

Utilization and Obstacles of Real World Data within Japan and Future Possibilities



Masaki Nakamura

October 2019

Medical Data Vision Co., Ltd.



Today`s Topic

- **Medical Data Available in Japan**
- **About MDV Database**
- **Issues When Utilizing Data**
- **Current Status on Utilization for PMS**
- **Future Possibilities**

- **Medical Data Available in Japan**
- About MDV Database
- Issues When Utilizing Data
- Current Status on Utilization for PMS
- Future Possibilities

Medical Data Available in Japan

- Publically available data such as NDB
 - Registry data
 - Real Word Data (RWD)
- Private company databases, MID-NET, etc.

Medical Data Available in Japan

- Publically available data such as NDB
- Registry data
- **Real Word Data (RWD)**
Private company databases, MID-NET, etc.



Medical Data Available in Japan

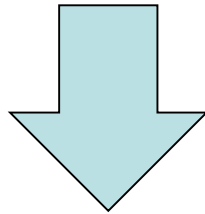
- Hospital
- Health Insurance Provide
- Pharmacy

Medical Data Available in Japan

- **Hospital(MDV)**
- Health Insurance Provide
- Pharmacy

Medical Data Available in Japan

- **Hospital(MDV)**
- Health Insurance Provide
- Pharmacy



**All of these data has its advantages and disadvantages
It is vital to decide which database to utilize based on your
specific research the question**



Today`s Topic

- Medical Data Available in Japan
- **About MDV Database**
- Issues When Utilizing Data
- Current Status on Utilization for PMS
- Future Possibilities

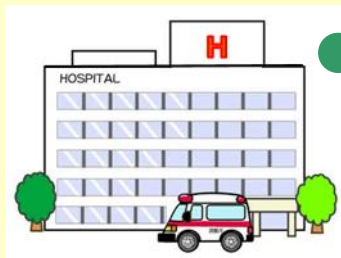
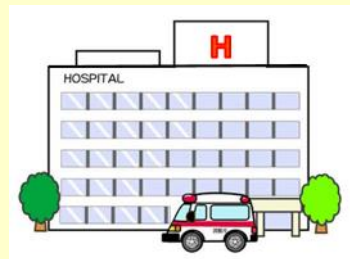
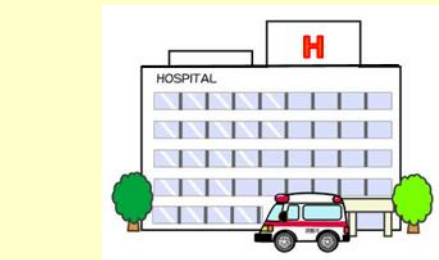
Company Profile

C o m p a n y N a m e	Medical Data Vision Co.,Ltd.
E s t a b l i s h e d	August 20, 2003
L o c a t i o n	 Headquarters 10F Sumitomo Fudosan Kanda Bldg., 7 Kanda Mitoshiro-cho, Chiyoda-ku, Tokyo, Japan, 101-0053 TEL:+81-3-5283-6911 FAX:+81-3-5283-6811
N u m b e r o f E m p l o y e e s	Total of 220 (as of end of December 2018)
C a p i t a l	992,661,739 JPY (As of end of December 2018)
P r e s i d e n t a n d C E O	Hiroyuki Iwasaki
M a i n B u s i n e s s F i e l d s	<ol style="list-style-type: none">1. Develop, deal, market and maintain medical integrated systems2. Conducting analysis, research, and consult from medical data3. Conduct financial consultations for medical institutions (hospitals)4. Operates and provide utilized medical data5. Plan, design, develop, and administrate portal-site6. Private employment service under the regulation of the Employment Security Act (13-コ-302515)
C a t e g o r y o f I n d u s t r y / S e c u r i t y C o d e	Information & Communication Tokyo Stock Exchange First Section (Code:3902) (Listed in November 24 th , 2016)

Flow of Data

Data Network Service

Business Support System
Introduced to around 800 facilities.



DPC data
Administrative Data

Benchmark



Data Utilization Service

MDV analyzer
Ad Hoc Research Service
Business accounts with 70 companies.

Pharmaceutical
Companies

Medical Device
Manufacturers

Academia

Research
Institutions

Analysis on
prescription of
drugs, scale of
diseases, and
etc.

*We received data from consent given hospitals

MDV Database

Established on Japan's largest administrative database,
our service provides strong support for
pharmacovigilance and epidemiology studies.

Facilities: 389

Patients: 28.77 million

All acute hospitals (DPC hospitals)

※Contain 186 cancer therapeutic facilities

(Register and specify on MHLW's list)

※Covering approximately 22% of acute hospitals in Japan

(As of end of September 2019)

【Description of Facilities】

Items	Total
Number of Faculties	389 Hospitals
Number of Beds	138,553 Beds
Average of Number of Beds	356 Beds

Number of Beds	Number of Hospitals
20-199	92
200-499	227
500-	70
Total	389

【Description of Patients】

Number of Patients (April 2008 ~ July 2019)	
Total	28.77 Million
0-14 Years Old	14.5%
15-64 Years Old	50.8%
Over 65 Years Old	34.7%

*The number of hospitals changes with observation periods.

【Reference】:Distribution by Age and Gender

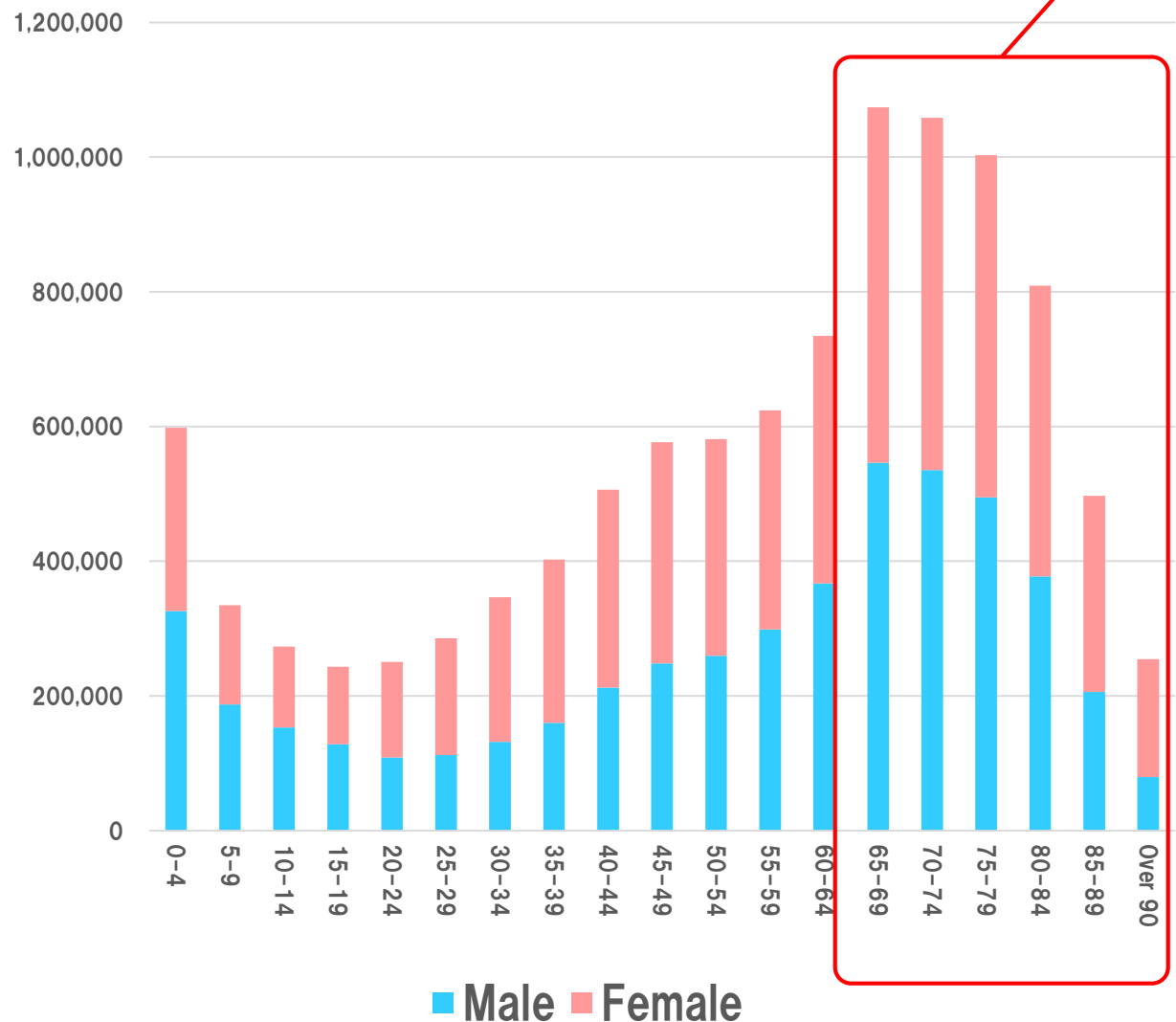
Period:January 2018~December 2018 (1 Year)

Patient Population: **10.45** Million

Age	Male	Female	Total	Ratio
0-4	326,234	271,863	598,097	5.72%
5-9	187,357	147,262	334,619	3.20%
10-14	153,322	119,789	273,111	2.61%
15-19	127,996	115,437	243,433	2.33%
20-24	108,479	141,837	250,316	2.40%
25-29	112,077	173,455	285,532	2.73%
30-34	131,984	214,407	346,391	3.31%
35-39	160,110	242,345	402,455	3.85%
40-44	212,433	293,639	506,072	4.84%
45-49	248,054	328,617	576,671	5.52%
50-54	259,633	321,615	581,248	5.56%
55-59	298,667	325,369	624,036	5.97%
60-64	366,798	367,628	734,426	7.03%
65-69	546,086	527,512	1,073,598	10.27%
70-74	535,053	523,202	1,058,255	10.13%
75-79	494,631	508,173	1,002,804	9.59%
80-84	377,273	431,745	809,018	7.74%
85-89	206,119	290,725	496,844	4.75%
Over 90	79,327	175,321	254,648	2.44%
Total	4,931,633	5,519,941	10,451,574	100.00%

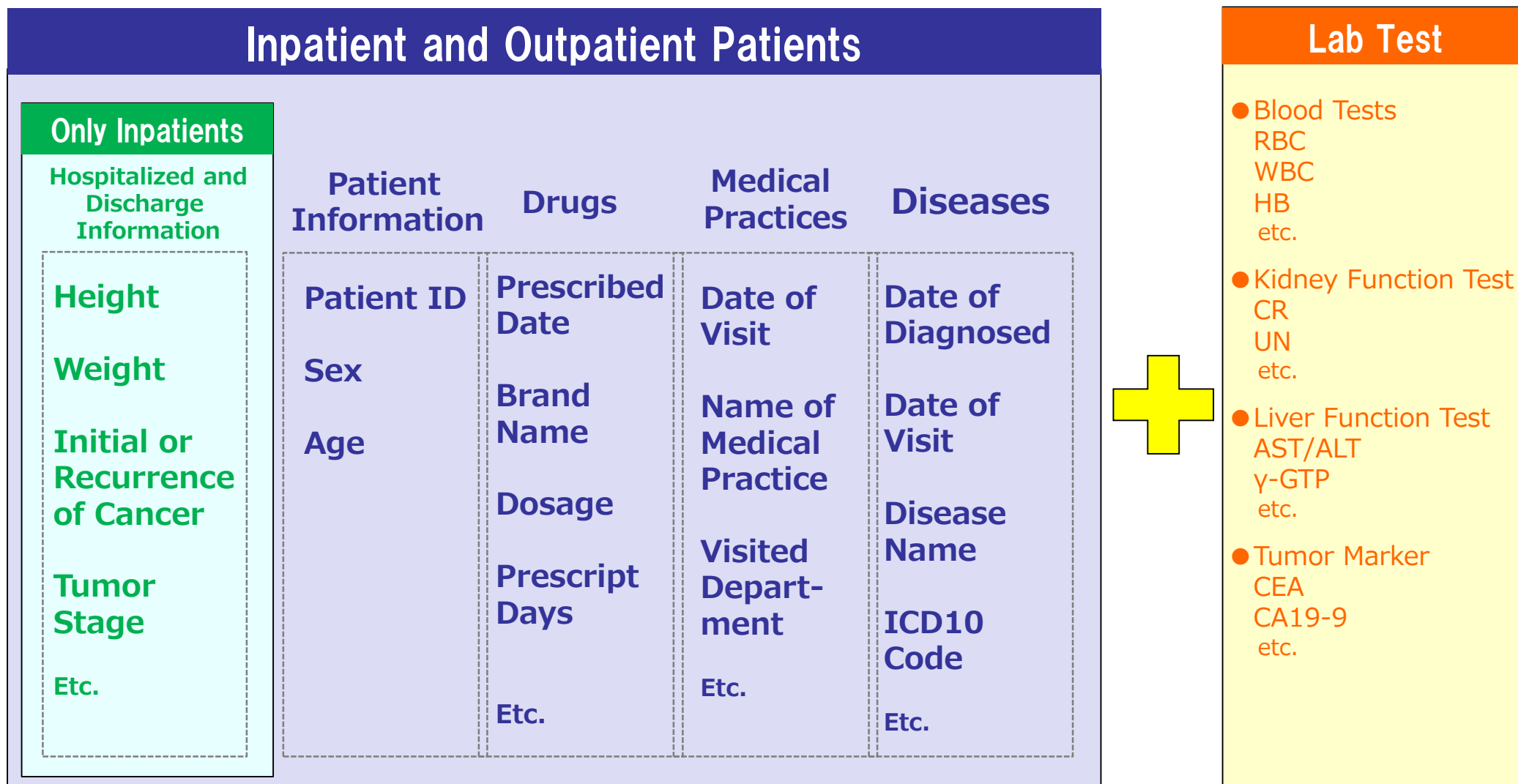
*As of February 26th 2019

Distribution of Age and Gender



Data Items(Variables)

We are able to analysis inpatient and outpatient data as well as **lab test results (blood test)** depending on your needs.



※Number of hospitals providing with lab test results are limited.

Why is Our Database Selected?

✓ Large Scale Database

- Covering approximately 22 percent of acute hospitals
- Over 1 million health insurance claims per month
- Able to analysis patients with rare diseases, others include medication and disease analysis

✓ Overwhelming Data of Elderly Patients

- Collected data directly from hospitals, so *it holds every data of all insurances
- Can analyze diseases common in elderly population based on real based numbers

✓ Detailed Information (Day by day data)

- Posses all inpatient and outpatient data on daily bases
- From hospitalized and discharge information, if allows to analyze height, weight, tumor stage, and severity of each patient`s diseases
- Analyze the measurement of effectiveness through lab test results
- Analyze information based on the bundled payment

✓ Updated Each Month

- Upgraded each month
- Able to analyze up until two month prier of this month

* Refer to the next slide for reference.

Data Image①:

Details of Daily Medical Treatment and Diagnosed Disease

Patient ID	Sex	Age	ICD10	Disease Name	Disease Code	Doubt	Date	In Out	Department	Medial Practice Medication	Total Amount Per Day	Days	Lab Test Result
77777	M	70	E11	Type II diabetes mellitus	2500015	Fix	2013/2/13						
77777	M	71					2013/12/11	Out	Internal	Tradjenta Tablets 5mg	1	28	
77777	M	71					2013/12/11			HbA1c(NGSP)			8.3
77777	M	71					2014/1/8	Out	Internal	Amaryl O. 5mg Tablets	1	28	
77777	M	71					2014/1/8	Out	Internal	Tradjenta Tablets 5mg	1	28	
77777	M	71					2014/1/8			HbA1c(NGSP)			8.5
77777	M	71					2014/2/5	Out	Internal	Amaryl O. 5mg Tablets	1	28	
77777	M	71					2014/2/5	Out	Internal	Tradjenta Tablets 5mg	1	28	
77777	M	71					2014/2/5			HbA1c(NGSP)			8.2
77777	M	71					2014/3/5	Out	Internal	Amaryl O. 5mg Tablets	1	56	
77777	M	71					2014/3/5	Out	Internal	Tradjenta Tablets 5mg	1	56	
77777	M	71					2014/3/5			HbA1c(NGSP)			8.1
77777	M	71					2014/4/30	Out	Internal	Amaryl O. 5mg Tablets	1	28	
77777	M	71					2014/4/30	Out	Internal	Tradjenta Tablets 5mg	1	28	
77777	M	71					2014/4/30			HbA1c(NGSP)			8.4
77777	M	72					2014/5/28	Out	Internal	Amaryl O. 5mg Tablets	1	28	
77777	M	72					2014/5/28	Out	Internal	Tradjenta Tablets 5mg	1	28	
77777	M	72					2014/5/28	Out	Internal	Suglat Tablets 50mg	1	14	
77777	M	72					2014/5/28			HbA1c(NGSP)			8.5
77777	M	72					2014/6/25	Out	Internal	Amaryl O. 5mg Tablets	1	28	
77777	M	72					2014/6/25	Out	Internal	Tradjenta Tablets 5mg	1	28	
77777	M	72					2014/6/25	Out	Internal	Suglat Tablets 50mg	1	14	
77777	M	72					2014/6/25			HbA1c(NGSP)			8.1
77777	M	72					2014/7/23	Out	Internal	Amaryl O. 5mg Tablets	1	35	
77777	M	72					2014/7/23	Out	Internal	Tradjenta Tablets 5mg	1	35	
77777	M	72					2014/7/23	Out	Internal	Suglat Tablets 50mg	1	14	
77777	M	72					2014/7/23			HbA1c(NGSP)			7.7
77777	M	72					2014/8/27	Out	Internal	Amaryl O. 5mg Tablets	1	28	
77777	M	72					2014/8/27	Out	Internal	Tradjenta Tablets 5mg	1	28	
77777	M	72					2014/8/27	Out	Internal	Suglat Tablets 50mg	1	14	
77777	M	72					2014/8/27			HbA1c(NGSP)			7.8
							.						

* There are items only based on antidiabetic drug and HbA1c results.

* Data is in Japanese.

Data Image ②: Hospitalized and Discharged Information

Able to obtain patient's height, weight, TNM staging system, NYHA cardiac failure classification, and Child-Pugh score.

July 2012 Format

様式1 File Item ①		様式1 File Item ②		様式1 File Item ③	
Patient ID	123456	Main disease name	Recurrent Rectal Cancer	Consciousness at the time of hospitalization on Japan Coma Scale	0
Data Month	2010/2/1	ICD10 Code	C20	Consciousness at the time of discharge on Japan Coma Scale	
Department Code	110 (Surgical)	Disease being the reason for hospitalization	Recurrent Rectal Cancer	ADL Score at the time of hospitalization	2312132222
Total Clinical Data	0	ICD10 Code	C20	ADL Score at the time of discharge	0
Sex	1	Disease which put most health resources	Recurrent Rectal Cancer	Initial, recurrence of cancer	1
Age	59	ICD10 Code	C20	UICC staging (T)	T3
Main Purpose of Hospitalization	4	Disease which put second most health resources		UICC staging (N)	N2
Participate of Clinical Trial	0	ICD10 Code		UICC staging (M)	M1
Hospitalized date	2010/2/10	Comorbidities through hospitalization 1	Obstructive jaundice	Instructions based on agreement of cancer	
Discharge date	2010/3/12	ICD10 Code	K831	Hospitalized modified Rankin Scale	0
Transfer of Department	0	Comorbidities through hospitalization 2		Discharged modified Rankin Scale	0
Route of hospitalization	2	Comorbidities after hospitalization 1	Cancer pain	Onset of apoplexy	0000/0/0
Introduction from other hospitals	0	ICD10 Code	R522	Hugh-Jones Score	0
Came from hospital's clinical care	1	Comorbidities after hospitalization 2	Cardiac insufficiency	NYHA cardiac failure classification	0
Planned or Emergency Hospitalization	1	ICD10 Code	I509	Hospitalization due to angina pectoris, chronic ischemic heart disease(050050)	0
Carried by Ambulance	0	Comorbidities after hospitalization 3	Gastric ulcer	Hospitalization due to myocardial infarction (050030, 050040) severity	0
Facility after discharge	5	ICD10 Code	K259	Severity of pneumonia	0
Discharge summary	6	Comorbidities after hospitalization 4	Duodenal ulcer	Child-Pugh Score	
Death within 24 hours of hospitalization	0	ICD10 Code	K269	Severity stage of acute pancreatitis	0
Last date of discharge	2009/2/13	Operation 1	percutaneous bile duct drainage	Burn index	0
Hospitalized due to same disease	0	Blank Space		Other severity stage and name	0
Hospitalization to general wards	1	Point Code	K682-2	Other severity stage, stage number or index	0
Hospitalization to mental wards	0	Counts of operation	1	Pregnancy week at the time of hospitalization	0
Hospitalization to other wards	0	Side of operation	0	Shape of hospitalization under Law Related to Mental Health and Welfare of the Person with Mental Disorder	0
Start date of discharge summary	2010/2/10	Date of operation	2010/11/11	Days of isolation under Law Related to Mental Health and Welfare of the Person with Mental Disorder	0
End date of discharge summary	2010/3/1	Anesthesia	5	Days of physical restraint under Law Related to Mental Health and Welfare of the Person with Mental Disorder	0
		Pregnancy	0	GAF Scale at the time of hospitalization	0
		Weight at birth	0	Additional Disease Code	0
		Pregnancy week at the time of birth	0	Chemotherapy	0
		Height	165	Usage of Temozolomide	0
		Weight	48		
		Smoking Index	800		

* Data is in Japanese.

Usage of MDV Data

- Sales , Marketing
- Creating Articles (MA)
- **PMS**
- **Clinical Research**



Today`s Topic

- Medical Data Available in Japan
- About MDV Database
- **Issues When Utilizing Data**
- Current Status on Utilization for PMS
- Future Possibilities



Issues When Utilizing Data

- Organization to conduct research
- Programing errors within internal words
- Data management

Issues When Utilizing Data

- **Organization to conduct research**
- **Programing errors within internal words**
- **Data management**



Issues When Utilizing Data

- Organization to conduct research
- **Programing errors within internal words**
- Data management



Issues When Utilizing Data

- Organization to conduct research
- Programing errors within internal words
- **Data management**

➤ Works within MDV

1. Creating data
2. Extract data for delivery
3. Compress data with password
4. Delivery of deliverable

➤ Works for Pharmaceutical Company

5. Receiving and unzipping data
6. Import data
7. Start analysis

➤ Works within MDV

1. Creating data
2. Extract data for delivery
3. Compress data with password
4. Delivery of deliverable

➤ Works for Pharmaceutical Company

5. Receiving and unzipping data
6. Import data
7. Start analysis



**Building a process
from 1 to 7!**



Current Status on Utilization for PMS

There are many request to conduct PMS studies from various clients.

Currently, the following 2 are something which MDV is doing.

There are many request to conduct PMS studies from various clients.

Currently, the following 2 are something which MDV is doing.

1. Validation study

There are many request to conduct PMS studies from various clients.

Currently, the following 2 are something which MDV is doing.

- 1. Validation study**
- 2. Building quality assurance related documents**



Today`s Topic

- Medical Data Available in Japan
- About MDV Database
- Issues When Utilizing Data
- Current Status on Utilization for PMS
- **Future Possibilities**

Currently, MDV possess mainly de-identified electronic health claims and DPC data.

Currently, MDV possess mainly de-identified electronic health claims and DPC data.

➤ **Studies with cooperation with hospitals
(including validation)**

It is possible for example to build independent database based off of specified clinics by pharmaceutical company

Currently, MDV possess mainly de-identified electronic health claims and DPC data.

- **Studies with cooperation with hospitals
(including validation)**

It is possible for example to build independent database based off of specified clinics by pharmaceutical company

- **Data obtained from individuals under their consent**

PHR Service Provided by MDV(カルテコ)

カルテコ

ガイド ログイン 会員登録 会員情報 ログアウト

診療レポート

登録日: 2015年2月1日 データ更新日: 2015年2月1日

医療機関情報

医療機関名: MDV病院
住所: 東京都千代田区神田東土代町7番地 住友不動産神田ビル10階
電話番号: 03-5263-6911

症状リスト

何の症状でお困りになって受診されましたか?
病歴ボタンからあなたの症状を入れてください

診断名

2次糖尿病 糖尿病性腎症

検査結果

検査結果を見る

検査名	基準値	結果値	単位	異常フラグ
HbA1c	4.6 - 6.2	9.5	%	高
eGFR	80 - 110	13		低

診療中に使われた薬 (投薬)

- キングリー通利剤 2錠
- 生理食塩水 20mL

処置・手術

- 人工腎臓 (慢性維持透析) (4時間以上5時間未満)
- 人工腎臓 (導入期) 加算

処方された薬
(後発品に切り替えた場合などは、実際に受けた薬と異なる場合があります。)

- アサリール1mg錠
- シヤメビラ錠50mg
- スーグワ錠50mg

医師のメッセージ

できるだけ安静にして、処方した薬でしばらく様子を見て下さい。

メモ ※個人記録用です。医師にメモ内容を送信することはできません。

気になったことや不安に感じたことなどを記録することができます

編集

➤ Present

All electronic health record data within hospitals are input, then patients are able to refer their electronic record contents (including image diagnosis) through an application which we provide

PHR Service Provided by MDV(カルテコ)

カルテコ

ガイド ログイン 会員登録 会員登録 ログアウト

診療レポート

登録日: 2015年2月1日 データ更新日: 2015年2月1日

医療機関情報

医療機関名: MDV病院
住所: 東京都千代田区神田美土代町7番地 住友不動産神田ビル10階
電話番号: 03-5263-6911

症状リスト

何の症状でお困りになって登録されましたか?
病歴ボタンからあなたの症状を入力してください

病名

2 型糖尿病 糖尿病性腎症

検査結果

検査結果を見る

検査名	基準値	結果	単位	異常フラグ
HbA1c	4.6 - 6.2	9.5	%	高
eGFR	80 - 110	13		低

診療中に使われた薬 (投薬)

- キングリー通利剤 2 錠
- 生理食塩水 2.0 mL

処置・手術

- 人工腎臓 (慢性維持透析) (4 時間以上 5 時間未満)
- 人工腎臓 (導入期) 加算

処方された薬
(後発品に切り替えた場合などは、実際に受け取った薬と異なる場合があります。)

- アサリール 1 mg 錠
- シヤヌピダ錠 5.0 mg
- スーグワ錠 5.0 mg

医師のメッセージ

できるだけ安静にして、処方した薬でしばらく様子を見て下さい。

メモ
※個人記録用です。医師にメモの内容を送信することはできません。

気になったことや不安に感じたことなどを記録することができます

編集

➤ Present

All electronic health record data within hospitals are input, then patients are able to refer their electronic record contents (including image diagnosis) through an application which we provide

➤ Future

Do further analysis combining patients` PHR data from specified target patient population

※Will be limited to consented patients` data



Medical Data Vision Co., Ltd.

10F Sumitomo Fudosan Kanda Bldg., 7 Kanda Mitoshiro-cho,
Chiyoda-ku, Tokyo 101-0053
TEL 81-3-5280-9571 FAX 81-3-5283-6811

【For Information, Contact below】

ebm_sales@mdv.co.jp