-do-i-connect-to-a-mysql-database-in-python

```

Creating tables

```

465 INSERT INTO bh_cnt_by_admission_type (id, AdmissionType, cntTot)
    SELECT bh_admission_type.id, AdmissionType, count(*) AS cntTot
    FROM bh_patient_episode, bh_admission_type
    WHERE bh_patient_episode.AdmissionType_id = bh_admission_type.id
    GROUP BY AdmissionType
470 ORDER BY bh_admission_type.id

```

```

INSERT INTO bh_cnt_by_source_of_admission (id, SourceOfAdmission, cntTot)
    SELECT bh_source_of_admission.id, SourceOfAdmission, count(*) AS cntTot
    FROM bh_patient_episode, bh_source_of_admission
475 WHERE bh_patient_episode.SourceOfAdmission_id = bh_source_of_admission.id
    GROUP BY SourceOfAdmission
    ORDER BY bh_source_of_admission.id

```

```

INSERT INTO bh_cnt_by_length_of_stay (id, LengthOfStay, LengthOfStayDescription, cntTot)
480 SELECT bh_length_of_stay.id, LengthOfStayCode, LengthOfStayDescription, count(*) AS cntTot
    FROM bh_patient_episode, bh_length_of_stay
    WHERE bh_patient_episode.LengthOfStay_id = bh_length_of_stay.id
    GROUP BY LengthOfStayCode
    ORDER BY bh_length_of_stay.id

```

```

485
INSERT INTO bh_cnt_by_separation_method (id, SeparationMethod, SeparationMethodDescription, cntTot)
    SELECT bh_separation_method.id, SeparationMethod, SeparationMethodDescription, count(*) AS cntTot
    FROM bh_patient_episode, bh_separation_method
    WHERE bh_patient_episode.SeparationMethod_id = bh_separation_method.id
490 GROUP BY SeparationMethod
    ORDER BY bh_separation_method.id

```

```

INSERT INTO bh_cnt_by_care_type (id, CareType, CareTypeDescription, cntTot)
495 SELECT bh_care_type.id, CareType, CareTypeDescription, count(*) AS cntTot
    FROM bh_patient_episode, bh_care_type
    WHERE bh_patient_episode.CareType_id = bh_care_type.id
    GROUP BY CareType
    ORDER BY bh_care_type.id

```

```
500 INSERT INTO bh_cnt_by_drg_group (id, DRGGroup, cntTot)
      SELECT bh_drg_group.id, DRGGroup, count(*) AS cntTot
      FROM bh_patient_episode, bh_drg_group
      WHERE bh_patient_episode.DRGGroup_id = bh_drg_group.id
      GROUP BY DRGGroup
505 ORDER BY bh_drg_group.id
```

```
INSERT INTO bh_cnt_by_sex (id, Sex, cntTot)
      SELECT ml_sex.id, Sex_Desc, count(*) AS cntTot
      FROM bh_patient_episode, ml_sex
510 WHERE bh_patient_episode.Sex_id = ml_sex.id
      GROUP BY Sex_Desc
      ORDER BY ml_sex.id
```

All done.

```
515 This program (020_ExportSummaryTablesLowCounts.py):
```

1. Creates and exports low-aggregate count summary tables of BendigoHealth data in [mods02] to csv

```
520 <dirInBHData> = /opt/repos/bitbucket/mods02/dsBH/dataIn
      <dirOutBHData> = /opt/repos/bitbucket/mods02/dsBH/dataOut
```

```
525 Pre-requisites:
      -----
```

References:

```
530 -----
      http://stackoverflow.com/questions/372885/how-do-i-connect-to-a-mysql-database-in-python
```

```
Dumping [mods02]![bh_cnt_by_admission_type] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/
      bh_cnt_by_admission_typeLowCount.csv
Dumping [mods02]![bh_cnt_by_source_of_admission] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/
      bh_cnt_by_source_of_admissionLowCount.csv
535 Dumping [mods02]![bh_cnt_by_length_of_stay] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/
      bh_cnt_by_length_of_stayLowCount.csv
Dumping [mods02]![bh_cnt_by_separation_method] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/
      bh_cnt_by_separation_methodLowCount.csv
Dumping [mods02]![bh_cnt_by_care_type] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/
      bh_cnt_by_care_typeLowCount.csv
Dumping [mods02]![bh_cnt_by_drg_group] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/
      bh_cnt_by_drg_groupLowCount.csv
Dumping [mods02]![bh_cnt_by_sex] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_cnt_by_sexLowCount.csv
540 All done.
```

This program (021\_DropRecordsWithLowCounts.py):

1. Deletes records from [bh\_patient\_episode] having low aggregates on any of AdmissionType, CareType, DRGGroup, LengthOfStay, SeparationMethod, SourceOfAdmission

```
545
      select distinct X.id from X, bh_cnt_by_X where X.DRGGroup = bh_cnt_by_X.DRGGroup and cntTot < cntMin
      ;
```

cntMin set to 50

```
550
      Example:
```

```
select distinct bh_drg_group.id from bh_drg_group, bh_cnt_by_drg_group where bh_drg_group.DRGGroup =
      bh_cnt_by_drg_group.DRGGroup and cntTot < 50;
```

```
555 <dirInMLData> = /opt/repos/bitbucket/mods02/dsML/dataIn
      <dirOutMLData> = /opt/repos/bitbucket/mods02/dsML/dataOut
```

```
560 Pre-requisites:
      -----
```

565   References:  
-----  
<http://stackoverflow.com/questions/372885/how-do-i-connect-to-a-mysql-database-in-python>

Deleting records from [bh\_patient\_episode] with aggregates < 50 by [DRGGroup\_id]  
570 cnt: 40470

```
DELETE FROM bh_patient_episode WHERE DRGGroup_id IN
(SELECT DISTINCT bh_drg_group.id FROM bh_drg_group, bh_cnt_by_drg_group WHERE bh_drg_group.DRGGroup
= bh_cnt_by_drg_group.DRGGroup AND cntTot < 50);
```

575 cnt: 40391  
Deleting records from [bh\_patient\_episode] with aggregates < 50 by [AdmissionType\_id]  
cnt: 40391

```
DELETE FROM bh_patient_episode WHERE AdmissionType_id IN
(SELECT DISTINCT bh_admission_type.id FROM bh_admission_type, bh_cnt_by_admission_type WHERE
bh_admission_type.AdmissionType = bh_cnt_by_admission_type.AdmissionType AND cntTot < 50);
```

580 cnt: 40391  
Deleting records from [bh\_patient\_episode] with aggregates < 50 by [CareType\_id]  
cnt: 40391

```
DELETE FROM bh_patient_episode WHERE CareType_id IN
(SELECT DISTINCT bh_care_type.id FROM bh_care_type, bh_cnt_by_care_type WHERE bh_care_type.CareType
= bh_cnt_by_care_type.CareType AND cntTot < 50);
```

585 cnt: 40308  
Deleting records from [bh\_patient\_episode] with aggregates < 50 by [LengthOfStay\_id]  
cnt: 40308

```
DELETE FROM bh_patient_episode WHERE LengthOfStay_id IN
(SELECT DISTINCT bh_length_of_stay.id FROM bh_length_of_stay, bh_cnt_by_length_of_stay WHERE
bh_length_of_stay.LengthOfStayCode = bh_cnt_by_length_of_stay.LengthOfStay AND cntTot < 50);
```

590 cnt: 40308  
Deleting records from [bh\_patient\_episode] with aggregates < 50 by [SeparationMethod\_id]  
cnt: 40308

```
DELETE FROM bh_patient_episode WHERE SeparationMethod_id IN
(SELECT DISTINCT bh_separation_method.id FROM bh_separation_method, bh_cnt_by_separation_method
WHERE bh_separation_method.SeparationMethod = bh_cnt_by_separation_method.SeparationMethod AND
cntTot < 50);
```

600 cnt: 40260  
Deleting records from [bh\_patient\_episode] with aggregates < 50 by [SourceOfAdmission\_id]  
cnt: 40260

```
DELETE FROM bh_patient_episode WHERE SourceOfAdmission_id IN
(SELECT DISTINCT bh_source_of_admission.id FROM bh_source_of_admission,
bh_cnt_by_source_of_admission WHERE bh_source_of_admission.SourceOfAdmission =
bh_cnt_by_source_of_admission.SourceOfAdmission AND cntTot < 50);
```

610 cnt: 40237  
All done.

        This program (019\_CreateSummaryTables.py):

615 1. Creates and exports summary tables of BendigoHealth data in [mods02] to csv

```
<dirInMLData> = /opt/repos/bitbucket/mods02/dsML/dataIn
<dirOutMLData> = /opt/repos/bitbucket/mods02/dsML/dataOut
```

620

        Pre-requisites:  
-----

625

        References:  
-----  
<http://stackoverflow.com/questions/372885/how-do-i-connect-to-a-mysql-database-in-python>

```

630 Creating tables
INSERT INTO bh_cnt_by_admission_type (id, AdmissionType, cntTot)
  SELECT bh_admission_type.id, AdmissionType, count(*) AS cntTot
  FROM bh_patient_episode, bh_admission_type
  WHERE bh_patient_episode.AdmissionType_id = bh_admission_type.id
635 GROUP BY AdmissionType
  ORDER BY bh_admission_type.id

INSERT INTO bh_cnt_by_source_of_admission (id, SourceOfAdmission, cntTot)
  SELECT bh_source_of_admission.id, SourceOfAdmission, count(*) AS cntTot
640 FROM bh_patient_episode, bh_source_of_admission
  WHERE bh_patient_episode.SourceOfAdmission_id = bh_source_of_admission.id
  GROUP BY SourceOfAdmission
  ORDER BY bh_source_of_admission.id

645 INSERT INTO bh_cnt_by_length_of_stay (id, LengthOfStay, LengthOfStayDescription, cntTot)
  SELECT bh_length_of_stay.id, LengthOfStayCode, LengthOfStayDescription, count(*) AS cntTot
  FROM bh_patient_episode, bh_length_of_stay
  WHERE bh_patient_episode.LengthOfStay_id = bh_length_of_stay.id
  GROUP BY LengthOfStayCode
650 ORDER BY bh_length_of_stay.id

INSERT INTO bh_cnt_by_separation_method (id, SeparationMethod, SeparationMethodDescription, cntTot)
  SELECT bh_separation_method.id, SeparationMethod, SeparationMethodDescription, count(*) AS cntTot
  FROM bh_patient_episode, bh_separation_method
655 WHERE bh_patient_episode.SeparationMethod_id = bh_separation_method.id
  GROUP BY SeparationMethod
  ORDER BY bh_separation_method.id

INSERT INTO bh_cnt_by_care_type (id, CareType, CareTypeDescription, cntTot)
660 SELECT bh_care_type.id, CareType, CareTypeDescription, count(*) AS cntTot
  FROM bh_patient_episode, bh_care_type
  WHERE bh_patient_episode.CareType_id = bh_care_type.id
  GROUP BY CareType
  ORDER BY bh_care_type.id
665

INSERT INTO bh_cnt_by_drg_group (id, DRGGroup, cntTot)
  SELECT bh_drg_group.id, DRGGroup, count(*) AS cntTot
  FROM bh_patient_episode, bh_drg_group
  WHERE bh_patient_episode.DRGGroup_id = bh_drg_group.id
670 GROUP BY DRGGroup
  ORDER BY bh_drg_group.id

INSERT INTO bh_cnt_by_sex (id, Sex, cntTot)
  SELECT ml_sex.id, Sex_Desc, count(*) AS cntTot
675 FROM bh_patient_episode, ml_sex
  WHERE bh_patient_episode.Sex_id = ml_sex.id
  GROUP BY Sex_Desc
  ORDER BY ml_sex.id

680 All done.
All done. See ../doc/csv/bh_schemaBH.csv for output

This program (025_ExportCSV_BH.py):

685 1. Exports all BH tables in [mods02] to csv
   [mods02]![X] --> X.csv

   X =

690 <dirInMLData> = /opt/repos/bitbucket/mods02/dsML/dataIn
   <dirOutMLData> = /opt/repos/bitbucket/mods02/dsML/dataOut

695 Pre-requisites:
   -----

References:
700 -----
   http://stackoverflow.com/questions/372885/how-do-i-connect-to-a-mysql-database-in-python

```



```

Dumping [mods02]![bh_abs] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_abs.csv
Dumping [mods02]![m1_sex] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/m1_sex.csv
705 Dumping [mods02]![bh_drg_group] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_drg_group.csv
Dumping [mods02]![bh_mdc] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_mdc.csv
Dumping [mods02]![bh_example_query] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_example_query.csv
Dumping [mods02]![bh_abs_tex] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_abs_tex.csv
Dumping [mods02]![bh_admission_type] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_admission_type.csv
710 Dumping [mods02]![bh_source_of_admission] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/
    bh_source_of_admission.csv
Dumping [mods02]![bh_length_of_stay] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_length_of_stay.csv
Dumping [mods02]![bh_separation_method] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/
    bh_separation_method.csv
Dumping [mods02]![bh_care_type] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_care_type.csv
Dumping to /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_patient_episode.csv
715 mysqldump: Couldn't find table: "bh_main"
[mods_02]![bh_*] exported as bh_all.sql to /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_all.sql
Transfer to arrow1? [y/n] All done.

```

720 This program (027\_ExportSummaryTables.py):

1. Creates and exports count summary tables of BendigoHealth data in [mods02] to csv

```

725 <dirInBHData> = /opt/repos/bitbucket/mods02/dsBH/dataIn
<dirOutBHData> = /opt/repos/bitbucket/mods02/dsBH/dataOut

```

NB: needs to be run after 021\_DropRecordsWithLowCounts.py

730 Pre-requisites:  
 -----

735 References:  
 -----

<http://stackoverflow.com/questions/372885/how-do-i-connect-to-a-mysql-database-in-python>

```

Dumping [mods02]![bh_cnt_by_admission_type] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/
    bh_cnt_by_admission_type.csv
Dumping [mods02]![bh_cnt_by_source_of_admission] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/
    bh_cnt_by_source_of_admission.csv
740 Dumping [mods02]![bh_cnt_by_length_of_stay] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/
    bh_cnt_by_length_of_stay.csv
Dumping [mods02]![bh_cnt_by_separation_method] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/
    bh_cnt_by_separation_method.csv
Dumping [mods02]![bh_cnt_by_care_type] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_cnt_by_care_type
    .csv
Dumping [mods02]![bh_cnt_by_drg_group] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_cnt_by_drg_group
    .csv
Dumping [mods02]![bh_cnt_by_sex] -> /opt/repos/bitbucket/mods02/dsBH/dataOut/bh_cnt_by_sex.csv
745 All done.

```