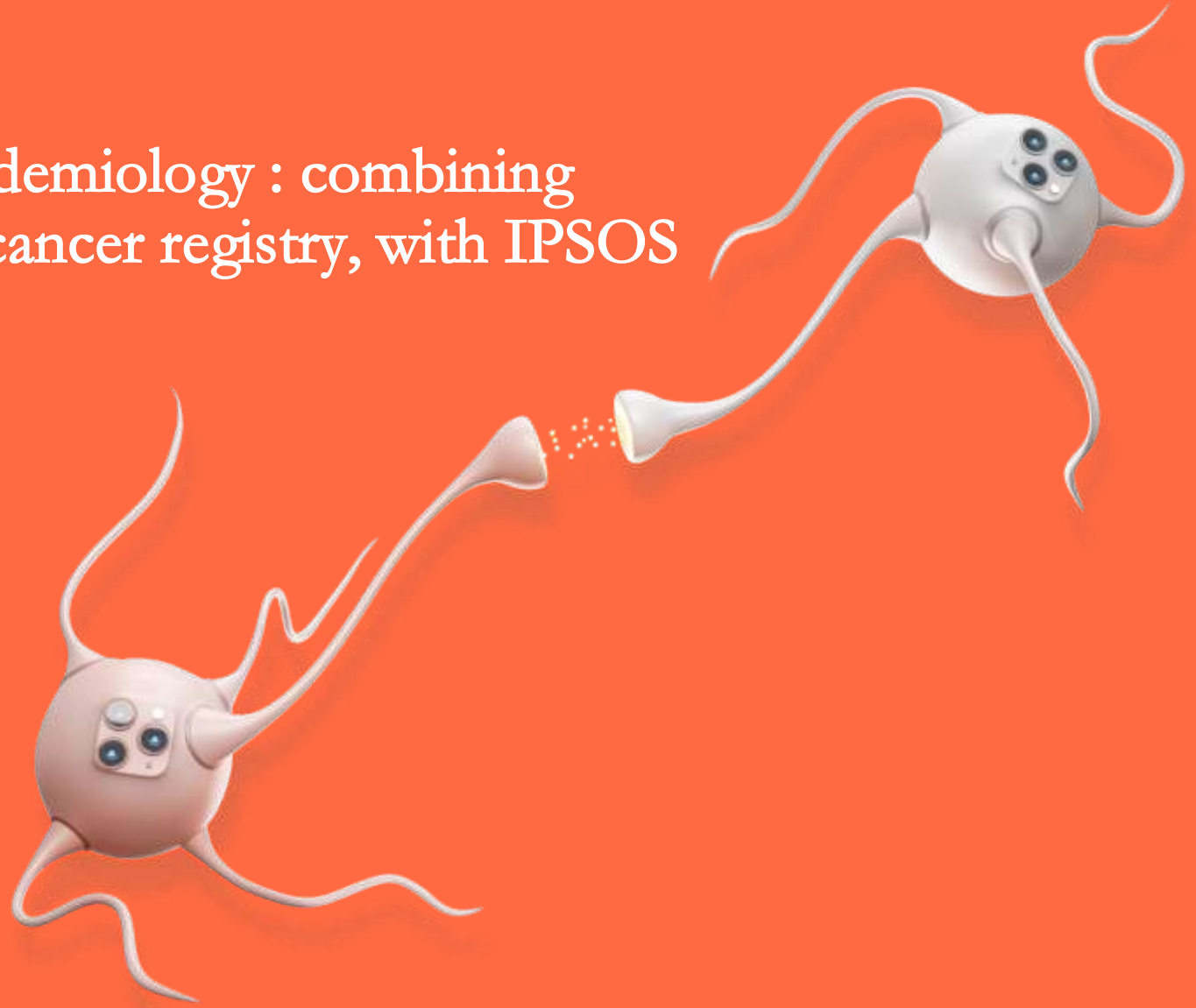


Improving China cancer epidemiology : combining
market research and public cancer registry, with IPSOS
Healthcare and L.E.K

November 2021

CphMRa conference 2021



In partnership with 

Let me introduce myself



- Full career in Market Research and Data Management for over 20 years.
- Graduate of leading French ESSEC Business School
- Worked from Agency to Industry leaders, from FMCG to Pharmaceutical (Rx/OTC), in France, Switzerland, Japan and China, from country affiliate to Regional or Global Headquarters.
- Extensive knowledge of Pharmaceutical Market Research data sources

Volunteer Analytics Lead of Solidarity Covid – Expats in China, Daily Analysis live from Shanghai on Covid-19 China and worldwide public data.

<https://deeperin19coviddata.wordpress.com/>

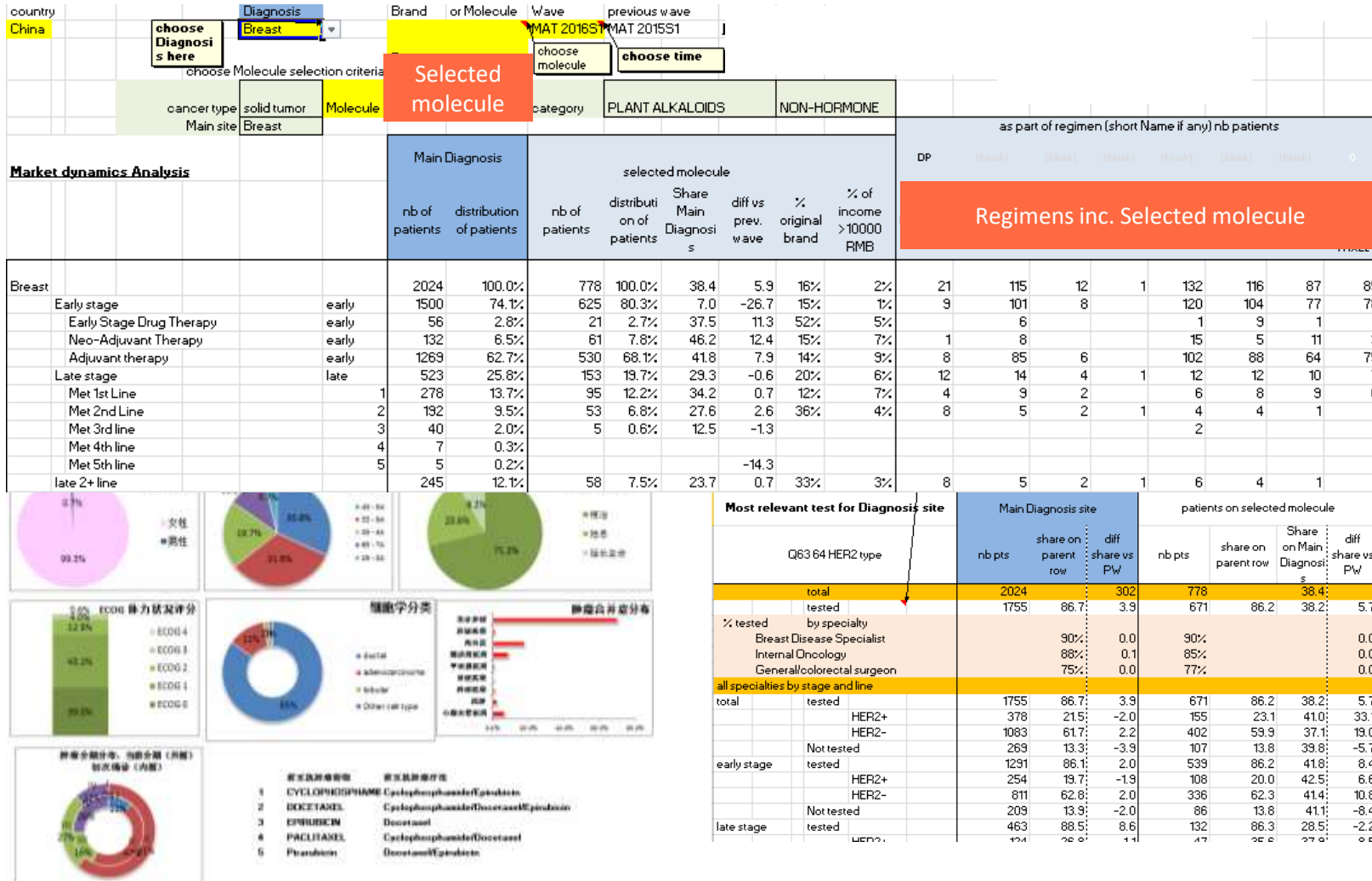
My career in a matrix...

Italic : Consultancy assignment

	France (age 3-2007)	Japan (2007-2010)	Switzerland (2010-2013)	China Since 2013
FMCG country	Gillette (P&G) – 2000-2002 <i>CPC (Unilever) 1993</i>			
FMCG research agency	Nielsen 1994-1999			
Pharma country		Bayer Schering Pharma (2007- 2010)		<i>Sanofi (2015-2016)</i>
Pharma Region & Global	Bristol-Myers Squibb (2003-2007)		Novartis Pharma (2010-2011) Vifor Pharma (2011- 2015)	
Pharma research agency				<i>Cegedim Strategic data (2014)</i> IPSOS Healthcare (2015-2016)

Over all these years, I developed smart analysis tools on recurrent market research, recently on Oncology in China

An exclusive Instant Analytics tool displaying instantly 90% of the metrics collected in the patient card, with a drop down on the period, Diagnosis, Molecule or regimen



Smart analytics with customization of the group stage and the characteristics (biomarkers) by cancer type and tumor

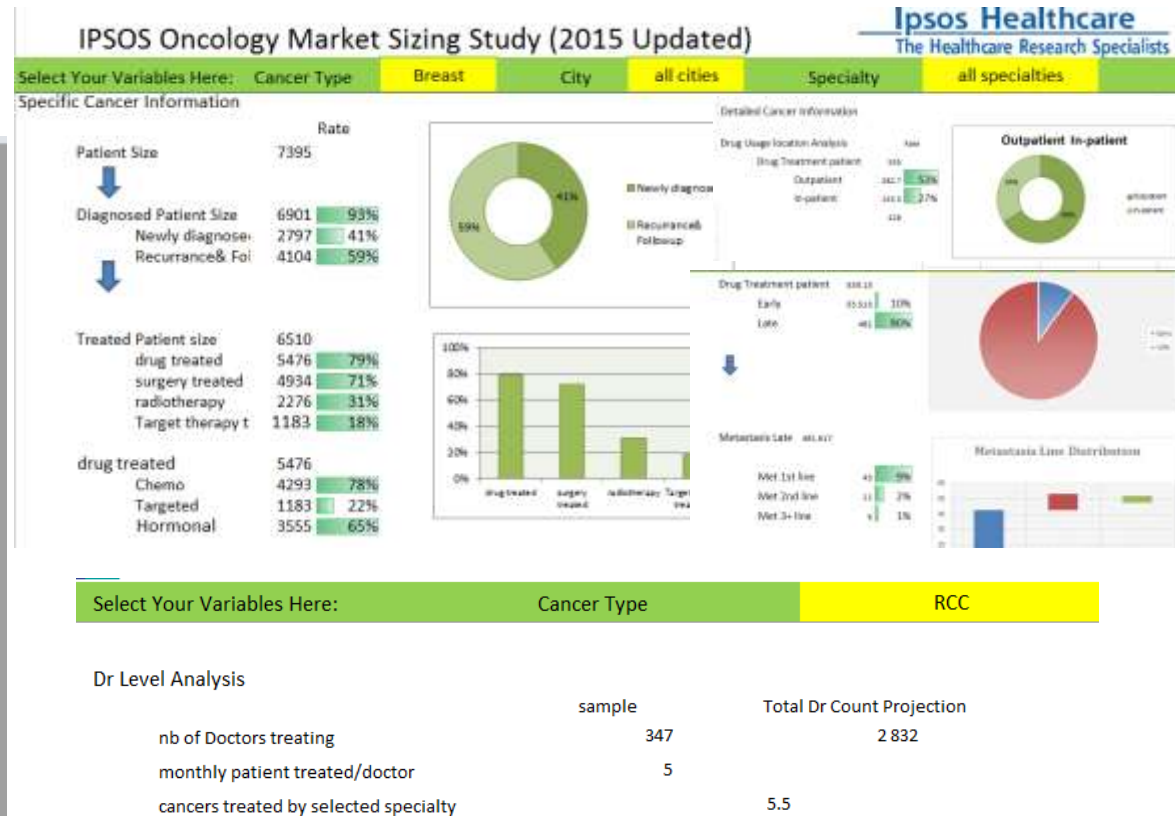
At IPSOS I worked on Oncology market Sizing Survey in 2015

- survey on 1800 cancer treating physicians / 20 cities delivers epidemiology KPIs on all tumors
- It was intended also to compute projection factors for Oncology tracker based on patient records and tracking treatments on a 6-month / quarterly basis

On average, What the number of the patients you have treated for each tumor types in 1 month? And please estimate the diagnosed rate, treatment rate and anticancer drug treatment rate of each tumor type type? (antineoplastic drugs including: cytotoxic drugs, targeted drugs, endocrine drugs, biological treatment) 平均而言, 在一个月中您所治疗的每一种肿瘤的患者数目各是多少? (填入患者人数), 并请估计每一种肿瘤的诊断率, 治疗率, 以及肿瘤患者使用抗肿瘤药物治疗的比例各是多少? (抗肿瘤药物包括: 细胞毒药物、靶向药物、内分泌药物、生物治疗药物)

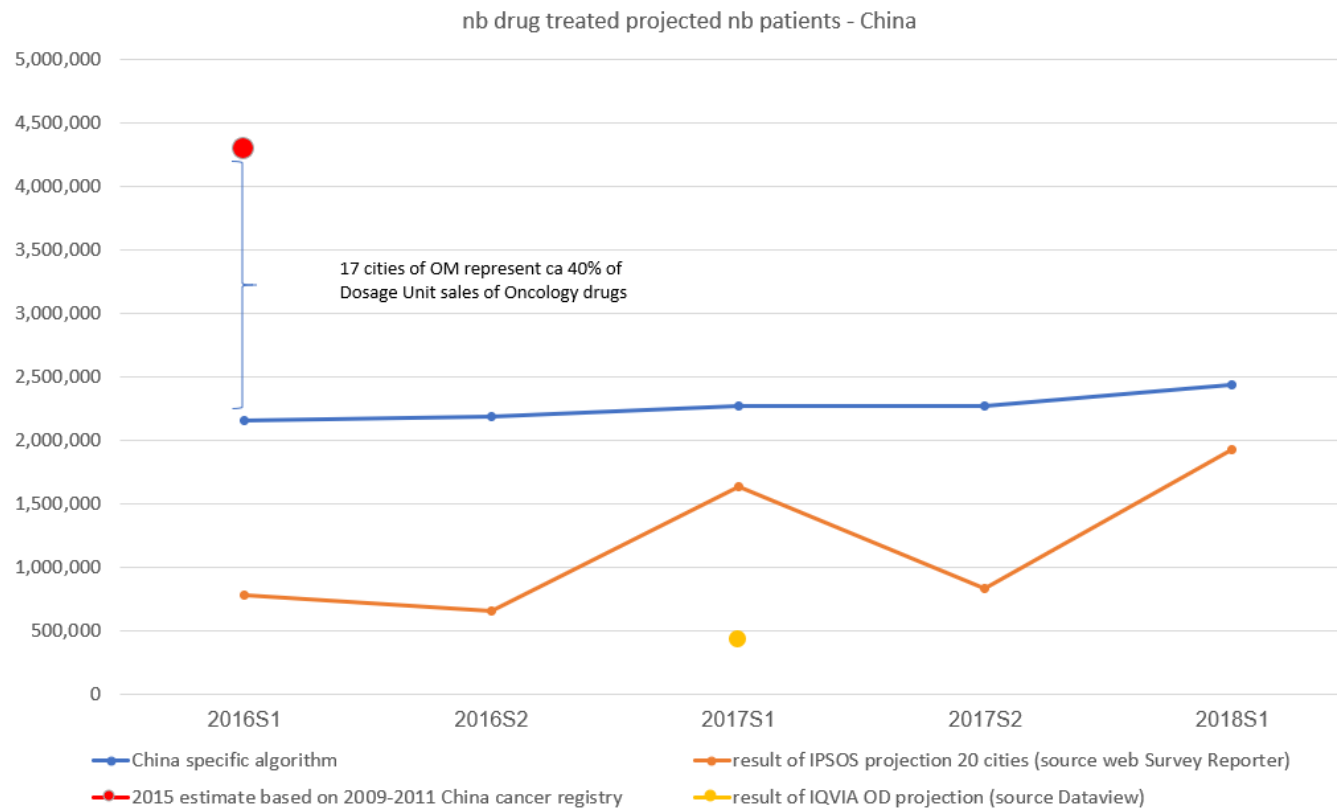
01 Breast cancer 乳腺癌	02 CRC结肠癌	03 small intestine cancer 小肠癌	04 Stomach cancer 胃癌	05 Esophagus cancer 食道癌	06 Pancreas cancer 胰腺癌
patient / month 人/月	patient / month 人/月	patient / month 人/月	patient / month 人/月	patient / month 人/月	patient / month 人/月
new patient rate 其中新确诊率	new patient rate 其中新确诊率	new patient rate 其中新确诊率	new patient rate 其中新确诊率	new patient rate 其中新确诊率	new patient rate 其中新确诊率
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targeted drugs 使用靶向药物	targeted drugs 使用靶向药物	targeted drugs 使用靶向药物	targeted drugs 使用靶向药物	targeted drugs 使用靶向药物	targeted drugs 使用靶向药物

- 1
- 2
- 3



But the global algorithms used for projection fail on China

That's how I came across the Cancer registry



because of a large variability in the prevalence

- So a rough division of number by total coverage of 25.7% (or 27.6% for the 2019 book) will be very approximate

IPSOS Oncology Market Sizing Study -1800 cancer treating (>8 years experience) physicians 20 cities Q4 2015 measuring patient load by Diagnosis

distribution of total cancer patients	Breast	Gynecological	Colorectal	Hepatobiliary	Other Gastro	Lung	Prostate & Testes	Head & Neck	Urinary	Chronic leukemia	Acute leukemia	Lymphomas	Paraneoplastic	Sarcoma	Other Haematology
15.7% Shanghai	9.2%	4.9%	10.3%	5.0%	11.6%	12.3%	4.3%	1.3%	4.9%	5.7%	5.6%	12.4%	10.4%	0.7%	0.0%
15.7% rest of East	8.3%	9.4%	7.7%	10.3%	13.6%	15.8%	3.1%	6.8%	7.0%	2.4%	5.8%	4.4%	3.7%	0.7%	0.0%
18.1% Beijing	10.7%	6.7%	8.8%	6.9%	10.1%	17.2%	2.8%	1.4%	5.9%	3.6%	7.4%	8.7%	8.1%	0.4%	0.0%
16.0% rest of North	7.8%	5.4%	7.5%	4.2%	11.5%	35.1%	2.0%	2.0%	3.9%	2.5%	5.0%	6.8%	4.4%	0.6%	0.6%
18.1% Guangzhou	11.1%	6.6%	9.4%	4.5%	13.0%	19.7%	4.8%	4.4%	6.4%	1.5%	3.8%	5.0%	5.0%	1.2%	0.0%
1.6% rest of South	8.7%	9.5%	3.5%	9.7%	17.6%	15.5%	10.7%	5.8%	3.7%	2.3%	2.5%	5.7%	3.5%	0.5%	0.0%
23.0% West	9.2%	9.0%	5.7%	4.8%	10.6%	12.8%	3.2%	5.5%	5.5%	6.9%	10.5%	7.4%	6.2%	1.4%	0.3%

Tier I cities will gather more Breast patients than Tier II

Tier I cities will gather more colorectal patients than Tier II

Highly polluted North cities have very high lung cancer rated - Tiering not relevant

Public cancer registry used to validate Market Sizing Study results



China cancer registry is a reference for cancer epidemiology in China now active contributor of AIRC

- Yet data is only available on paper : need to enter data
- The latest edition available covers 486 registries, covering 27.6% of total China population
- It takes about 3 years to release a cancer registry : now available 2019 book (released Jan 2021) with 2016 fieldwork
- The list of Diagnosis reported is limited to 25 key cancers for key cities
- It reports incidence and mortality, so not a measurement of the actual nb of patients eligible for treatment

Lancet Article July 2020

GBI Newsfeed May 2021

Cancer registration in China and its role in cancer prevention and control



Wenqiang Wei*, Hongmei Zeng*, Hongzhou Zheng*, Siwei Zhang*, Lan An, Ru Chen, Shaoming Wang, Kexin Sun, Tomohiro Matsuda, Freddie Bray, Jie He

Cancer has become a leading cause of death in China, with an increasing burden of cancer incidence and mortality observed over the past half century. Population-based cancer registries have been operating in China for about 60 years, and, in 2018, their role has expanded to include the formulation and evaluation of national cancer control programmes and the care of patients with cancer. The purpose of this Review is to provide an overview of the key milestones in the development of cancer registration in China, the current status of registry coverage and quality, and a description of the changing cancer profile in China from 1973 to 2015. This Review is a comprehensive and updated review on the development of population-based cancer registries in China over a 60-year time span. We highlight some aspects of cancer control plans that illustrate how cancer registration data have become central to the identification of health priorities for China and provide a means to track progress in cancer control for the country.

Introduction

Although technological development and the value of registries have led to increases in data quality and use over the past decades in high-income countries, increasing inequities in health resources and competing priorities have resulted in inadequate availability of high-quality cancer data in many developing countries. The pace of development for cancer registration has been much slower in developing countries than in developed

burden in China, and the role of cancer registration in cancer control programmes.

Key milestones in the development of cancer registration in China

The first Chinese cancer registry was established in Linzhou in 1959,¹ when an oesophageal cancer survey was done in Taihang—an area with a high incidence of the disease.¹ In 1963, Shanghai established the first urban

Lancet Oncol 2020; 21: e342–49

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R Chen PhD, S Wang PhD,
K Sun PhD, Prof J He MD);
Population-based Cancer
Registry Section, Division of
Surveillance, Center for Cancer
Control and Subvention
Services, National Cancer
Center, Tokyo, Japan
(T Matsuda PhD); and Cancer
Surveillance Section,
International Agency for
Research on Cancer, Lyon,

China joins WHO's cancer research agency IARC

05/20/2021 China Policy / Regulatory Pharma & Biotech, Device & Diagnostics

China this week became a member of the International Agency for Research on Cancer (IARC), the World Health Organization's specialist cancer agency. The country is the 27th participating state in the IARC, which states its mission is to coordinate and conduct research into the causes of cancer, the mechanisms of carcinogenesis, and to develop strategies for cancer control.

The entry of China in the IARC means that the country can "shape global research priorities in cancer control and prevention" within the network, according to the press release. The IARC has long been active in China, collaborating on cancer research projects with local institutions, and training Chinese scientists at the agency's base in Lyon, France.

Objectives of the project

- Explore China cancer registry and assess cancer treated patient numbers in China by tumor and key city
- Combine with Market Sizing Study new patient / treatment / cancer treatment rates
- Target usage : commercial assessment – Oncology Pharma industry
- Led with the guidance of senior epidemiologists from Cancer Foundation of China :
 - Incidence : confirmed only new cases
 - Calculation of nb Yearly nb of patients

Latest release Jan 2021
(5-month Covid delay)



Release used in initial project



Beijing January 21 2020,
Carole Gabay meets with :

Xiao Nong Zou
Deputy chief, Branch of Tobacco Control &
Lung Cancer Control
Cancer Foundation of China

And

Pr Ping Zhao, President,
Cancer Foundation of China

Selection of cities entered from 2017 registry

2	ranking of China cities in Dosage Units (March 2016)	
3		
4	city entered for cancer registry data	
5		
6		
7	Shanghai	28 Kunming
8	Beijing	29 Shijiazhuang
9	Guangzhou	30 Nanning
10	Chongqing	31 Wuxi
11	Fuxiaquan	32 Taiyuan
12	Chengdu	33 Changzhou
13	Tianjin	34 Harbin
14	Wuhan	35 Nanchang
15	Hangzhou	36 Guiyang
16	Nanjing	37 Xuzhou
17	Changsha	38 Changchun
18	Pearl River Delta	39 Dalian
19	Shenyang	40 Wulumuqi
20	Zhengzhou	41 Lanzhou
21	Suzhou	
22	Wenzhou	
23	Shenzhen	
24	Xian	
25	Jinan	
26	Ningbo	
27	Qingdao	

Fuzhou +
Xiamen in Fujian
province

Some Major cities not covered in registry

Entered cities included in Market Sizing Study providing rate of new patients / treated / cancer-drug treated

They represent **86%** of Oncology Drugs Sales in Hospitals (82% in volume - source IQVIA CHPA)

13% of total China Population

17% of cancer patients (source registry)

China
Eastern China
Middle China
Western China

entered total China and regions used as proxy for non entered registries

Population of all Shi, Xian and Qu compared to registry coverage

2019 update : updated numbers entered

Updated coverage rate

Desk research data

Wikipedia for 2010 census – integration of 2020 national census data

E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	
Province	Pinyin no accents	<u>Pinyin with accents</u>	<u>prefecture</u>	<u>mandarin</u>	<u>Status</u>	Population 2000	Population 2010	Population 2017	Population 2017 proxy	Population 2020 census	est 2016 Population	Population covered by registry 2017	rural areas covered by registry 2017	total population covered 2017	duplicate	Region 4 clusters + Tier I	Region 3 clusters	Population covered by registry 2019	rural areas covered by registry 2019	total population covered 2019	rejected 2019	new in 2019	rejected 2017	in book 2017	in book 2019	population covered growth	declining covered population	coverage rate 2019	
Anhui	Bozhou City	Bózhōu Shì	Bozhou	亳州市	Prefecture	5,078,908	4,850,657	5,168,800	0	4,850,657	5,168,800			0	yes	East	Middle												-
Anhui	Chizhou City	Chízhōu Shì	Chizhou	池州市	Prefecture	1,389,469	1,402,518	1,449,300	0	1,402,518	1,449,300			0	yes	East	Middle												-
Anhui	Chuzhou City	Chúzhōu Shì	Chuzhou	滁州市	Prefecture	4,001,488	3,937,868	4,076,200	0	3,937,868	4,076,200			0	yes	East	Middle												-
Anhui	Fuyang City	Fúyáng Shì	Fuyang	阜阳市	Prefecture	8,003,963	7,599,913	8,092,600	0	7,599,913	8,092,600			0	yes	East	Middle	659,140		659,140						1			8%
Anhui	Hefei City	Héféi Shì	Hefei	合肥市	Prefecture	6,392,122	7,457,027	7,965,300	0	5,702,466	7,965,300	2,430,768		2,430,768	yes	East	Middle	2,454,656		2,454,656				1	1	1%			31%
Anhui	Huaibei City	Huáiběi Shì	Huaibei	淮北市	Prefecture	1,878,164	2,114,276	2,227,900	0	2,114,276	2,227,900			0	yes	East	Middle												-
Anhui	Huainan City	Huáinán Shì	Huainan	淮南市	Prefecture	3,153,218	3,342,012	3,487,000	0	2,333,896	3,487,000			0	yes	East	Middle												-
Anhui	Huangshan City	Huángshān Shì	Huangshan	黄山市	Prefecture	1,370,377	1,358,980	1,384,400	0	1,358,980	1,384,400			0	yes	East	Middle												-
Anhui	Liu'an City	Lù'ān Shì	Liu'an	六安市	Prefecture	4,842,084	4,603,585	4,800,300	0	5,611,701	4,800,300			0	yes	East	Middle												-
Anhui	Ma'anshan City	Mǎ'ānshān Shì	Ma'anshan	马鞍山市	Prefecture	2,193,546	2,202,899	2,301,600	0	1,366,302	2,301,600	638,060		638,060	yes	East	Middle	637,706		637,706				1	1	0%			28%
Anhui	Suzhou City	Sùzhōu Shì	Suzhou	宿州市	Prefecture	5,516,423	5,352,924	5,656,900	0	5,352,924	5,656,900			0	yes	East	Middle												-
Anhui	Tongling City	Tónglíng Shì	Tongling	铜陵市	Prefecture	1,442,667	1,562,670	1,608,000	0	723,958	1,608,000	448,736		448,736	yes	East	Middle	447,787		447,787				1	1	0%			28%
Anhui	Wuhu City	Wúhú Shì	Wuhu	芜湖市	Prefecture	3,367,502	3,545,067	3,696,200	0	2,263,123	3,696,200	1,478,663		1,478,663	yes	East	Middle	1,447,083		1,447,083				1	1	-2%	1		39%
Anhui	Xuancheng City	Xuānchéng Shì	Xuancheng	宣城市	Prefecture	2,659,639	2,532,938	2,613,800	0	2,532,938	2,613,800			0	yes	East	Middle												-
Beijing	Beijing City	Běijīng Shì	Beijing	北京市	Province-level	13,569,194	19,612,368	#####	0	19,612,368	21,707,000	8,289,660	4,959,016	13,248,676	yes	Beijing	East	8,452,233	5088031	13,540,264				1	1	2%			62%
Fujian	Fuzhou City	Fúzhōu Shì	Fuzhou	福州市	Prefecture	6,386,015	7,115,369	7,660,000	0	7,115,369	7,660,000			0	yes	South	East												-
Fujian	Longyan City	Lóngyán Shì	Longyan	龙岩市	Prefecture	2,684,310	2,559,545	2,640,000	0	2,559,545	2,640,000			0	yes	South	East												-
Fujian	Nanping City	Nánpíng Shì	Nanping	南平市	Prefecture	2,816,581	2,821,996	2,680,000	0	2,645,546	2,680,000			0	yes	South	East												-
Fujian	Ningde City	Níngdé Shì	Ningde	宁德市	Prefecture	2,981,258	2,778,508	2,900,000	0	2,821,996	2,900,000			0	yes	South	East												-

All territories entered and population covered for all registries matched with the list

Entered from registry



E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	
Province	Pinyin no accents	Pinyin with accents	prefecture	mandarin	Status	Population 2000	Population 2010	Population 2017	Population 2017 proxy	Population 2020 census	est 2016 Population	Population covered by registry 2017	rural areas covered by registry 2017	total population covered 2017	duplicate	Region 4 clusters + Tier I	Region 3 clusters	Population covered by registry 2019	rural areas covered by registry 2019	total population covered 2019	rejected 2019	new in 2019	rejected 2017	in book 2017	in book 2019	population covered growth	declining covered population	coverage rate 2019	
Anhui	Bozhou City	Bózhōu Shì	Bozhou	亳州市	Prefecture	5,078,908	4,850,657	5,168,800	0	4,850,657	5,168,800			0	yes	East	Middle												-
Anhui	Chizhou City	Chízhōu Shì	Chizhou	池州市	Prefecture	1,389,469	1,402,518	1,449,300	0	1,402,518	1,449,300			0	yes	East	Middle												-
Anhui	Chuzhou City	Chúzhōu Shì	Chuzhou	滁州市	Prefecture	4,001,488	3,937,868	4,076,200	0	3,937,868	4,076,200			0	yes	East	Middle												-
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Anhui	Huainan City	Huáinán Shì	Huainan	淮南市	Prefecture	3,153,218	3,342,012	3,487,000	0	2,333,896	3,487,000			0	yes	East	Middle												-
Anhui	Huangshan City	Huángshān Shì	Huangshan	黄山市	Prefecture	1,370,377	1,358,980	1,384,400	0	1,358,980	1,384,400			0	yes	East	Middle												-
Anhui	Liu'an City	Lù'ān Shì	Liu'an	六安市	Prefecture	4,842,084	4,603,585	4,800,300	0	5,611,701	4,800,300			0	yes	East	Middle												-
Anhui	Ma'anshan City	Mǎ'ānshān Shì	Ma'anshan	马鞍山市	Prefecture	2,193,546	2,202,899	2,301,600	0	1,366,302	2,301,600	638,060		638,060	yes	East	Middle	637,706		637,706				1	1	0%		28%	
Anhui	Suzhou City	Sùzhōu Shì	Suzhou	宿州市	Prefecture	5,516,423	5,352,924	5,656,900	0	5,352,924	5,656,900			0	yes	East	Middle												-
Anhui	Tongling City	Tónglíng Shì	Tongling	铜陵市	Prefecture	1,442,667	1,562,670	1,608,000	0	723,958	1,608,000	448,736		448,736	yes	East	Middle	447,787		447,787				1	1	0%		28%	
Anhui	Wuhu City	Wúhú Shì	Wuhu	芜湖市	Prefecture	3,367,502	3,545,067	3,696,200	0	2,263,123	3,696,200	1,478,663		1,478,663	yes	East	Middle	1,447,083		1,447,083				1	1	-2%	1	39%	
Anhui	Xuancheng City	Xuānchéng Shì	Xuancheng	宣城市	Prefecture	2,659,639	2,532,938	2,613,800	0	2,532,938	2,613,800			0	yes	East	Middle												-
Beijing	Beijing City	Běijīng Shì	Beijing	北京市	Province-li	13,569,194	19,612,368	#####	0	19,612,368	21,707,000	8,289,660	4,959,016	13,248,676	yes	Beijing	East	8,452,233	5088031	13,540,264				1	1	2%		62%	
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Fujian	Longyan City	Lóngyán Shì	Longyan	龙岩市	Prefecture	2,684,310	2,559,545	2,640,000	0	2,559,545	2,640,000			0	yes	South	East												-
Fujian	Nanping City	Nánpíng Shì	Nanping	南平市	Prefecture	2,816,581	2,821,996	2,680,000	0	2,645,548	2,680,000			0	yes	South	East												-
Fujian	Ningde City	Níngdé Shì	Ningde	宁德市	Prefecture	2,981,258	2,778,508	2,900,000	0	2,821,996	2,900,000			0	yes	South	East												-

China cancer Registry 2019 vs 2017 - changes in territory participation and population registered at Shi / Xian / Qu level							
Mainland China Province	nb of territories participating			overall	Population registered at constant participating Shi / Xian/ Qu		
	2017	2019	change	population covered growth	nb of prefectures with declining population covered	maximum growth	minimum change or decline
Beijing	2	2	0%	2.2%		2%	0%
Tianjin	2	2	0%	2.7%		3%	0%
Hebei	23	27	17%	10.9%	1	98%	-5%
Shanxi	16	16	0%	0.4%	1	2%	-1%
Inner Mongolia	13	17	31%	22.1%	2	3%	-21%
Liaoning	15	15	0%	25.1%	3	1%	-2%
Jilin	9	36	300%	77.6%	3	1%	-6%
Heilongjiang	9	11	22%	-6.9%	2	2%	-18%
Shanghai	1	1	0%	-1.8%	1	0%	-2%
Jiangsu	36	42	17%	2.8%	4	7%	-7%
zhejiang	14	14	0%	1.9%	1	3%	-1%
Anhui	23	25	9%	7.8%	2	9%	-2%
Fujian	11	12	9%	8.2%	1	9%	-2%
Jiangxi	15	19	27%	87.9%	1	2%	-6%
Shandong	30	32	7%	3.1%	1	8%	-1%
Henan	34	38	12%	19.9%	1	44%	-2%
Hubei	13	17	31%	34.2%	3	3%	-6%
Hunan	23	25	9%	13.9%	2	14%	-1%
Guangdong	17	18	6%	21.1%		15%	0%
Guangxi	11	24	118%	170.8%	1	5%	-26%
Hainan	6	6	0%	29.1%	1	1%	-15%
Chongqing	21	27	29%	251.5%	1	10%	-9%
Sichuan	20	61	205%	201.6%	6	25%	-26%
Guizhou	9	17	89%	133.6%	1	42%	-2%
Yunnan	19	52	174%	43.0%		3%	0%
Tibet Autonomous Region	3	5	67%	-27.1%	1	0%	-27%
Shaanxi	30	63	110%	30.5%	4	8%	-8%
Gansu	15	15	0%	-0.4%	2	30%	-13%
Qinghai	8	8	0%	17.8%	1	2%	-1%
Ningxia	9	9	0%	26.2%	2	25%	-4%
Xinjiang	5	8	60%	-26.6%		21%	0%
Corps	2	3	50%				
total participating registries	464	667	44%	28%			
total validated registries	338	486	44%				
% validation	73%	73%					
key data on all sites exc C44							
incidence	818,415	1,101,897	35%				
deaths	498,228	672,586	35%				
deaths on incidence	61%	61%					

for analysis of incidence / growth by province, we need to run the full project as it entails processing 400 pages of data...

Comparison of 2017 and 2019 registries

- List of diagnosis : unchanged
- List of registries : increased by 44%, yet :
 - Unchanged rate of drop off (participating registries that do not receive validation to be published in the book) of 27%
 - Still 2 large cities not validated or participating : Nanjing & Zhengzhou

On key data :

Total incidence : +35%, to be analysed with incremental population covered added to the validated registries

Ratio of deaths / incidence unchanged

→ Hence, the coverage analysis offered in the project is particularly relevant

* Hebei high growth on prefecture of Qinhuangdao as it was extended from urban only to total prefecture
 Henan : high growth of prefecture of Luoyang, no change of territory definition
 Gansu : high growth of prefecture of Qingcheng, no change of territory definition



Structure of data entry file

Data entry
Calculation and bridging
Market research data

geography main	Province	region	tumor site	Site	Gender	incidence	mortality	Yearly nb patiel	mortality ratio	populatio n cover	province popul	coverage rat	projected incide	projected nb Yearly patiel	Diagnosis of focus	Diagnosis label Market sizing studv	rate of new patiel	rate of treat	rate of cancer drug	projected treated patients	projected cancer drug
China		total CN	Lip, oral cavity, Pharynx but Naso Lip		both sexes	465	118	862	13.69%		0.254521	0.254521	1,827	3,387	Head & neck	othHeadNeck	54%	87%	82%	2,935	2,408
China		total CN	Lip, oral cavity, Pharynx but Naso Tongue		both sexes	2,033	1,010	3,769	26.80%		0.254521	0.254521	7,988	14,809	Head & neck	othHeadNeck	54%	87%	82%	12,834	10,527
China		total CN	Lip, oral cavity, Pharynx but Naso Mouth		both sexes	2,767	1,010	3,769	26.80%		0.254521	0.254521	10,871	20,156	Head & neck	othHeadNeck	54%	87%	82%	17,467	14,328
China		total CN	Lip, oral cavity, Pharynx but Naso Salivary Gland		both sexes	1,687					0.254521	0.254521	6,628	12,289	Head & neck	othHeadNeck	54%	87%	82%	10,649	8,736
China		total CN	Lip, oral cavity, Pharynx but Naso tonsil		both sexes	370					0.254521	0.254521	1,454	2,695	Head & neck	othHeadNeck	54%	87%	82%	2,336	1,916
China		total CN	Lip, oral cavity, Pharynx but Naso Other Orophary		both sexes	597					0.254521	0.254521	2,346	4,349	Head & neck	othHeadNeck	54%	87%	82%	3,769	3,091
China		total CN	Nasopharynx	Nasopharynx	both sexes	9,685	5,000				0.254521	0.254521	38,052	82,574	Na		46%	93%	90%	77,172	69,831
China		total CN	Lip, oral cavity, Pharynx but Naso Hypopharynx		both sexes	1,379					0.254521	0.254521	5,418	10,045	He		54%	87%	82%	8,705	7,141

carole.gabay:
 assumption :Yearly nb of patients = Incidence / rate of new patients (as measured in Market Sizing study)

for comparison with Oncology Market Research surveys

2019 data integration : we can analyse changes by registry 2019 vs 2017, and identify potential outliers

ICD-10	tumor site	Site	ICD-10	tumor site	Site
C00	Lip, oral cavity, Pharynx but Naso	Lip	C56	Ovary	Ovary
C01-C02	Lip, oral cavity, Pharynx but Naso	Tongue	C57		Other Female Genital Organs
C03-C06	Lip, oral cavity, Pharynx but Naso	Mouth	C58		Placenta
C07-C08	Lip, oral cavity, Pharynx but Naso	Salivary Gland	C60		Penis
C09	Lip, oral cavity, Pharynx but Naso	tonsil	C61	Prostate	Prostate
C10	Lip, oral cavity, Pharynx but Naso	Other Oropharynx	C62	Testis	Testis
C11	Nasopharynx	Nasopharynx	C63		Other Male Genital Organs
C12-C13	Lip, oral cavity, Pharynx but Naso	Hypopharynx	C64	Kidney & unspecified Urinary org	Kidney
C14	Lip, oral cavity, Pharynx but Naso	Pharynx Unspecified	C65		Renal Pelvis
C15	Esophagus	Esophagus	C66		Ureter
C16	Stomach	Stomach	C67	Bladder	Bladder
C17		Small intestine	C68		Other Urinary organs
C18	Colon, Rectum & Anus	Colon	C69		Eye
C19-C20	Colon, Rectum & Anus	rectum	C70-C72	Brain, Central Nervous system	Brain, nervous system
C21	Colon, Rectum & Anus	Anus	C73	Thyroid Gland	Thyroid Gland
C22	Liver	Liver	C74		Adrenal Gland
C23-C24	gallbladder etc...	gallbladder	C75		Other Endocrine
C25	pancreas	pancreas	C81	Lymphoma	Hodgkins disease
C30-C31	Lip, oral cavity, Pharynx but Naso	Nose, sinuses, etc.	C82-C85;C8	Lymphoma	Non-Hodgkins Lymphoma
C32	Larynx	Larynx	C88		Immunoproliferative Disease
C33-C34	Trachea, bronchus and lung	Trachea, bronchus and lung	C90		Multiple Myeloma
C37-C38	Other Thoracic Organs	Other Thoracic Organs	C91	Leukemia	Lymphoid Leukemia
C40-C41	Bone	Bone	C92-C94	Leukemia	Myeloid Leukemia
C43	Melanoma of skin	Melanoma of skin	C95	Leukemia	Leukemia of unspecified cell type
C44		Other Skin	O&U	all other sites & unspecified	Other and Unspecified
C45		Mesothelomia	all sum		all site sum
C46		Kaposi sarcoma	exclusion		C44 Other Malignant Neoplasms of skin
C47-C49		Connective and Soft Tissue	all report		reported all sites
C50	Breast	Breast	all report		all sites except C44 reported
C51		Vulva			
C52		Vagina			
C53	Cervix Uteri	Cervix Uteri			
C54	Uteris & unspecified	Corpus Uteri			
C55	Uteris & unspecified	Uterus unspecified			

Compared the sum and reported total for sanity check after each geography entry

List of 61 diagnosis provided for China and regions

List of 25 diagnosis provided for Shi, Xian and Qu (97% of total incidence)

Lip, oral cavity, Pharynx but Naso	pharync
Nasopharynx	
Esophagus	Important
Stomach	Diagnosis missing :
Colon, Rectum & Anus	Split of leukemia
Liver	and lymphomas
gallbladder etc...	Sarcomas
pancreas	Sarcomas
Larynx	Multiple myeloma
Trachea, bronchus and lung	
Other Thoracic Organs	
Bone	
Melanoma of skin	
Breast	
Cervix Uteri	
Uteris & unspecified	
Ovary	
Prostate	
Testis	
Kidney & unspecified Urinary organs	
Bladder	
Brain, Central Nervous system	
Thyroid Gland	
Lymphoma	
Leukemia	
all other sites & unspecified	
all sites reported	
all sites reported nut C44	
all sites sum	

Important Diagnosis missing :
Acute vs chronic leukemias

No change between 2017 and 2019 books

2211 rows entered – 17 cities + 4 clusters for 25 or 60 diagnosis, male and female, incidence and mortality : total 4133

Applying the coverage rates by territory we can get a bottom up calculation of nb of living cases (Prevalence)

CHAR X ✓ fx =IF(P797=0;L797;L797/P797)

	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
	geography main	Province	region	tumor site	Site	Gender	incidence	mortality	Yearly nb patiel	mortality ratio	populatio n cover	province popul...	coverage rate	projected incidence	projected nb Yearly patie...	Diagnosis of focus	Diagnosis label Market sizing studv	rate of new patiel...	rate of treat...	rate of cancer drug	projected treated patients	projected cancer drue
797	Hangzhou	Zhejiang	East	gallbladder etc...		Male	150	135	438	30.79%	0.747648	0	0.747648	201	P797	rest of Hepat	intestine	34%	93%	90%	543	487
798	Hangzhou	Zhejiang	East	pancreas		Male	387	421	813	51.78%	0.747648	0	0.747648	518	1,088	pancreas	pancreas	48%	50%	55%	543	299
799	Hangzhou	Zhejiang	East	Larynx		Male	134	51	338	15.08%	0.747648	0	0.747648	179	452	Head & neck	othHeadNeck	40%	87%	86%	395	340
800	Hangzhou	Zhejiang	East	Trachea, bronchus and lung		Male	3,005	2,785	5,736	48.56%	0.747648	0	0.747648	4,019	7,671	NSCLC	NSCLC	52%	96%	90%	7,368	6,652
801	Hangzhou	Zhejiang	East	Other Thoracic Organs		Male	49	20	106	18.82%	0.747648	0	0.747648	66	142	lung other	Lungsmallcell	46%	83%	75%	118	89

With the 2019 book, we extend the data capture to all the registries

Scrap technology on pages of cancer Registry 2019 book
2017 book : 336 registries - 2019 book : 486 registries

A complimentary contribution from
Healthcare Strategic consulting firm L.E.K.



Example of paper page from registry

List of prefectures to « scrap »

表 6-3-26 海兴县 2014 年癌症发病和死亡主要指标
Table 6-3-26: Incidence and mortality of cancer in Haixing Xian, 2014

部位 Site	男性 Male					女性 Female					ICD-10	
	病例数 No. cases	构成 (%) (%)	粗率 RRs (1/10)	标化率 ASR world (1/10)	累积率 Cum.rate(%) 0-74	病例数 No. cases	构成 (%) (%)	粗率 RRs (1/10)	标化率 ASR world (1/10)	累积率 Cum.rate(%) 0-74		
全部肿瘤 All Sites	219	100.00	198.29	163.25	10.48	18.70	238	100.00	229.10	186.41	11.62	21.80
食管癌 Esophageal	11	5.02	9.96	8.08	0.88	0.66	11	4.02	10.90	11.40	0.98	1.44
胃癌 Gastric	4	1.83	3.62	3.38	0.15	0.13	1	0.42	0.96	0.54	0.03	0.81
肝癌 Liver	27	12.33	24.43	18.25	1.49	2.80	4	1.58	3.20	2.98	0.20	0.54
肺癌 Lung	19	8.68	17.20	14.82	0.94	1.97	14	5.68	11.46	10.68	0.88	1.41
结肠直肠癌 Colon, Rectum and Anus	10	4.57	9.05	5.75	0.41	0.76	6	2.52	5.78	3.81	0.07	1.08
前列腺癌 Prostate	2	0.91	1.81	1.73	0.11	0.11	1	0.42	0.96	1.17	0.00	0.19
乳腺癌 Breast	1	0.46	0.91	0.89	0.08	0.09	0	0.00	0.00	0.00	0.00	0.00
宫颈癌 Cervix Uteri	1	0.46	0.91	0.92	0.00	0.23	0	0.00	0.00	0.00	0.00	0.00
子宫内膜癌 Uterus & Unspecified	1	0.46	0.91	0.92	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
卵巢癌 Ovary	1	0.46	0.91	0.92	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
胰腺癌 Pancreas	1	0.46	0.91	0.92	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
甲状腺癌 Thyroid Gland	1	0.46	0.91	0.92	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
其他恶性肿瘤 Other Malignant Tumors	1	0.46	0.91	0.92	0.00	0.23	0	0.00	0.00	0.00	0.00	0.00

territory type	Province	Pinyin no accents	PinYin with accents	prefecture	mandarin	Population 2015	Population 2017	Population 2018/2019	Population covering ratio
Shi	Hebei	Cangzhou City	Cāngzhōu Shì	Cangzhou	沧州市	1,134,082	1,094,000	0	906,577
Shi	Hebei	Qinhuangdao City	Qínhuángdǎo Shì	Qinhuangdao	秦皇岛市	2,907,085	2,800,000	0	710,571
Shi	Hebei	Shijiazhuang City	Shìjiāzhuāng Shì	Shijiazhuang	石家庄市	8,563,788	8,079,900	0	2,094,556
Shi	Heilongjiang	Mudanjiang City	Mùdānjiāng Shì	Mudanjiang	牡丹江市	2,798,722	2,785,722	0	949,025
Shi	Henan	Anyang City	Ānyāng Shì	Anyang	安阳市	5,173,888	5,100,000	0	1,583,884
Shi	Henan	Hebi City	Hēbì Shì	Hebi	鹤壁市	1,968,238	1,920,000	0	536,324
Shi	Henan	Kaifeng City	Kāifēng Shì	Kaifeng	开封市	4,874,482	4,550,000	0	703,390
Shi	Henan	Luoyang City	Lúoyāng Shì	Luoyang	洛阳市	6,518,241	6,020,000	0	1,193,200
Shi	Henan	Sanmenxia City	Sānméixiǎ Shì	Sanmenxia	三门峡市	2,224,026	2,070,000	0	292,690
Shi	Henan	Zhengzhou City	Zhēngzhōu Shì	Zhengzhou	郑州市	8,627,089	8,980,000	0	2,686,989
Shi	Hubei	Enshi Tujia and Miao	Ēnshì Tǔjiā Mǎo Shì	Enshi Tujia and Miao	恩施土家族苗族自治州	3,298,294	3,200,000	0	829,925
Shi	Hubei	Yichang City	Yíchāng Shì	Yichang	宜昌市	4,898,696	4,725,000	0	1,376,435
Shi	Hubei	Changzhou City	Chāngzhōu Shì	Changzhou	常州市	4,592,421	4,717,300	0	2,269,412
Shi	Hubei	Huailian City	Huáilǐán Shì	Huailian	淮南市	4,804,662	4,264,000	0	945,660
Shi	Hubei	Lianyungang City	Liányúngāng Shì	Lianyungang	连云港市	4,200,462	4,094,000	0	1,084,477
Shi	Hubei	Nantong City	Nántōng Shì	Nantong	南通市	1,260,422	1,289,000	0	1,087,780
Shi	Hubei	Suzhou City	Sūzhōu Shì	Suzhou	苏州市	8,098,090	8,083,000	0	3,281,970
Shi	Hubei	Wuxi City	Wúxī Shì	Wuxi	无锡市	6,374,395	6,585,000	0	2,428,470
Shi	Hubei	Xuzhou City	Xúzhōu Shì	Xuzhou	徐州市	6,577,226	6,762,000	0	1,988,024
Shi	Hubei	Jilin City	Jílín Shì	Jilin	吉林市	4,410,877	4,410,877	0	1,068,520
Shi	Hubei	Tonghua City	Tōnghuā Shì	Tonghua	通化市	2,224,428	2,224,428	0	242,958
Shi	Inner Mongolia	Anshan City	Ānshān Shì	Anshan	鞍山市	1,848,984	1,998,000	0	1,012,980
Shi	Inner Mongolia	Benxi City	Bēnxī Shì	Benxi	本溪市	1,070,532	1,087,000	0	334,412
Shi	Inner Mongolia	Dandong City	Dāndōng Shì	Dandong	丹东市	2,444,097	2,385,000	0	704,095
Shi	Inner Mongolia	Fuxin City	Fúxīn Shì	Fuxin	阜新市	1,818,228	1,760,000	0	842,450
Shi	Inner Mongolia	Yingkou City	Yīngkǒu Shì	Yingkou	营口市	2,428,534	2,429,000	0	445,530
Shi	Inner Mongolia	Chifeng City	Chīfēng Shì	Chifeng	赤峰市	4,341,245	4,284,000	0	1,328,245
Shi	Inner Mongolia	Guyuan City	Gūyuán Shì	Guyuan	汕尾市	1,228,896	1,228,277	0	420,896
Shi	Inner Mongolia	Yinchuan City	Yínchuān Shì	Yinchuan	银川市	1,950,086	2,225,291	0	1,032,086
Shi	Inner Mongolia	Xining City	Xīníng Shì	Xining	西宁市	2,208,786	2,385,000	0	943,939
Shi	Inner Mongolia	Qingdao City	Qīngdǎo Shì	Qingdao	青岛市	6,780,007	6,830,000	0	1,744,002
Shi	Inner Mongolia	Yantai City	Yántái Shì	Yantai	烟台市	6,968,282	7,069,400	0	1,989,282
Shi	Inner Mongolia	Yangquan City	Yángquān Shì	Yangquan	阳泉市	1,268,582	1,468,818	0	707,584
Shi	Tibet	Lhasa City	Lhāszā Shì	Lhasa	拉萨市	894,423	894,423	0	284,423
Shi	Zhejiang	Jiaxing City	Jiāxíng Shì	Jiaxing	嘉兴市	4,800,007	4,885,000	0	928,000
Xian Qu	Anhui	Changfeng	Hefei	Anhui	County	628,525	628,525	700,000	
Xian Qu	Anhui	Feidong	Hefei	Anhui	County	801,000	801,000	1,000,000	
Xian Qu	Anhui	Petal	Hefei	Anhui	County	808,000	808,000	798,000	
Xian Qu	Anhui	Lujiang	Hefei	Anhui	County	873,000	873,000	1,000,000	
Xian Qu	Anhui	Chaohu	Hefei	Anhui	City	298,780	298,780	368,831	
Xian Qu	Anhui	Wuhu	Beiqiu	Anhui	County	821,973	821,973	868,811	
Xian Qu	Anhui	Dingyuan	Chuzhou	Anhui	County	778,074	778,074	963,082	
Xian Qu	Anhui	Tianchang	Chuzhou	Anhui	City	522,732	522,732	682,040	

Replace with “scrapped” actual data for registry data instead of regional proxy

Eastern China
Middle China
Western China



Scrap technology to capture all the territories in the registry

附表3-3 天津市2016年癌症发病和死亡主要指标
Appendix Table 3-3 Incidence and mortality of cancer in Tianjin, 2016

部位 Sites	男性 Male						女性 Female						ICD9
	例数 No. cases	构成 Freq./%	发病率 Incidence rate/100000	ASR	累计率 Cum.Rate/10 ⁴	死亡率 Mortality rate/100000	例数 No. cases	构成 Freq./%	发病率 Incidence rate/100000	ASR	累计率 Cum.Rate/10 ⁴	死亡率 Mortality rate/100000	
口腔和咽喉 (除鼻咽部外)	167	1.54	6.38	3.25	0.23	0.37	102	0.88	3.85	1.96	0.12	0.20	C09-C12-C14
鼻咽部	51	0.47	1.95	1.23	0.08	0.12	16	0.14	0.68	0.31	0.02	0.04	C11
食管	265	2.45	10.14	4.53	0.28	0.55	73	0.64	2.75	0.91	0.02	0.10	C15
胃	672	6.06	23.36	14.58	0.77	1.08	401	3.50	15.13	6.08	0.38	0.77	C16
结直肠肛门	1903	16.19	42.20	19.88	1.00	2.32	884	7.72	31.35	14.16	0.74	1.67	C18-C21
肝	665	6.06	23.36	14.58	0.77	1.08	401	3.50	15.13	6.08	0.38	0.77	C22
胆囊及其他	231	2.13	8.04	3.77	0.20	0.42	161	1.42	5.55	2.00	0.16	0.45	C23-C24
胰	263	2.54	14.65	6.86	0.40	0.62	233	2.06	11.95	4.51	0.19	0.57	C25
肺	192	1.78	6.96	3.31	0.25	0.41	18	0.16	0.68	0.30	0.01	0.04	C32
气管、支气管、肺	3099	28.25	18.99	11.76	2.52	6.55	1979	17.26	74.63	28.97	1.18	3.22	C33-C34
其他胸腔脏器	48	0.44	1.74	1.07	0.08	0.12	37	0.32	1.40	0.68	0.06	0.18	C37-C38
骨	73	0.67	2.79	1.94	0.12	0.17	71	0.62	2.88	1.68	0.08	0.16	D40-41
皮肤的黑色素瘤	24	0.22	0.92	0.45	0.03	0.04	24	0.21	0.91	0.61	0.03	0.06	C43
乳腺	17	0.16	0.65	0.20	0.02	0.04	2789	24.38	82.93	46.89	3.66	5.23	C50
子宫	—	—	—	—	—	—	423	3.68	15.98	10.07	0.65	0.98	C53
子宫体及子宫颈部位	—	—	—	—	—	—	431	3.76	16.28	8.43	0.73	0.97	C54-55
卵巢	—	—	—	—	—	—	379	3.33	13.96	7.79	0.58	0.86	C56
前列腺	451	4.17	17.25	6.95	0.18	0.32	—	—	—	—	—	—	C61
睾丸	16	0.15	0.61	0.50	0.03	0.05	—	—	—	—	—	—	C62
肾及肾盂输尿管	530	4.81	20.28	13.26	0.67	1.25	264	2.30	9.36	4.87	0.30	0.58	C64-66,68
膀胱	511	4.72	19.55	8.60	0.44	1.02	164	1.44	5.81	2.29	0.14	0.24	C67
脑、神经组织	249	2.30	9.53	5.68	0.38	0.57	372	3.25	14.04	7.73	0.53	0.91	C70-72, D32-33, D42-43
甲状腺	484	4.47	18.52	12.84	1.06	1.21	597	5.24	20.94	10.25	0.79	1.33	C73
淋巴瘤	354	3.09	12.78	6.98	0.44	0.81	283	2.47	10.68	5.40	0.32	0.68	C80-88, 90, 96, 98
白血病	411	3.80	15.72	10.94	0.64	1.02	338	2.93	12.69	6.07	0.51	0.82	C91-95, D45-47
淋巴瘤及其他恶性肿瘤	478	4.42	18.25	9.91	0.59	1.00	467	4.08	17.62	9.37	0.58	0.98	A, D
所有恶性肿瘤	10225	100.00	414.14	201.43	11.59	23.42	11459	100.00	432.30	221.24	11.01	24.30	C00-98
所有恶性肿瘤 (除C44)	10744	98.25	411.04	199.86	11.50	23.25	11993	98.35	429.47	219.95	10.93	23.86	C00-98 excl. C44
口腔和咽喉 (除鼻咽部外)	134	1.56	3.98	1.96	0.11	0.22	98	0.90	3.69	1.89	0.04	0.07	C09-C12-C14
鼻咽部	29	0.42	1.71	0.61	0.05	0.05	10	0.20	0.38	0.17	0.01	0.03	C11
食管	267	3.84	10.21	4.25	0.24	0.58	95	1.29	2.45	0.71	0.02	0.04	C15
胃	583	6.54	22.69	9.91	0.40	1.13	278	3.20	10.18	3.98	0.19	0.39	C16
结直肠肛门	651	9.37	24.86	10.20	0.38	1.18	447	6.83	16.98	5.94	0.23	0.56	C18-C21
肝	709	10.21	27.52	12.42	0.79	1.45	296	5.85	11.17	4.28	0.17	0.48	C22
胆囊及其他	178	2.56	6.81	2.86	0.12	0.33	180	3.75	7.17	2.59	0.68	0.28	C23-C24
胰	323	4.65	12.38	5.95	0.31	0.64	289	5.14	9.81	3.79	0.13	0.46	C25
肺	74	1.07	2.83	1.23	0.05	0.15	17	0.24	0.64	0.18	0.06	0.02	C32
气管、支气管、肺	2476	35.68	94.73	28.79	1.62	4.78	1671	33.00	83.04	25.58	0.52	2.21	C33-C34
其他胸腔脏器	23	0.33	0.88	0.62	0.04	0.05	13	0.26	0.49	0.24	0.01	0.03	C37-C38
骨	43	0.62	1.85	0.92	0.04	0.10	38	0.69	1.13	0.43	0.02	0.05	D40-41
皮肤的黑色素瘤	14	0.20	0.54	0.25	0.02	0.03	12	0.24	0.48	0.18	0.01	0.02	C43
乳腺	7	0.10	0.27	0.12	0.01	0.01	476	9.40	17.36	8.33	0.58	0.91	C50
子宫	—	—	—	—	—	—	101	1.99	3.81	2.08	0.16	0.23	C53
子宫体及子宫颈部位	—	—	—	—	—	—	118	2.32	4.45	1.96	0.18	0.23	C54-55
卵巢	—	—	—	—	—	—	238	4.54	8.69	4.05	0.28	0.48	C56
前列腺	248	3.68	9.53	3.20	0.25	—	—	—	—	—	—	—	C61
睾丸	4	0.06	0.15	0.08	0.00	0.01	—	—	—	—	—	—	C62
肾及肾盂输尿管	213	3.07	8.15	3.96	0.18	0.42	94	1.36	3.58	1.41	0.06	0.14	C64-66,68
膀胱	209	3.08	8.08	3.05	0.08	0.28	78	1.38	2.84	0.71	0.01	0.04	C67
脑、神经组织	137	1.97	5.24	2.84	0.15	0.28	119	2.35	4.48	2.09	0.10	0.23	C70-72, D32-33, D42-43
甲状腺	16	0.23	0.61	0.33	0.02	0.04	48	0.79	1.91	0.63	0.03	0.07	C73
淋巴瘤	214	3.08	8.18	3.82	0.21	0.43	140	2.77	5.28	2.24	0.10	0.26	C80-88, 90, 96, 98
白血病	196	2.88	7.12	3.43	0.17	0.37	151	2.88	5.78	2.90	0.14	0.28	C91-95, D45-47
淋巴瘤及其他恶性肿瘤	227	3.27	8.88	4.08	0.20	0.43	193	3.81	7.28	2.81	0.14	0.27	A, D
所有恶性肿瘤	6946	100.00	285.74	144.62	5.21	11.18	5943	100.00	191.02	73.44	3.04	7.78	C00-98
所有恶性肿瘤 (除C44)	6927	98.73	285.01	144.39	5.20	11.16	5946	95.70	190.46	73.49	3.04	7.77	C00-98 excl. C44

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486 tabs on Excel

附录3-1北京市2016年恶性肿瘤死亡主要病种
Appendix Table 3-1 Incidence and mortality of cancer in Beijing, 2016

部位 Sites	男性 Male					女性 Female					ICD10		
	病例数 No. cases	频数 Freq. (%)	粗率 Crude rate/100000	标化率 Age-adjusted rate/100000	累计率 Cum. Rate (%)	病例数 No. cases	频数 Freq. (%)	粗率 Crude rate/100000	标化率 Age-adjusted rate/100000	累计率 Cum. Rate (%)			
口腔咽部 (除外鼻咽癌)	258	182	6.30	3.95	0.23	0.37	161	0.97	3.81	1.92	0.11	0.21	C06-C12, H
鼻咽癌	46	0.29	1.09	0.61	0.04	0.06	22	0.13	0.52	0.35	0.02	0.03	C11
食管	518	3.26	12.25	5.35	0.33	0.63	118	0.71	2.79	0.87	0.02	0.07	C15
胃	1124	7.07	26.57	19.94	0.62	1.43	577	3.49	13.68	6.23	0.37	0.70	C16
结直肠肛门	2358	14.83	55.75	25.91	1.40	3.13	1806	10.94	42.77	17.57	0.92	2.03	C18-21
肝胆	1007	6.40	24.04	18.95	0.65	1.37	444	2.69	10.51	4.39	0.17	0.47	C22
胆囊及其他	331	2.08	7.63	3.24	0.35	0.39	267	1.68	7.93	2.53	0.30	0.28	C23-24
胰腺	525	3.30	12.41	5.34	0.26	0.65	448	2.71	10.61	3.95	0.36	0.48	C25
大肠	996	0.98	3.69	1.80	0.13	0.23	19	0.12	0.45	0.37	0.00	0.03	C32
气管、支气管、肺	3609	22.70	83.33	37.94	1.83	4.82	2504	15.56	59.30	25.09	1.36	3.00	C33-34
其他胸部恶性肿瘤	67	0.42	1.59	0.83	0.06	0.19	42	0.25	0.89	0.52	0.03	0.06	C37-38
骨	87	0.36	1.35	1.32	0.08	0.10	37	0.22	0.88	0.95	0.03	0.06	C40-41
皮肤黑色素瘤	24	0.15	0.57	0.31	0.01	0.04	26	0.16	0.62	0.32	0.02	0.03	C43
乳腺	27	0.17	0.64	0.33	0.02	0.04	301	1.93	7.67	45.73	3.60	5.04	C50
子宫颈	—	—	—	—	—	—	—	—	—	—	—	—	C53
子宫颈及子宫部位不明	—	—	—	—	—	—	829	5.01	18.61	10.69	0.36	1.25	C54-55
卵巢	—	—	—	—	—	—	541	3.28	12.81	7.49	0.54	0.84	C56
前列腺	1000	6.97	26.20	10.95	0.32	1.45	—	—	—	—	—	—	C61
睾丸	36	0.23	0.85	0.79	0.06	0.06	—	—	—	—	—	—	C62
肾脏泌尿系统不明	882	5.42	20.38	10.72	0.71	1.28	586	3.63	13.40	6.33	0.33	0.74	C64-68, 68
膀胱	817	5.14	18.32	8.98	0.36	0.95	—	—	—	—	—	—	C67
脑、神经系统	388	2.43	9.13	6.96	0.41	0.57	514	3.11	12.17	8.07	0.59	0.80	70-72, D32-33, D42-43
甲状腺	816	5.15	19.34	16.70	1.20	1.28	2095	12.63	49.38	36.99	3.06	3.25	C73
淋巴瘤	552	3.47	13.05	6.46	0.34	0.76	440	2.66	10.42	5.00	0.30	0.58	C81-96, 98, 99, 96
白血病	453	2.85	10.71	6.75	0.36	0.62	321	1.94	7.60	5.02	0.27	0.43	C81-95, D45-47
淋巴瘤及其他恶性肿瘤	747	4.70	17.68	9.83	0.50	0.98	746	4.52	17.67	8.56	0.48	0.88	A, D
所有部位合计	35896	100.00	375.63	182.94	10.27	21.29	30594	100.00	339.08	206.61	14.02	22.27	C00-96
所有部位除前列腺	—	—	—	—	—	—	—	—	—	—	—	—	C00-96 exc C64

Male incidence

Female incidence

Male deaths

Female deaths

Flat file target format

headers

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Territory	Territory (EN)	site (CN)	site (EN)	gender	Incidence	Age Freq	Rate/100	World/10	Cur. Rate	Cur. Rate	Deaths	Crude	Age	Cur. Rate	Cur. Rate	
1	CH	口腔咽部 (除外鼻咽癌)	Oral cavity & pharynx exc nasopharynx	Male	258	182	6.30	3.95	0.23	0.37	161	0.97	3.81	1.92	0.11	0.21
2	Beijing Shi	北京市	Beijing Shi	Male	46	0.29	1.09	0.61	0.04	0.06	22	0.13	0.52	0.35	0.02	0.03
3	Beijing Shi	北京市	Beijing Shi	Female	112	0.71	2.79	0.87	0.02	0.07	57	0.34	1.68	0.62	0.03	0.07

Male incidence

Male deaths

Female incidence

Female deaths

	projected cancer drug treated patients (total China coverage rate)	projected cancer drug treated patients (bottom up calculation)	difference in results between methodologies
all other sites & unspecified			
Bladder			
Bone			
Brain, Central Nervous system			
Breast			
Cervix Uteri			
Colon, Rectum & Anus			
Esophagus			
gallbladder etc...			
Kidney & unspecified Urinary organs			
Larynx			
Leukemia			
Lip, oral cavity, Pharynx but Nasopharync			
Liver			
Lymphoma			
Melanoma of skin			
Nasopharynx			
Other Thoracic Organs			
Ovary			
pancreas			
Prostate			
Stomach			
Testis			
Thyroid Gland			
Trachea, bronchus and lung			
Uteris & unspecified			
Grand Total	5,049,633	5,019,183	-0.6%

Up to 17% difference at tumor level between the two methodologies

Whatever the release we use, we will project the data to nowadays

- We can use market sales data (IQVIA CHPA + retail or CPA computed in cycle days per tumor) and / or Universe of Physicians (public source) to project patient numbers to 2021



Assess sales of each Oncology drug across tumors		source EMR or Patient records surveys - all tumors												Volume conversion factor				
Molecule -L1 Oncology	ATC3	tumor 1	tumor 1	...	tumor 1	tumor 1	tumor 2	tumor 2	...	tumor 2	tumor 2	tumor 3	tumor 3	...	tumor 3	tumor 3	other tumors...	convert Dosage Units into nb cycles
		YR2016	YR2017		YR2020	YR2021	YR2016	YR2017		YR2020	YR2021	YR2016	YR2017		YR2020	YR2021		X Dosage units make a chemo cycle (or 30 for continuous treatment)
PACLITAXEL	L01C																	
DOCETAXEL	L01C	% of patients in each tumor on total nb patients on drug																
PEMETREXED	L01B																	
GIMERACIL+OTERACIL+TEGAFUR	L01B																	
CAPECITABINE	L01B																	
OXALIPLATIN	L01F																	
GEMCITABINE	L01B																	
TACROLIMUS	L04X																	
MYCOPHENOLATE MOFETIL	L04X																	
RITUXIMAB	L01G																	
etc...																		

Check client history of Oncology patient records surveys in China (IQVIA, IPSOS) or Electronic Medical Records on multiple tumors

Specific customization of CHPA sales data

Template for final output

For Province level output, we'll apply Tier II rates from Market Sizing Study as proxy

Tumor	2016 Measurement projected to 2021 based on IQVIA CHPA Oncology Drugs Sales															
Pancreas	Male						Female						IPSOS market sizing study metrics			
geography	Projected incidence	projected nb Yearly patients	projected treated patients	Projected cancer drug treated patients	Projected nb Yearly patients (prevalence)	projected nb deaths	Projected incidence	projected nb Yearly patients	projected treated patients	Projected cancer drug treated patients	Projected nb Yearly patients (prevalence)	projected nb deaths	coverage rate registry vs Population	rate of new patients	treatment rate	cancer drug treated rate
Beijing																
Shijiazhuang																
rest of Hebei															proxy Tier II	
Hebei total																
Tianjin																
Shenyang																
rest of Liaoning															proxy Tier II	
Liaoning total																
Ji'nan																
rest of Shandong															proxy Tier II	
Shandong total																
Shanghai																
Hangzhou																
Ningbo																
Wenzhou																
rest of Zhejiang															proxy Tier II	
Zhejiang total																
Chongqing																
Foshan																
Guangzhou																
rest of Guangdong															proxy Tier II	
Guangdong																
...																
Total China																

And you can also consult result by City, province, region...

- Deliverable : Excel table (2453 rows with 2017 book, x10 with full scrap) with some pre-filtered pivot tables for client to explore the data, avoiding double counts

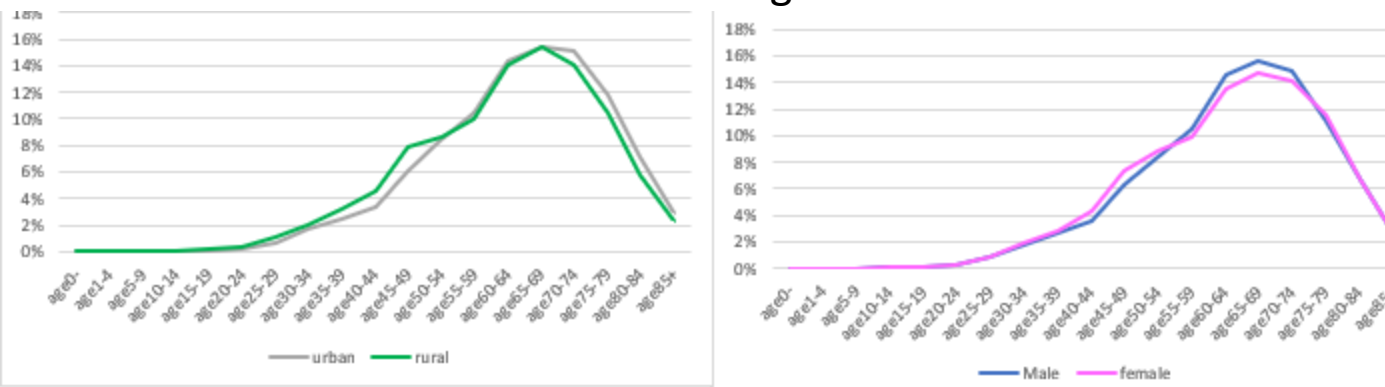
channel	ICD-10	geography	geography main	Province	region	tumor site	Site	Gender	incidence	mortality	Yearly nb patients	mortality ratio	population cover	province popul	coverage rate	projected incidence	projected nb Yearly patients	Diagnosis of focus	Diagnosis label Market sizing study	rate of new patients	rate of treated patients
19 city	C81-96,88,	Changle	Fuzhou	Fujian	East	Lymphoma		Male	17	11	19	59.02%		0.229645	0.229645	74	81	NHL	NHL	91%	
20 city	C91-C95	Changle	Fuzhou	Fujian	East	Leukemia		Male	13	6	14	41.43%		0.229645	0.229645	57	63	ALL	ALL	90%	

channel	(Multiple Items)			channel	total CN (Multiple Items)				
tumor site	Sum of projected nb Yearly patients	Sum of projected treated patients	Sum of projected cancer drug treated patients	tumor site	Sum of incidence	Sum of projected nb Yearly patients	Sum of projected treated patients	Sum of projected cancer drug treated patients	

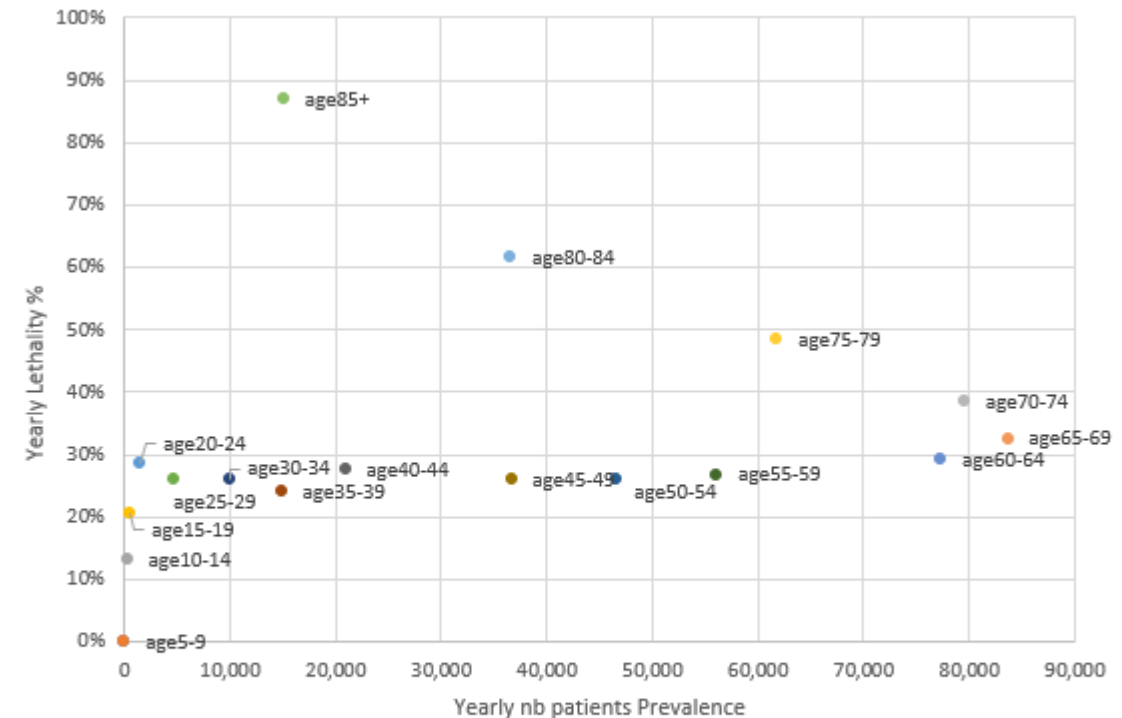
Additional data entry on age groups can provide interesting insights

Cancer registry data only

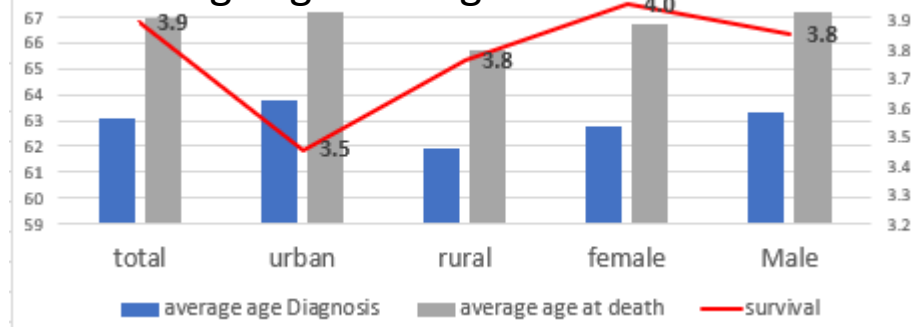
Distribution of ages for Cancer A



Cancer registry combined with Market Sizing Study



Average age at Diagnosis and death + survival



source : China cancer Registry 2017, IPSOS Oncology Market Sizing Study 2015
 Prevalence : Cancer registry incidence / IPSOS market sizing study rate of new patients (total China)
 Lethality : Cancer registry mortality / Yearly prevalence

Cost : all the characteristics of a syndicated project

- China Cancer Registry data is a public source. You are invited to order the book so you can consult all the data... on paper. Cost, 208 RMB for 2019 book

[中国肿瘤登记年报_购买中国肿瘤登记年报相关商品_孔夫子旧书网](https://m.tb.cn/h.4OXxXav?sm=d3b12a)

<https://m.tb.cn/h.4OXxXav?sm=d3b12a> 2019中国肿瘤登记年报人民卫生出版社国家癌症中心9787117309707

- Syndicated section of the project
- Complimentary Contribution of L.E.K Healthcare Strategic consulting firm to enable digitalize the China Cancer registry, otherwise only available on paper format
- Carole Gabay Market Analytics Capabilities in partnership with DRCOM:
 - data entry, desk research, design and expertise
 - Projected Incidence, mortality and Prevalence by tumor at city and province level, with 2017 benchmarks for 20 larger cities
- IPSOS Healthcare China 2015 Oncology Market Sizing Study (to be contracted directly with IPSOS)
- Contributions above can be bundled in one single invoice from IPSOS Healthcare
- Customized by client
- Focus on the tumors of focus, to project the patient numbers from 2016 to nowadays, with the input of other secondary market data sources

Carole Gabay Business Analytics Capabilities

In partnership with DRCOM

.Thank you

FOR MORE INFORMATION, PLEASE VISIT WWW.DRCOMGROUP.COM



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