



Brazilian RWD ecosystem

Current experience and perspectives

André Ballalai

Head of Market Access, HTA and RWD

IQVIA, Latin America



Brazilian RWD ecosystem is composed by a set of databases with distinct formats and availability

Brazilian RWD Ecosystem

	Drug Consumption	Medical Claims	LPD Claims (RLK)	EHR
Public Setting	<p><i>Drug consumption data collected from wholesalers</i> <i>Institutional level data (CNPJ)</i></p> <p><u>Source:</u> Tenders plus Hospital Consumption <u>Coverage:</u> Varies from 50~90% depending on market <u>Limitations:</u> Direct sales to wholesale</p>	<p><i>Transactions between payers and providers</i> <i>Procedure centric data</i></p> <p><u>Source:</u> DSUS <u>Coverage:</u> 75% of population <u>Limitation:</u> Outpatient/OOP</p>	<p><i>Integration of multiple claims database</i> <i>Patient centric data</i></p> <p><u>Source:</u> LPD DSUS <u>Coverage:</u> 75% of population <u>Limitation:</u> Outpatient/OOP</p>	<p><i>Patient records information collected within HC providers</i></p> <p><u>Source:</u> Public Hospitals <u>Coverage:</u> Varies <u>Limitation:</u> Availability of EMR Need of EC approval</p>
Private Setting	<p><u>Source:</u> Hospital Consumption <u>Coverage:</u> Varies from 50~90% depending on market <u>Limitations:</u> Direct sales</p>	<p><u>Source:</u> ANS and/or Outsourcing Co.s <u>Coverage:</u> 25% of population <u>Limitation:</u> ANS data is still underdevelopment Sample size depends on partner chosen</p>	<p><u>Source:</u> Outsourcing Co's and HMOs <u>Coverage:</u> Depends on HMO sample <u>Limitation:</u> Institutional level data is not available Access to HMOs data needs previous negotiation.</p>	<p><u>Source:</u> Private Hospitals <u>Coverage:</u> Varies <u>Limitation:</u> Availability of EMR Need of EC approval</p>



RWD availability in Brazil mainly rely on public setting claims information

Where we are



Main Events

- DataSUS is a medical claims information system
- It is the official administrative Brazilian MOH used to reimburse public setting providers within public setting (~70% population)
- It is a fragmented system of databases

Main Events

- DataSUS data started to become public available through transparency of information laws
- An increasing number of publications started to appear based on DataSUS information
- Fragmentation of data was still an issue






Main Events

- (2011) Integration of datasets using record linkage methods
- (2015) Longitudinal patient analysis and standardization of procedures
- **(2018) Start of activities to convert DataSUS to CDM**
- **(2019) DSUS Ambulatory information system converted to CDM**



At this point main efforts is to convert ambulatory and hospital datasets to CDM

DataSUS Main Sources of Information

		Event	Data Collection	Usage
	SIM	Mortality info system <ul style="list-style-type: none">• <i>Death cases</i>	<ul style="list-style-type: none">• Death Certificate	<ul style="list-style-type: none">• Mortality Studies• Death surveillance (infants, mothers, etc)
	SINASC	Live birth info system <ul style="list-style-type: none">• <i>Birth cases</i>	<ul style="list-style-type: none">• Live birth certificate	<ul style="list-style-type: none">• Child health monitoring• At risk child surveillance
	SINAN	Infirmity under notification Info System <ul style="list-style-type: none">• Notification of cases (Dengue, HCV, Malaria and others)	<ul style="list-style-type: none">• Notification formulary• Investigative formulary	<ul style="list-style-type: none">• Tracking of infirmity under notification• Outbreaks, epidemics
	SIH	Hospital information system <ul style="list-style-type: none">• Admissions, inpatient information, surgeries	<ul style="list-style-type: none">• Hospital admission authorization (AIH)	<ul style="list-style-type: none">• Hospital morbidity, cost management, in patient admission, surgeries and etc
	SIA	Ambulatory production info system <ul style="list-style-type: none">• Drug consumption	<ul style="list-style-type: none">• High complexity procedure authorization (APAC)• Ambulatory production bulletin (BPA)	<ul style="list-style-type: none">• Drug consumption, Oncology (CTx/RTx), Dialysis, Exams, psychiatry and others



DSUS covers 75% of the Brazilian population having around 100mi patients within datasets

DSUS Fact Sheet

General Database Information	Data Collection: <u>Medical claims</u> from the information system of the Brazilian MOH, which is the backbone of hospital and high complexity/cost management system of the government. IQVIA developed a set of integration and linking methodologies to put all assets together and create a longitudinal asset combining SIA (ambulatory) and SIH (hospital)	Patient Type: <u>Inpatient & outpatient hospitalizations</u>
	Data Coverage: <u>~70%-75% of the population (150M patients) is under this MOH hospital setting</u>	History / Update Frequency: <u>2008-Present / Quarterly updates with a 3-5 month lag</u>
	Lowest Level Reporting Granularity: Up to hospital-level	Data Access (transaction-level or aggregated): Raw and/or aggregated data
Key Applications	Treatment pathway, patient journey, treatment effectiveness, incidence / prevalence, patient profile, pharmacovigilance studies, risk management studies (PASS), burden of illness, rare diseases, HTA submission, HEOR, predictive analytics, ...	
Key Information	Basic: Age, gender, ethnicity, location	Diagnosis / Procedures / Lab: Diagnosis (ICD10-CM, mandatory for claims approval)
	Procedures: Costs, resource utilization and a couple of funding/administrative info	Treatment facilities: Hospital / provider name, legal entity code, geolocalization on ZIP code level
	Hospital facilities: Equipment, physicians affiliation, #beds, ...	Others: Mortality and new born data, oncology dataset (standard information plus chemo regimen details and a couple of tumor info (disease staging, histopathology, ...)), nephrology / dialysis, complex Dx / Exams, psychologic assistance, ...
Possibility to request additional information	Possible to enrich DSUS with other data assets available in Brazil: <ul style="list-style-type: none"> - Hospital Info: type of hospital, number of beds, equipment availability and number (MRI, tomography, PCI, etc), number of physicians per specialty and names with formal labor affiliation with the institution - Statistics Bureau (IBGE) to support epidemiologic evaluations in a municipality / ZIP code level (depending on the availability) - Private Setting (HMOs) Currently integrating DSUS assets to the private setting information datasets and to testing linking methods to incorporate private claims sources in ad hoc basis	

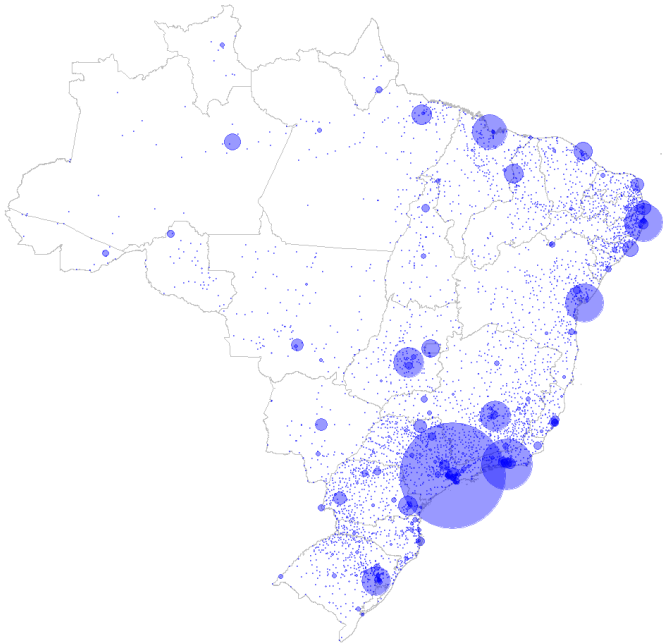


Through CDM conversion a set of analysis will be possible to be performed using OHDSI methods

Example of Analysis using LPD DSUS

Geographic Distribution of AIS/MI Patients

Based on patient residency ZIP code



An Assessment Of Correlation Between Mortality And Distance From Patient's Residence To Interventional Center In Percutaneous Coronary Intervention In Brazil

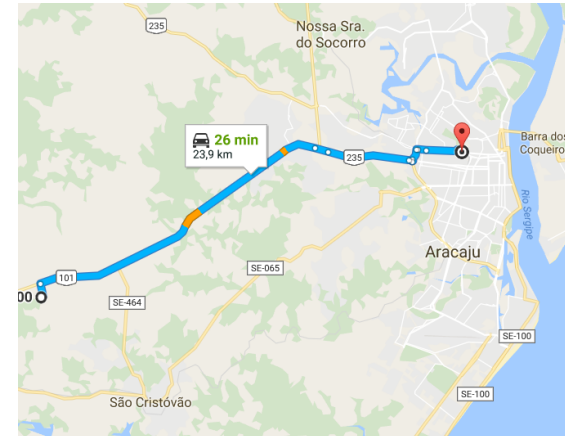
YK Matsumoto, DF Campos, RP Rosim, AS Duva, WA Hirth, Ballalai Ferraz, AF, DM Braille

Open Archive PlumX Metrics

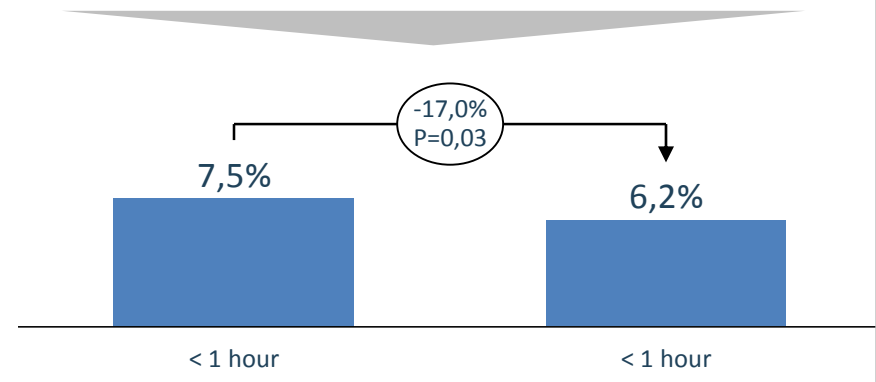
DOI: <https://doi.org/10.1016/j.jval.2017.08.2836>



In-hospital mortality by time of displacement



Patient living in São Cristóvão (SE), and was treated in the municipal hospital of the north region of Aracaju





For additional information, do not hesitate to contact us

André Ballalai

Associate Principal

Head of Market Access, HTA and RWD

andre.ballalai@IQVIA.com

+55 11 99871-3798

