

Antimicrobial Consumption (AMC) Surveillance in Hong Kong - Wholesale Supply Data (2020)

January 2022



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Background



Background

- The Hong Kong Strategy and Action Plan on Antimicrobial Resistance 2017-2022 was issued in July 2017
- Activity 3.1.2 suggests collecting antibiotic supply data from different sectors as proxy to reflect the overall usage and trend of antimicrobial usage
- Past summaries published in CHP website in 2018 (Year 14-16), 2019 (Year 14-17) and 2020 (Year 14-18)
- This presentation briefly accounts the surveillance findings for year 2016-2020
- Since the Action Plan was published in July 2017, the situation of 2016 has been chosen as baseline for comparison





Methodology



Scope of Data

- Antimicrobials wholesale supply data from licensed drug wholesalers (ever supplied antimicrobials under monitoring) in year 2020 to the following sectors were included:
 - Department of Health (DH)
 - Hospital Authority (HA)
 - Private hospitals
 - Private doctors (mutually exclusive with Private Hospitals)
 - Dentists
 - Veterinary surgeons
 - Community pharmacies
 - Farmers (who had the Antibiotics Permits issued by the Director of Agriculture, Fisheries and Conservation Department)



Definitions

- Surveillance period is defined by calendar year
- Anatomical Therapeutic Chemical (ATC) classification
 - This system is developed by the World Health Organisation (WHO)
 - It divided drugs into different groups according to the organ or system on which they act and their therapeutic, pharmacological and chemical properties
- Defined Daily Dose (DDD)
 - A standardised unit adopted by WHO to facilitate comparison of drug usage
 - Defined as “the assumed average maintenance dose per day for a drug used for its main indication in adults”
 - Each antimicrobial was assigned a DDD value per route of administration
 - DDD values are updated by WHO annually[#]
 - As the year 2021 version of ATC/DDD was adopted in this report, the DDD figures of previous years have been re-calculated which would be different from the figures presented in the past reports
 - For example, DDD value has been newly assigned for amoxicillin 250mg/ cloxacillin 250mg that 4 tablets equal to 1 DDD

[#] https://www.whocc.no/atc_ddd_alterations__cumulative/ddd_alterations/



Antimicrobials monitored

- Antimicrobials fall under the following WHO ATC classification (2020) were collected from licensed drug wholesalers:
 - J01 – Antibacterials for systemic use
 - P01AB – Nitroimidazole derivatives, agents against amoebiasis and other protozoal diseases
 - A07AA – Antibiotics, intestinal antiinfectives
- Antimicrobials which can be administered by the following routes were included as recommended by WHO
 - Oral
 - Parenteral
 - Rectal
 - Inhalation
- Preparations for topical use were excluded



WHO AWaRe Categorisation

- WHO introduced the AWaRe categorisation in 2017 for antibiotic stewardship at local, national and global levels with the aim of reducing antimicrobial resistance
- The three categories are:
 - Access
 - Indicates the antimicrobials of choice for common infections as first- or second-choice empiric treatment options
 - Watch
 - Includes most of the “highest-priority critically important antimicrobials” for human medicine and veterinary use. These antimicrobials are recommended only for specific, limited indications
 - Reserve
 - Should only be used as a last resort when all other antimicrobials have failed
- Antimicrobials not listed under WHO AWaRe were grouped as “Others”
- WHO encourages countries or regions to work towards to have 60% or more of the overall AMC under Access and reduce the usage of antimicrobials under Watch and Reserve
- WHO has updated the list of AWaRe classification antibiotics in 2021, which was adopted in this report



Antimicrobial resistance is a global crisis



WHO's AWaRe tool can help countries tackle it by prioritizing how antibiotics should be used.



ACCESS

should be
always available

Access category antibiotics should be the preferred choice for common and serious infections.



WATCH

must be
used sparingly

Watch and Reserve category antibiotics are either at higher risk of resistance or too precious to use all the time.



RESERVE

only as
a last resort



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Broad-spectrum Antimicrobials (Big Guns)

The following broad-spectrum antimicrobials are important on treating resistant infections and being monitored in AMU surveillance with HA Dispensing Data. They are examined separately in this surveillance:

- Piperacillin/tazobactam
- Ceftazidime
- Cefoperazone/sulbactam
- Cefepime
- Ceftaroline fosamil
- Ceftolozane/tazobactam
- Ceftazidime/avibactam
- Meropenem
- Ertapenem
- Imipenem/cilastatin
- Vancomycin
- Linezolid
- Daptomycin
- Colistin
- Teicoplanin



Measurement

- The following units were used:
 - Overall quantity of antimicrobials supplied to various sectors: **DDD***
 - Supply quantity after considering the annual mid-year population of Hong Kong: **DDD per 1,000 inhabitants per day (DID)**
- The following measurements were calculated:
 - Overall wholesale supply quantity
 - Antimicrobials wholesale supply by different grouping
 - Distribution by WHO AWaRe categorisation
 - Distribution by Sector
 - ATC Pharmacological Subgroup
 - 10 most supplied antimicrobials
 - Wholesale supply quantity of selected broad-spectrum antimicrobials

*The ATC/DDD Index (2020) published by the WHO Collaborating Centre for Drug Statistics Methodology were adopted



Statistical Method

- Year 2016 was chosen as the baseline for comparison as the Hong Kong Strategy and Action Plan on Antimicrobial Resistance 2017-2022 was issued in mid-2017 and such decision was endorsed by the High Level Steering Committee (HLSC)
- Following the practice of ECDC, compound annual growth rate (CAGR) is used to illustrate average annual rate of change when comparing antimicrobials dispensed in 2020 with that in 2016.

$$CAGR = (SU_{2020} / SU_{2016})^{(1/4)} - 1$$

- In this equation, SU_{2020} is the total amount of antimicrobials supplied in year 2020, SU_{2016} is the total amount of antimicrobials supplied for year 2016

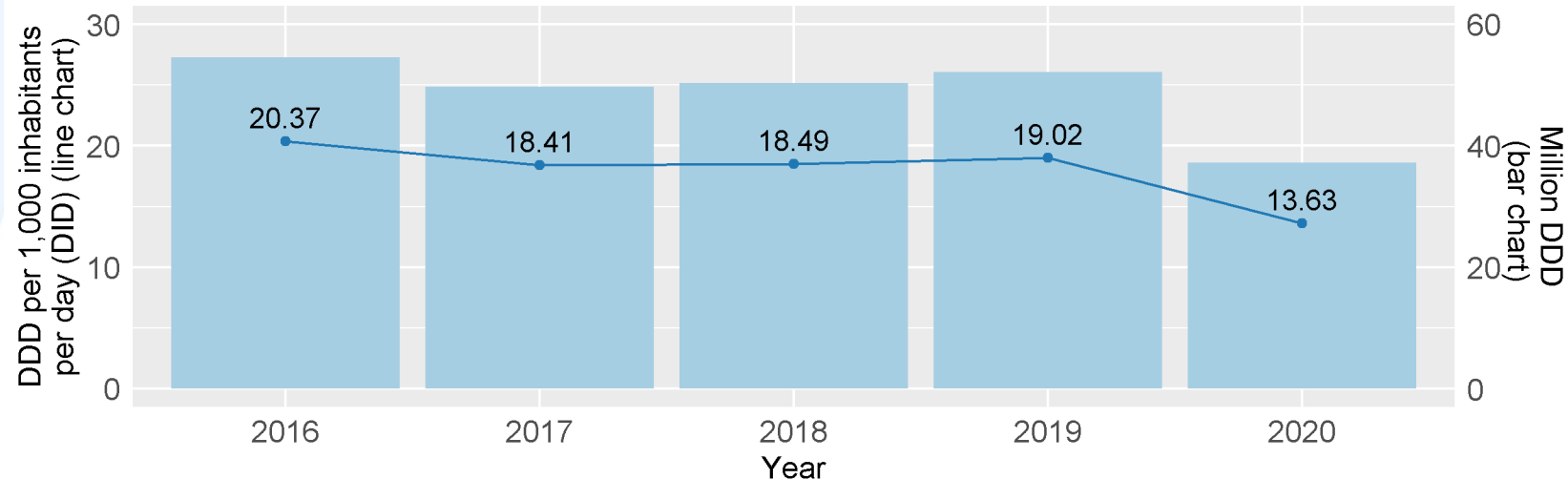


Results

1. Overall antimicrobials wholesale supply (2016-2020)



1. Overall antimicrobials wholesale supply (2016-2020)



	Year					Average annual change	p-value	Compound annual growth rate (16 to 20)
	2016	2017	2018	2019	2020			
DDD in million*	54.54	49.68	50.29	52.11	37.22	-	-	-9.1%
DID*	20.37	18.41	18.49	19.02	13.63	-1.288	-	-9.6%

* Non-human use antimicrobials supplied in Hong Kong were excluded.

- Only p-values with statistical significance will be shown

- A drastic decrease was observed in the overall supply in 2020 during the pandemic of COVID-19 when compared with that of 2019 (- 5.39 DID, ↓28.3%)
- 9.6% decrease (CAGR for DID) in overall antimicrobials wholesale supply in Hong Kong was observed from 2016 and 2020



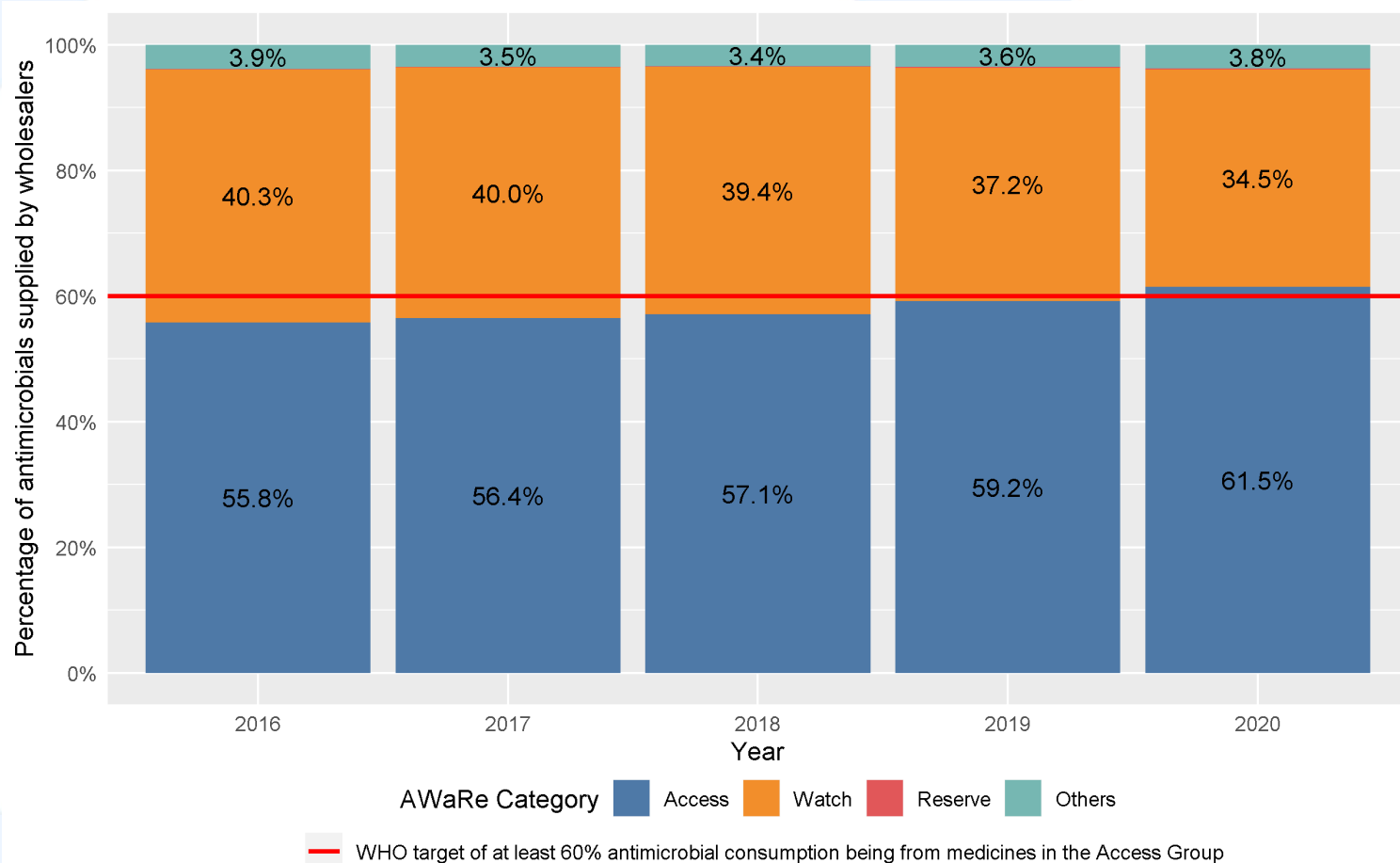
Results

2A. Antimicrobials wholesale supply (2016-2020)
- Distribution by WHO AWaRe categorisation



2A. Antimicrobials wholesale supply (2016-2020) 衛生防護中心 Centre for Health Protection

- Distribution by WHO AWaRe categorisation



- Antimicrobials under Access constituted 55.8% of all antimicrobials supplied in 2016 and increased to 61.5% in 2020
- The proportion of antimicrobials under Watch decreased steadily from 40.3% in 2016 to 34.5% in 2020

2A. Antimicrobials wholesale supply (2016-2020) 衛生防護中心 Centre for Health Protection

- Distribution by WHO AWaRe categorisation

AWaRe Categorisation	DDD per 1,000 inhabitants per day (DID)*					Average annual change	p-value	Compound annual growth rate (16 to 20)
	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020			
Access	11.36	10.39	10.55	11.25	8.38	-0.511	-	-7.3%
Watch	8.20	7.36	7.28	7.07	4.70	-0.051	-	-13.0%
Reserve	0.02	0.02	0.02	0.02	0.02	0.002	<0.05	10.7%#
Others	0.79	0.64	0.64	0.68	0.52	-0.728	-	-9.9%

* Non-human use antimicrobials supplied in Hong Kong were excluded.

CAGR figure for Reserve antimicrobials has to be interpreted with caution, as number of Reserve antimicrobials increased from 5 in 2016 to 10 in 2020

- Only p-values with statistical significance will be shown

- The supply of antimicrobials under Access and Watch showed decrease of 7.3% and 13.0% in CAGR from 2016 to 2020 respectively
- As the total number of antimicrobials under Reserve supplied in Hong Kong increased from five in 2016 to ten in 2020. Therefore, the CAGR figure must be interpreted with caution



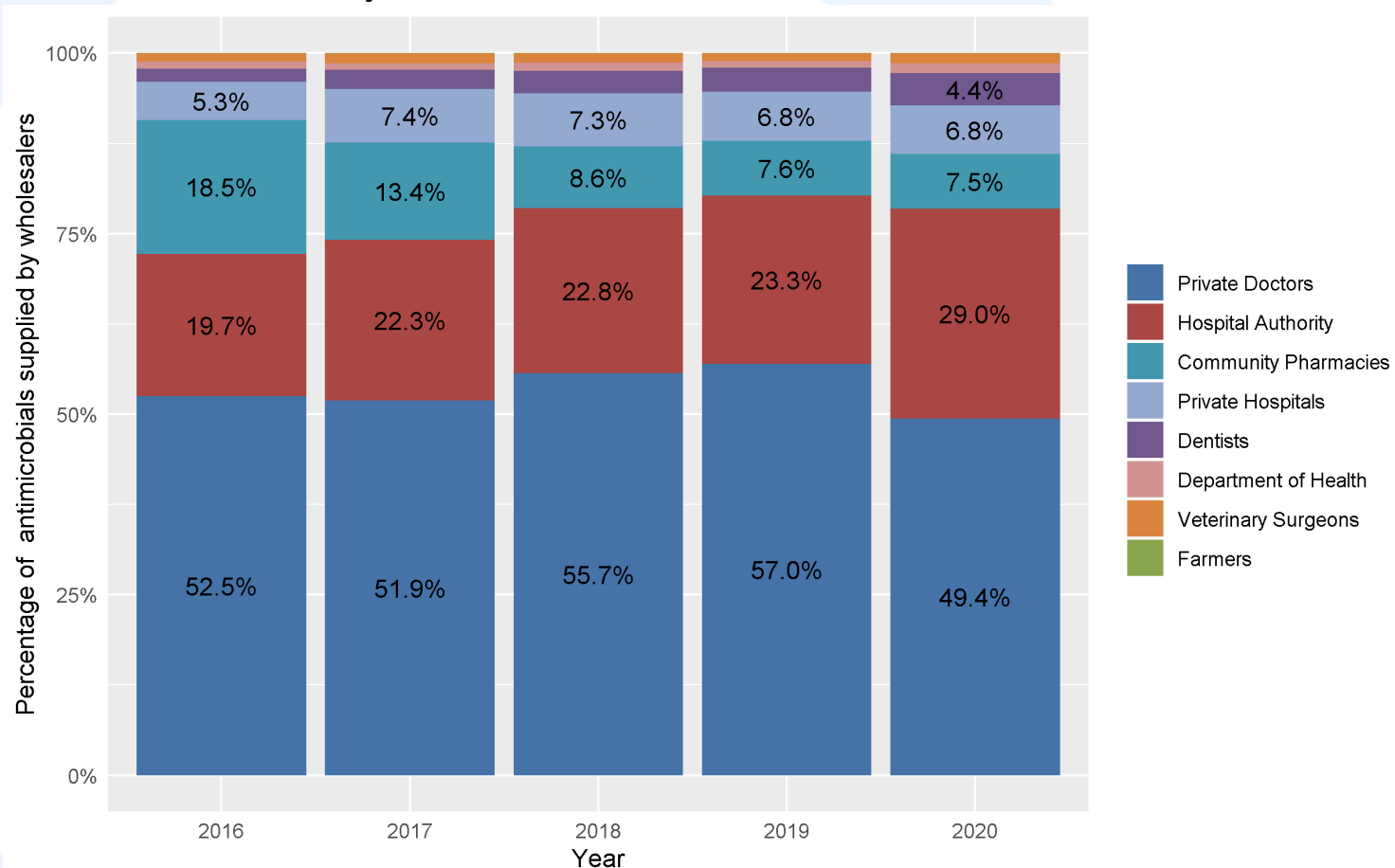
Results

2B. Antimicrobials wholesale supply (2016-2020)
- Distribution by Sector



2B. Antimicrobials wholesale supply (2016-2020) 衛生防護中心 Centre for Health Protection

- Distribution by Sector



- In 2020, 49.4% of antimicrobials supplied in Hong Kong went to private doctors, followed by Hospital Authority (29.0%) and community pharmacies (7.5%)
- Percentage of antimicrobials supplied to community pharmacies decreased gradually from 18.5% in 2016 to 7.5% in 2020



2B. Antimicrobials wholesale supply (2016-2020) 衛生防護中心 Centre for Health Protection

- Distribution by Sector

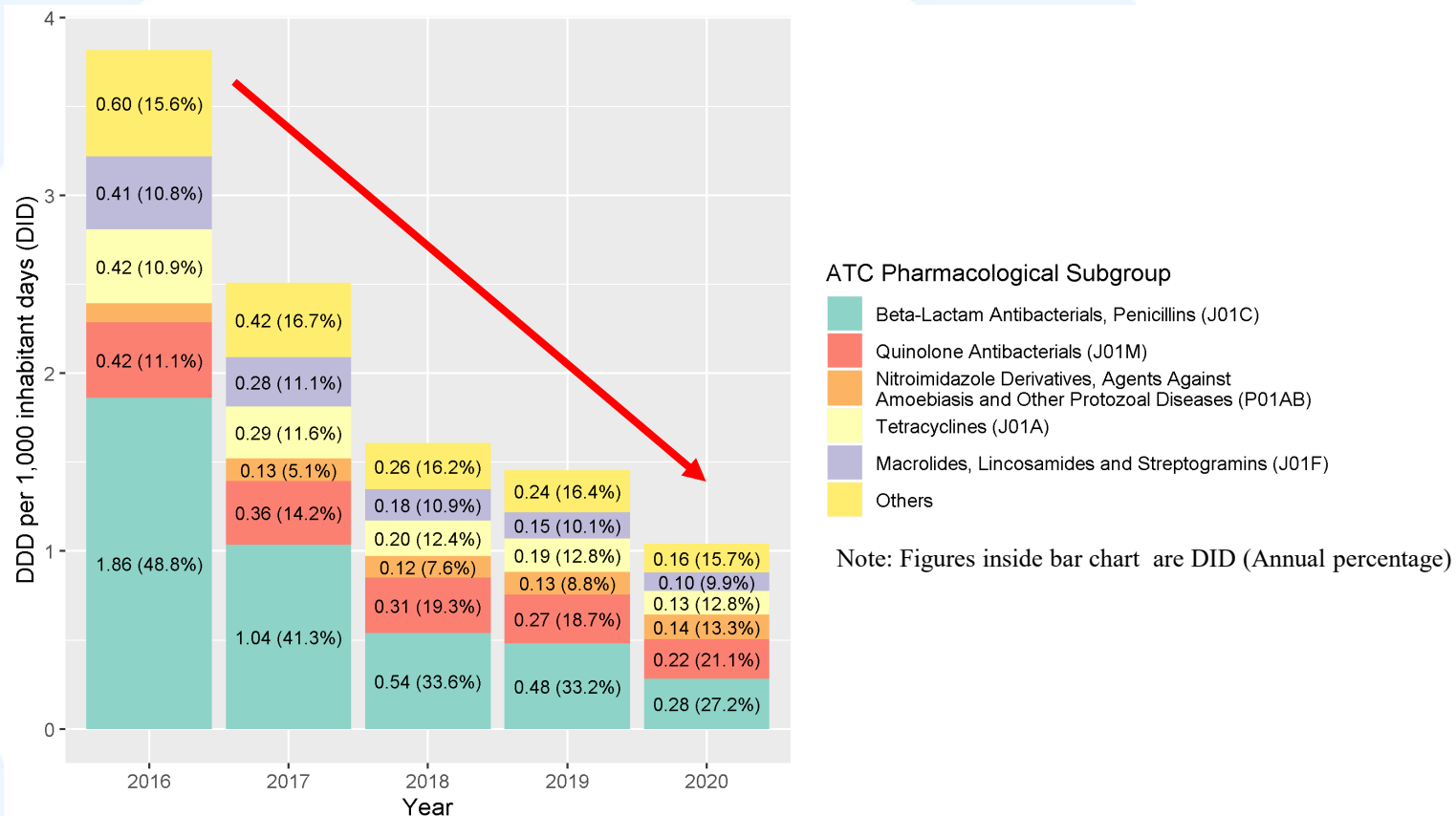
	DDD per 1,000 inhabitant days (DID)					Average annual change	p-value	CAGR (16 to 20)
	Year	Year	Year	Year	Year			
	2016	2017	2018	2019	2020			
Human-use sectors								
Private Doctors	10.82	9.69	10.44	10.96	6.83	-0.670	-	-10.9%
Hospital Authority	4.07	4.17	4.27	4.47	4.01	0.019	-	-0.4%
Community Pharmacies	3.82	2.51	1.61	1.46	1.04	-0.660	<0.05	-27.7%
Private Hospitals	1.09	1.38	1.38	1.31	0.93	-0.040	-	-3.9%
Dentists	0.38	0.50	0.58	0.64	0.61	0.062	<0.05	12.9%
Department of Health	0.19	0.17	0.21	0.17	0.19	0.001	-	0.3%

- Only p-values with statistical significance will be shown

- Drastic decrease from 2019 to 2020 was observed in private doctors (37.7%), private hospitals (28.6%) and community pharmacies (28.4%)
- Among the supply for human use, supply to dentists showed the sharpest increase of 12.9% while supply to community pharmacies showed the sharpest decrease of 27.7% in CAGR

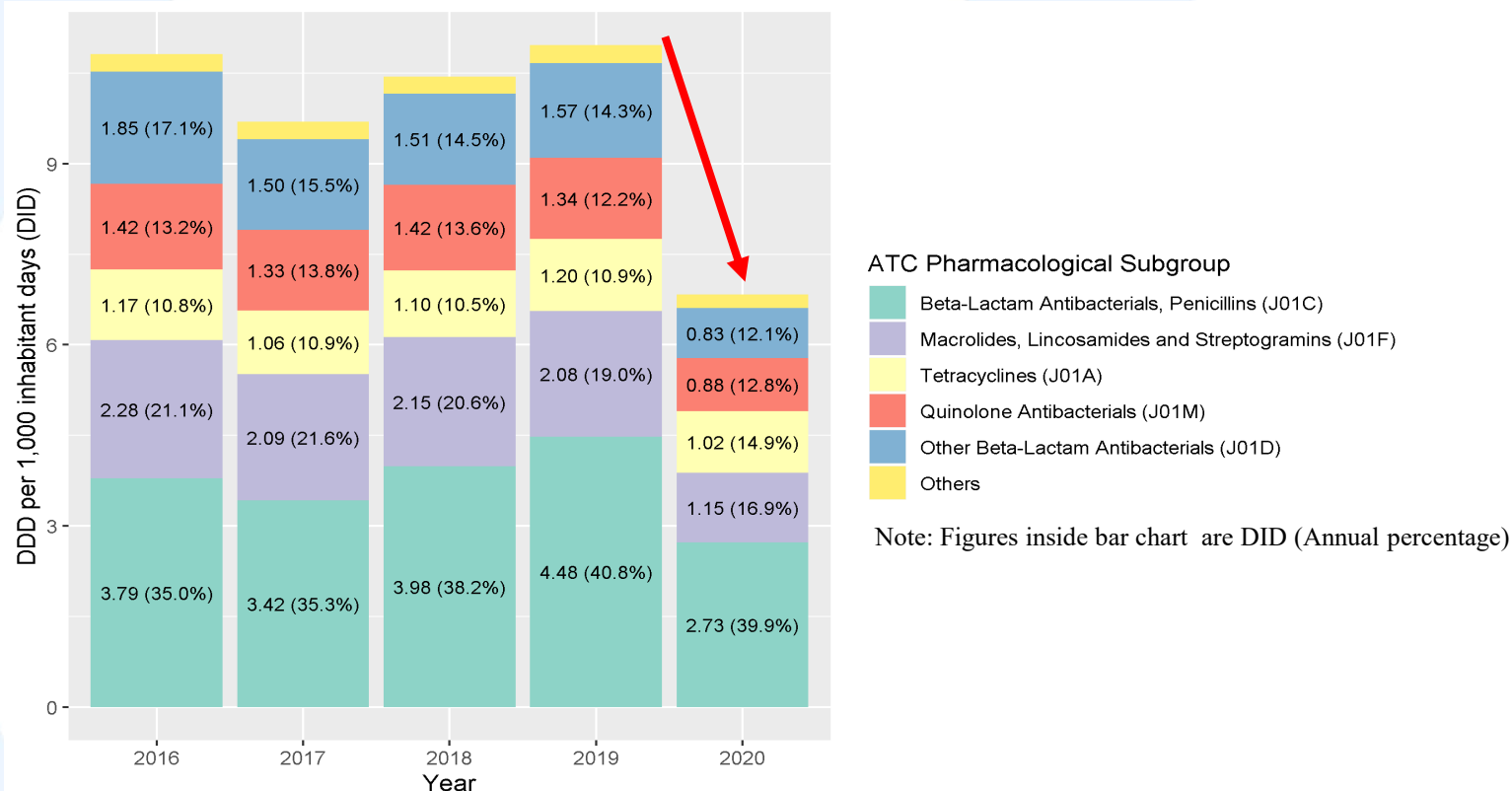


Antimicrobials wholesale supply for Community Pharmacies (by ATC Pharmacological Subgroup)



- When analysed by sectors, an obvious decrease was observed with community pharmacies from 2019 to 2020, and from 2016 to 2020
- Also an obvious continuous decrease could be seen from 2016 to 2020 (from 3.82 to 1.04 DID, ↓72.7%), contributed by almost all ATC pharmacological subgroups, especially beta-lactam antibacterials, penicillins (J01C) (↓84.8%)
- Smaller magnitudes of decrease could be seen with macrolides, lincosamides and streptogramins (J01F), and tetracyclines (J01A) and quinolones (J01M)

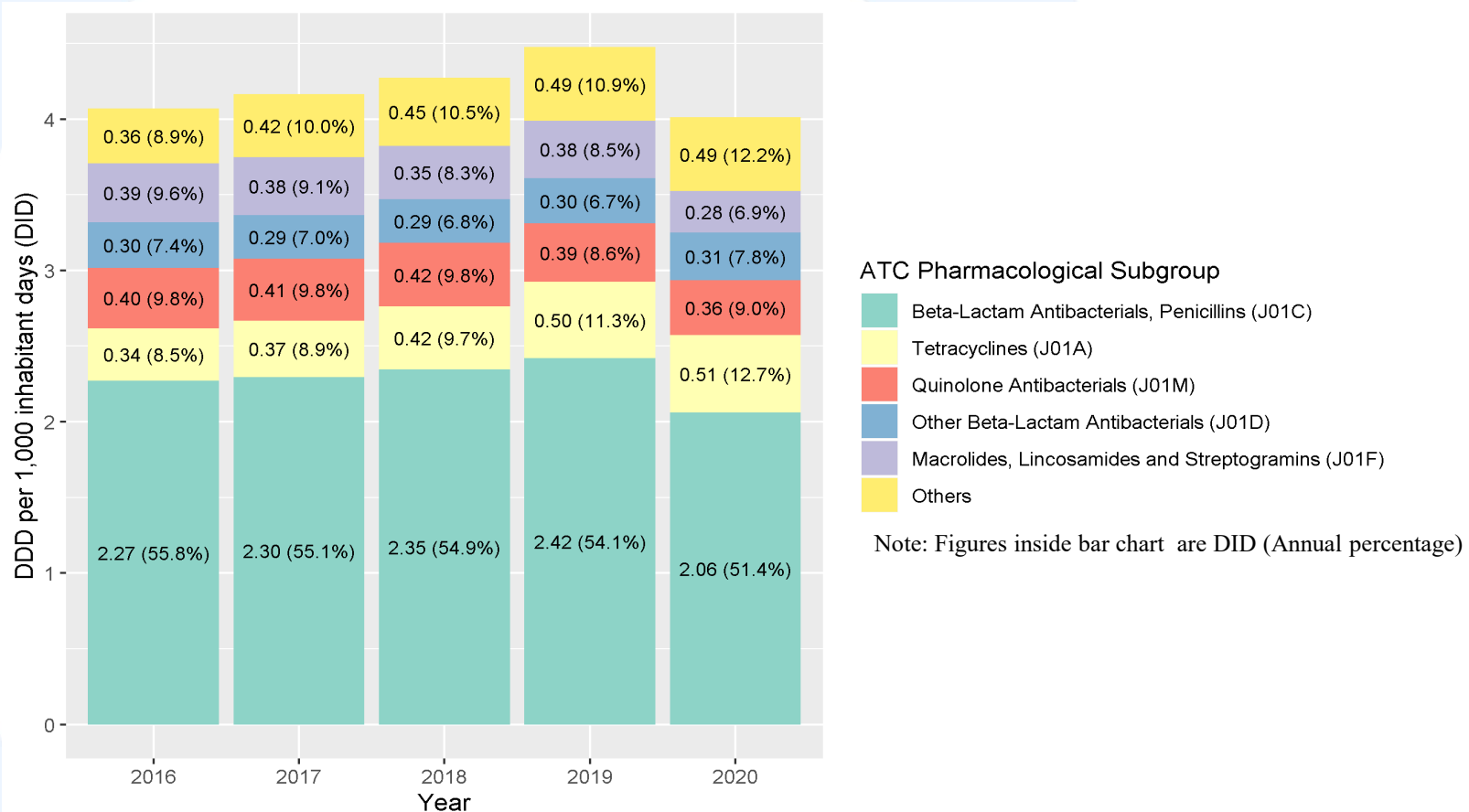
Antimicrobials wholesale supply for Private Doctors (by ATC Pharmacological Subgroup)



- For private doctors, drastic decrease was observed from 2019 to 2020, opposite to the rising trend from 2017 to 2019
- Mainly contributed by beta-lactam antibacterials, penicillins (J01C) (\downarrow 1.75DID, 39.0%), macrolides, lincosamides and streptogramins (J01F) (\downarrow 0.93DID, 44.5%), other beta-lactam antibacterials (J01D) (\downarrow 0.75DID, 47.2%), and quinolones (J01M) (\downarrow 0.46DID, 34.6%)

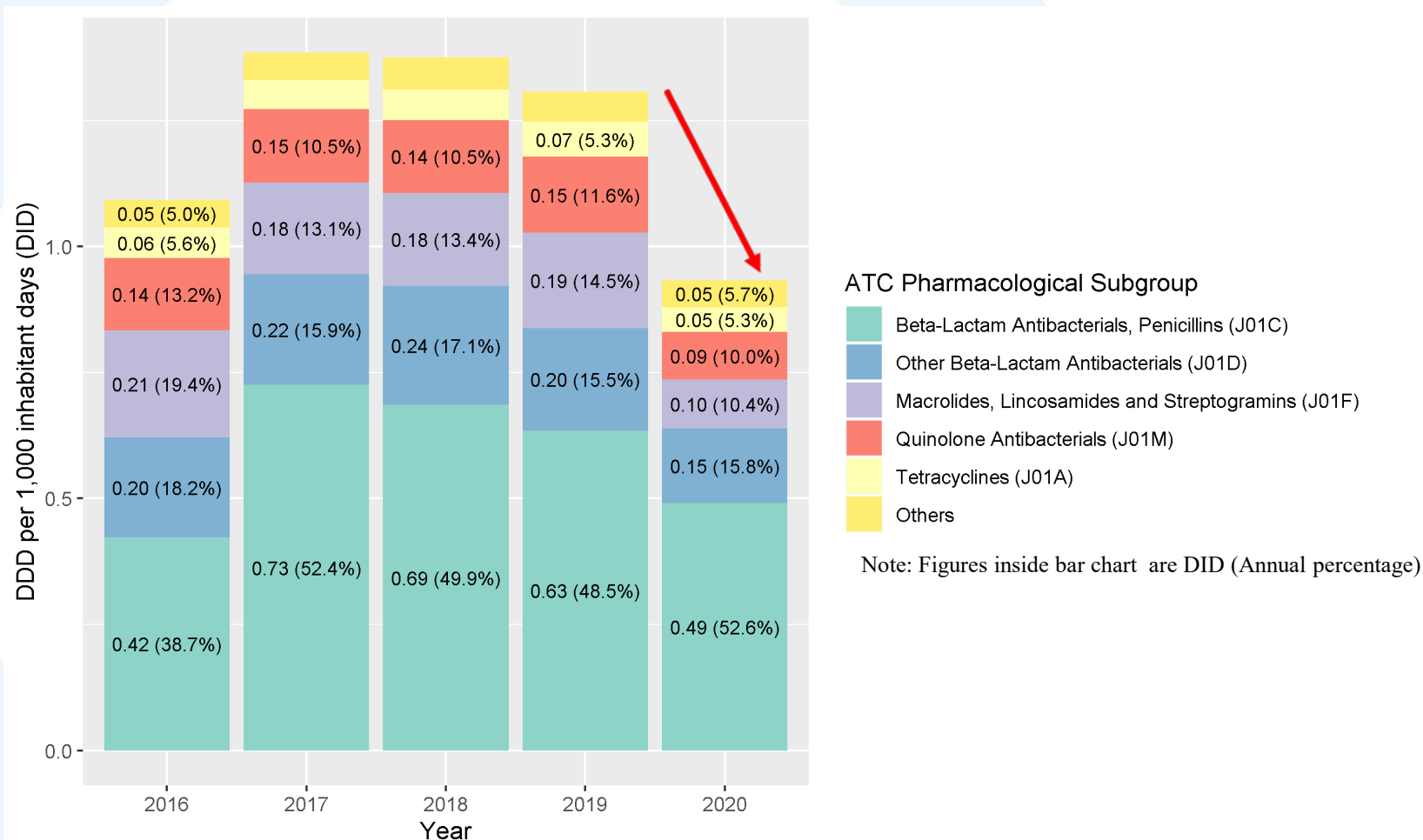


Antimicrobials wholesale supply for Hospital Authority (by ATC Pharmacological Subgroup)



- For Hospital Authority, the decrease from 2019 to 2020 was relatively mild
- The most obvious decrease was the beta-lactam antibacterials, penicillins (J01C) ($\downarrow 0.36$ DID, 14.7%), while other groups remained rather stable in 2020

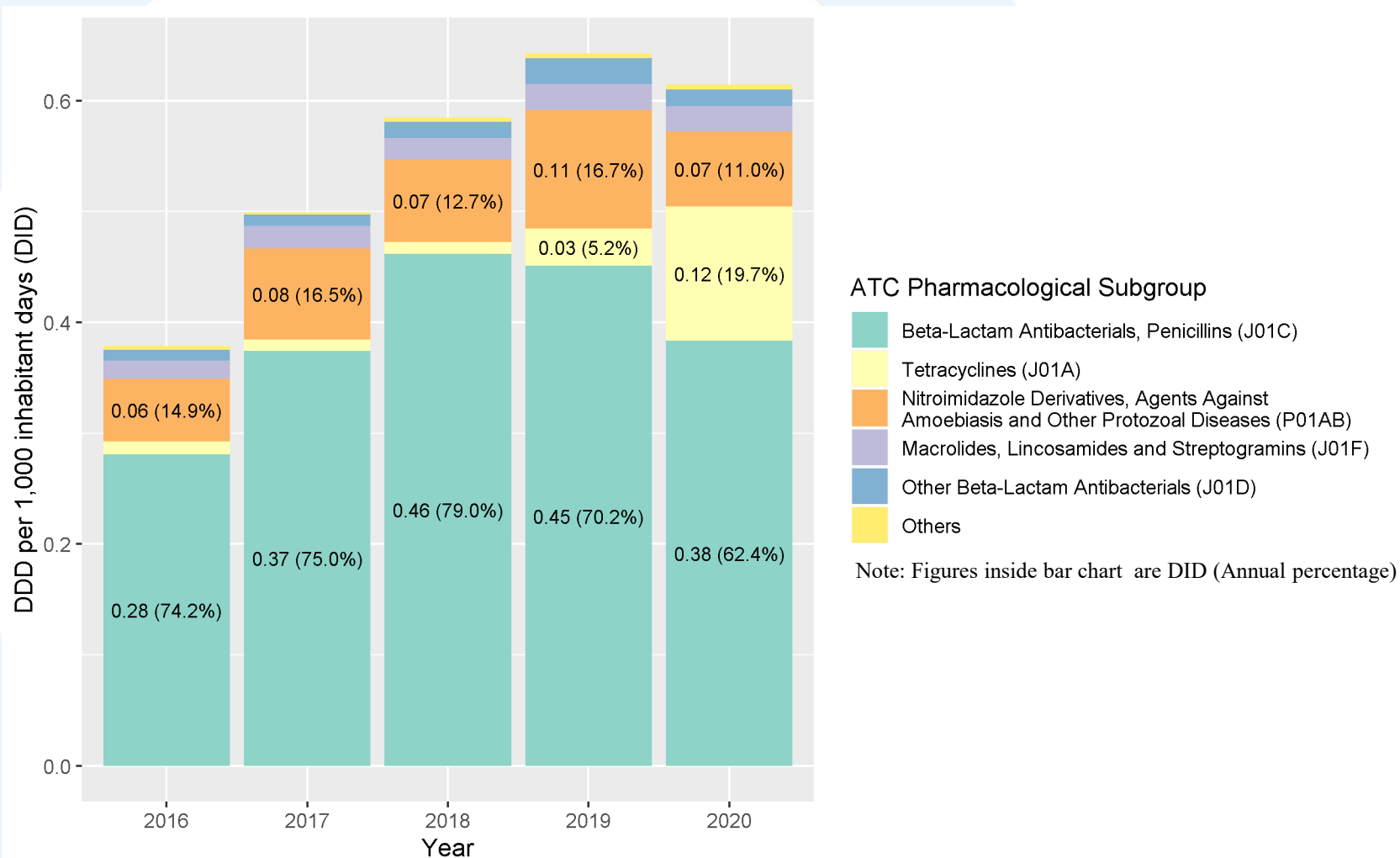
Antimicrobials wholesale supply for Private Hospitals (by ATC Pharmacological Subgroup)



- For private hospitals, a drastic decrease was observed from 2019 to 2020 involving almost all ATC pharmacological subgroups, with beta-lactam antibacterials, penicillins (J01C) decreased most ($\downarrow 0.14$ DID, 22.6%), followed by macrolides, lincosamides and streptogramins (J01F) ($\downarrow 0.09$ DID, 48.5%)

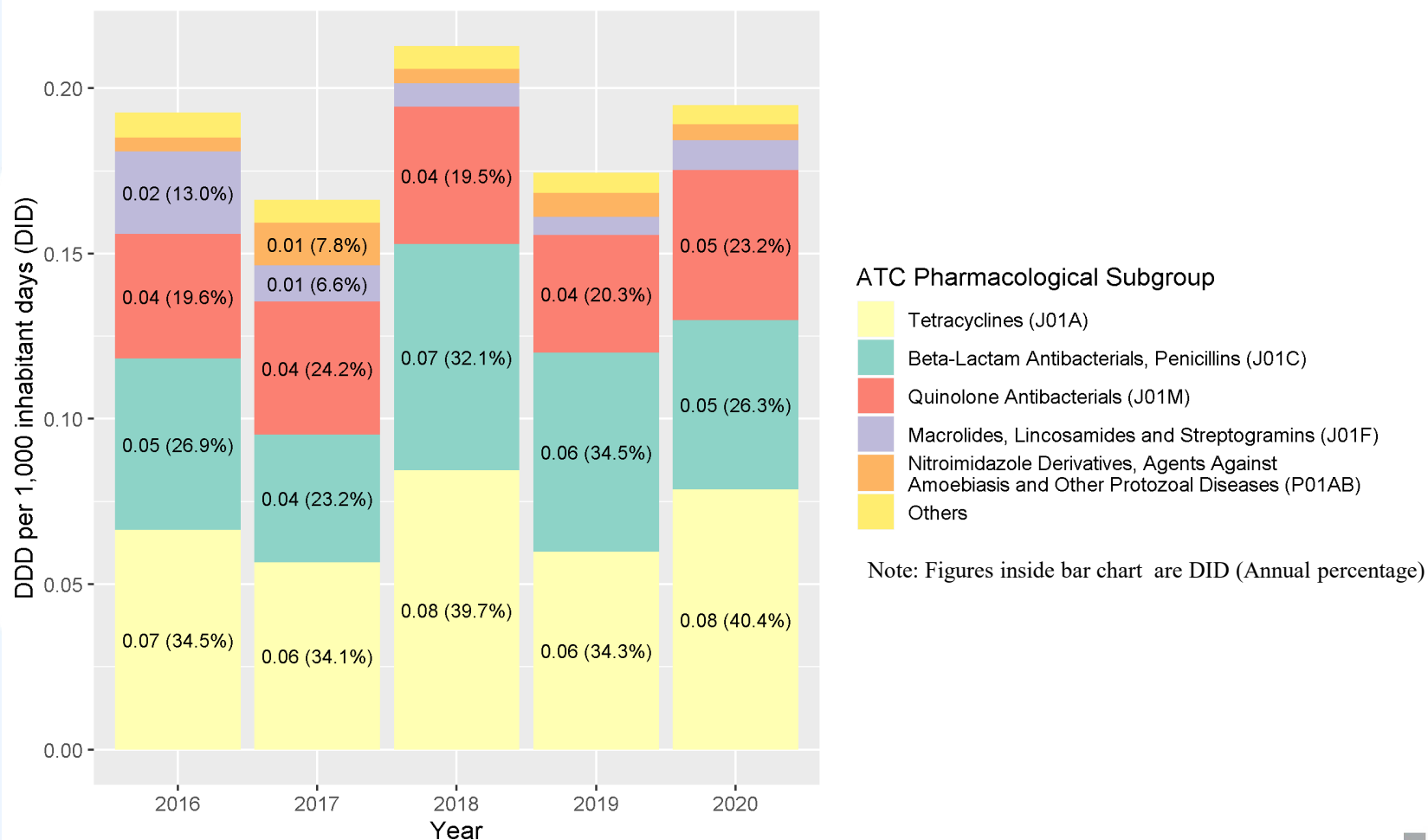


Antimicrobials wholesale supply for Dentists (by ATC Pharmacological Subgroup)



- For dentists, all ATC pharmacological subgroups decreased mildly from 2019 to 2020, except tetracyclines (J01A), but the absolute quantity is small

Antimicrobials wholesale supply for Department of Health (by ATC Pharmacological Subgroup)



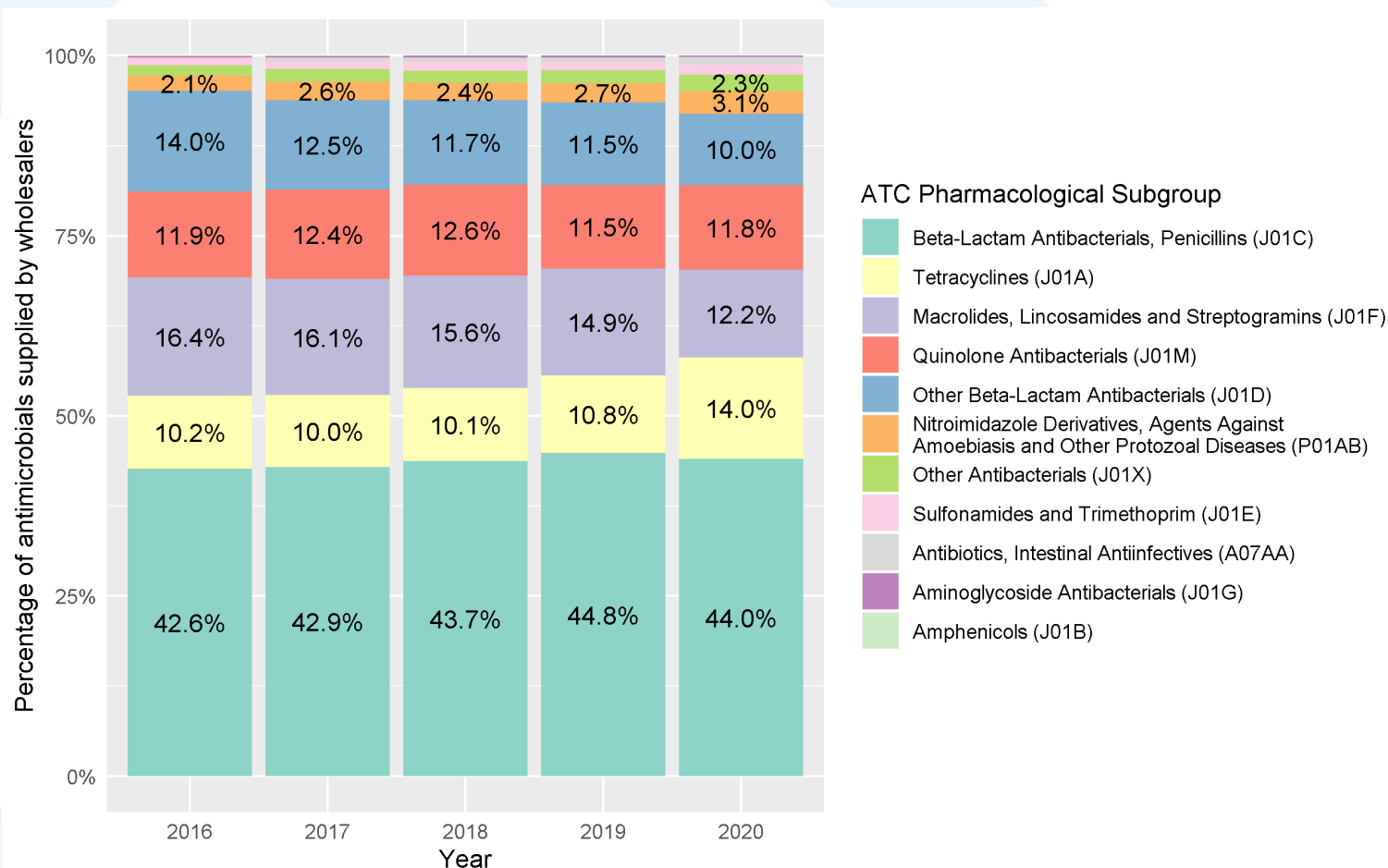
- For DH, a mild increase was observed from 2019 to 2020 but the results should be interpreted with caution as the absolute change for each group is very small

Results

2C. Antimicrobials wholesale supply in Hong Kong
(by ATC Pharmacological Subgroup)



2C. Antimicrobials wholesale supply (2016-2020) 衛生防護中心 - by ATC Pharmacological Subgroup



- In 2020, beta-lactam antibacterial, penicillins (J01C) was the most commonly supplied antimicrobial group (44.0%) by wholesale, followed by tetracyclines (J01A) (14.0%), macrolides, lincosamides and streptogramins (J01F) (12.2%), quinolone antibacterials (J01M) (11.8%), and other beta-lactam antibacterials (J01D) (10.0%)



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2C. Antimicrobials wholesale supply (2016-2020) 衛生防護中心 Centre for Health Protection

- by ATC Pharmacological Subgroup

ATC Pharmacological Subgroup		DDD per 1,000 inhabitant days (DID)					Average annual change	p-value	CAGR (16 to 20)
Code	Description	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020			
J01C	Beta-Lactam Antibacterials, Penicillins	8.68	7.89	8.09	8.52	6.00	-0.473	-	-8.8%
J01A	Tetracyclines	2.07	1.85	1.87	2.05	1.91	-0.011	-	-2.0%
J01F	Macrolides, Lincosamides and Streptogramins	3.34	2.96	2.89	2.82	1.66	-0.349	-	-16.0%
J01M	Quinolone Antibacterials	2.43	2.29	2.34	2.19	1.60	-0.175	-	-9.9%
J01D	Other Beta-Lactam Antibacterials	2.85	2.30	2.17	2.19	1.36	-0.309	<0.05	-16.9%
P01AB	Nitroimidazole Derivatives, Agents Against Amoebiasis and Other Protozoal Diseases	0.43	0.47	0.44	0.51	0.42	0.002	-	-0.5%
J01X	Other Antibacterials	0.29	0.32	0.32	0.34	0.32	0.007	-	1.8%
J01E	Sulfonamides and Trimethoprim	0.21	0.19	0.22	0.21	0.18	-0.004	-	-3.7%
A07AA	Antibiotics, Intestinal Antiinfectives	<0.005	0.10	0.12	0.12	0.14	0.031	-	NA [#]
J01G	Aminoglycoside Antibacterials	0.05	0.05	0.05	0.05	0.03	-0.004	-	-12.6%
J01B	Amphenicols	<0.005	<0.005	<0.005	<0.005	-	-0.002	<0.05	-
J01R	Combinations of Antimicrobials*	-	-	-	-	-	-	-	-
	Total	20.37	18.41	18.49	19.02	13.63	-1.288	-	-9.6%

Note: - Only p-values with statistical significance will be shown

Antimicrobials supplied for non-human use in Hong Kong (e.g. veterinary surgeons and farmers) were not included

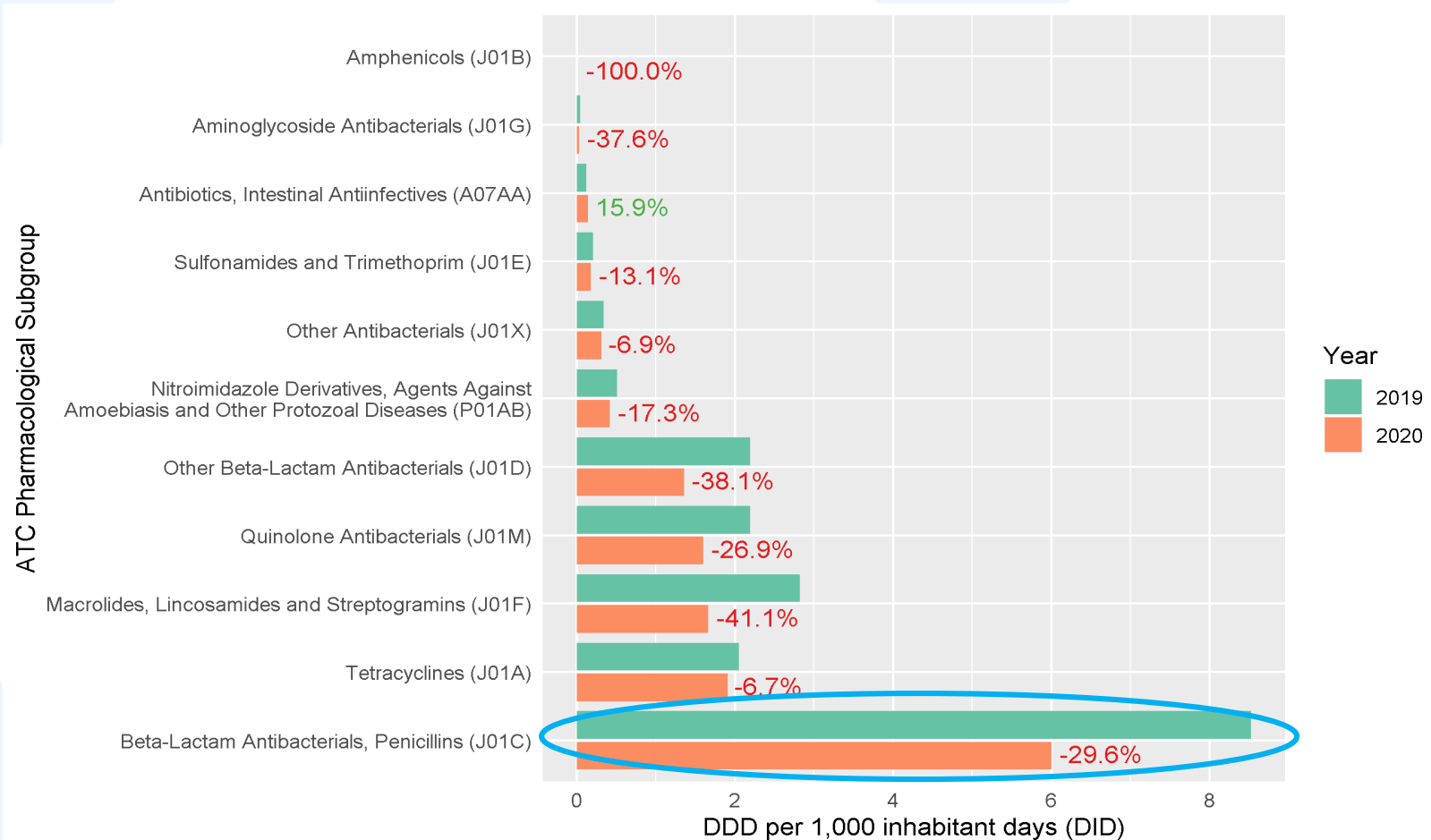
* There was no registered product under "Combinations of Antimicrobials" (J01R) in Hong Kong

The CAGR for antimicrobials under A07AA is not applicable as the 2016 figure was not complete

- Antimicrobials under J01X (Other Antibacterials) increased most (1.8% in CAGR)
- Antimicrobials under J01F (Macrolides, Lincosamides and Streptogramins) and J01D (Other Beta-Lactam Antibacterials) decreased most (-16.0% and -16.9% in CAGR respectively)
- When assessing the average annual change, antimicrobials under J01D (Other Beta-Lactam Antibacterials) and J01B (Amphenicols) reported annual average reduction of 0.309 and 0.002 DID respectively with statistical significance



2C. Antimicrobials wholesale supply (19 vs 20) - by ATC Pharmacological Subgroup



- When compared with that of 2019, beta-lactam antibacterials, penicillins (J01C) decreased most in terms of DID

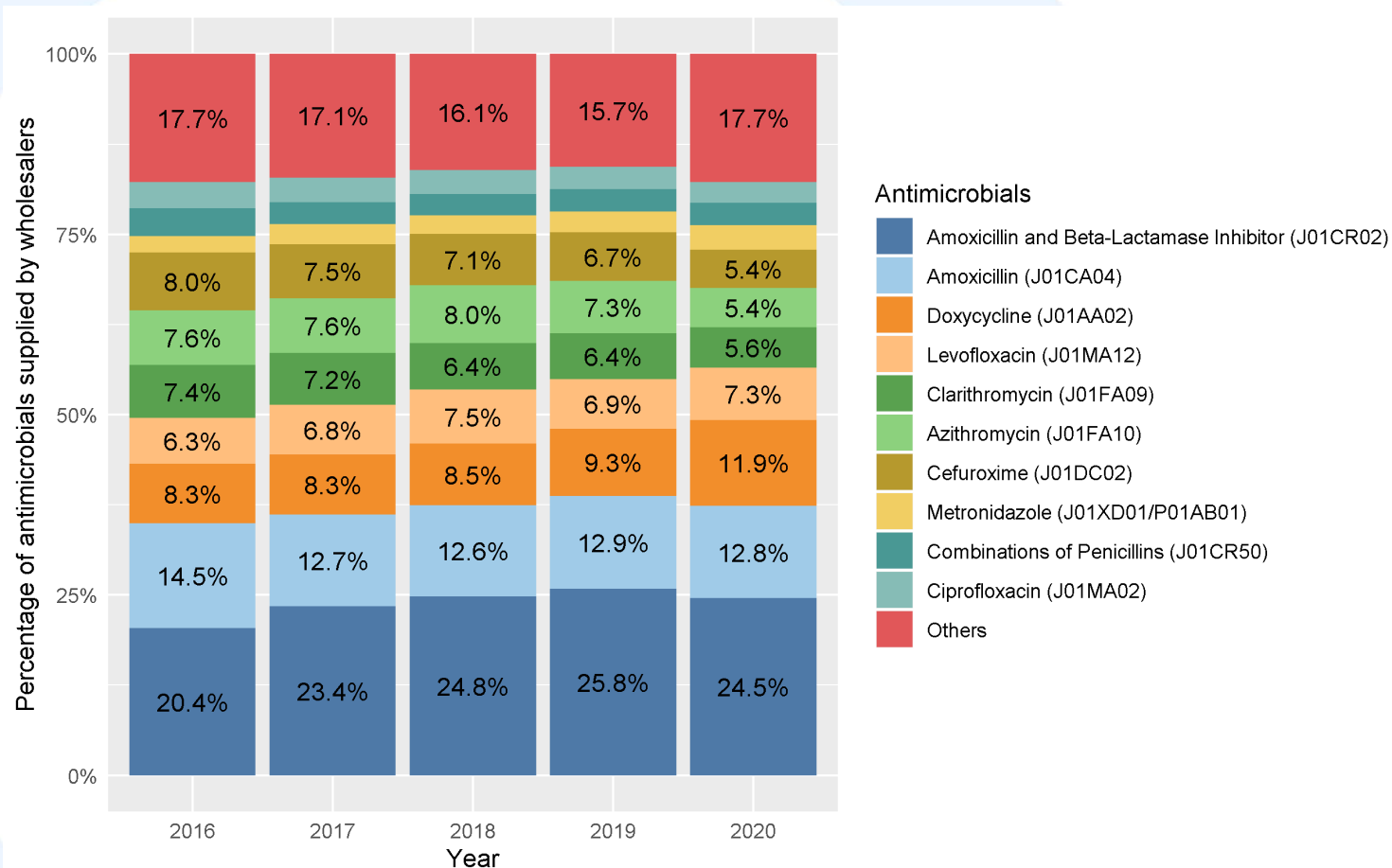
Results

2D. Antimicrobials wholesale supply in Hong Kong
(10 most supplied antimicrobials)



2D. Antimicrobials wholesale supply (2016-2020) 衛生防護中心 Centre for Health Protection

- 10 most supplied antimicrobials



- The 10 most supplied antimicrobials contributed >80% of all antimicrobials supplied from 2016 to 2020
- In 2020, amoxicillin and beta-lactamase inhibitor (J01CR02) was the most commonly supplied antimicrobial (24.5%) by wholesale, followed by amoxicillin (J01CA04) (12.8%), and doxycycline (J01AA02) (11.9%)

2D. Antimicrobials wholesale supply (2016-2020) 衛生防護中心 Centre for Health Protection

- 10 most supplied antimicrobials

ATC Chemical Substance		DDD per 1,000 inhabitant days (DID)					Average annual change	p-value	CAGR (16 to 20)
Code	Description	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020			
J01CR02	Amoxicillin and Beta-Lactamase Inhibitor	4.16	4.31	4.59	4.91	3.34	-0.104	-	-5.3%
J01CA04	Amoxicillin	2.95	2.34	2.33	2.45	1.74	-0.229	-	-12.3%
J01AA02	Doxycycline	1.69	1.54	1.58	1.77	1.63	0.012	-	-0.9%
J01MA12	Levofloxacin	1.29	1.26	1.39	1.30	0.99	-0.056	-	-6.4%
J01FA09	Clarithromycin	1.50	1.32	1.19	1.21	0.76	-0.159	<0.05	-15.6%
J01FA10	Azithromycin	1.54	1.39	1.48	1.38	0.74	-0.161	-	-16.8%
J01DC02	Cefuroxime	1.63	1.39	1.31	1.27	0.73	-0.192	<0.05	-18.2%
J01XD01/ P01AB01	Metronidazole*	0.47	0.51	0.48	0.55	0.46	0.001	-	-0.8%
J01CR50	Combinations of Penicillins	0.78	0.56	0.54	0.59	0.42	-0.069	-	-14.2%
J01MA02	Ciprofloxacin	0.74	0.63	0.62	0.59	0.40	-0.072	<0.05	-14.4%
	Others	3.61	3.15	2.98	2.98	2.42	-0.257	<0.05	-9.6%
	Total	20.37	18.41	18.49	19.02	13.63	-1.288	-	-9.6%

Note: Only p-values with statistical significance will be shown

Antimicrobials supplied to veterinarians, and non-human use antimicrobials (i.e. ATC code starts with Q) were not included

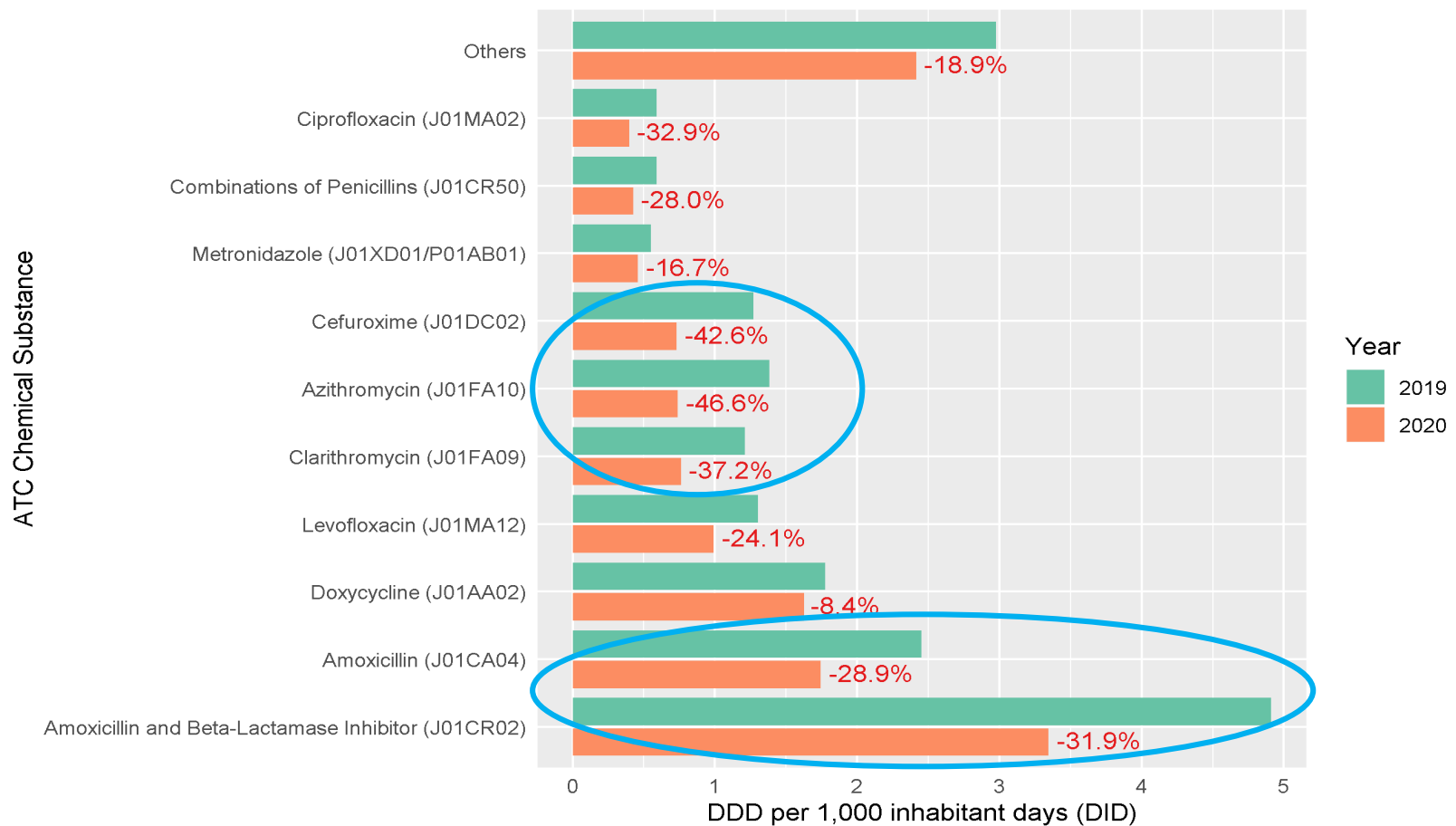
*Metronidazole was classified as J01XD01 if for parenteral use and P01AB01 if for oral/rectal use

- Supply of cefuroxime (J01DC02) and azithromycin (J01FA10) decreased most (-18.2% and -16.8% respectively in CAGR) from 2016 to 2020
- When examining the average annual change, supply of clarithromycin (J01FA09, average annual decrease of 0.159 DID), cefuroxime (J01DC02, average annual decrease of 0.192 DID) and ciprofloxacin (J01MA02, average annual decrease of 0.072 DID) reported average annual reduction in wholesale supply with statistical significance



2D. Antimicrobials wholesale supply (19 vs 20)

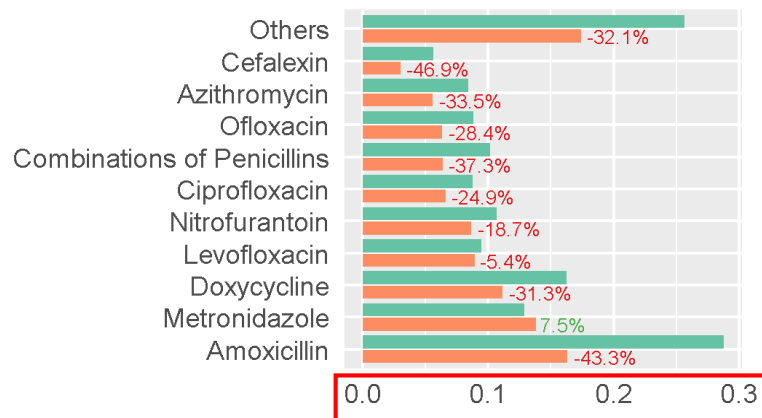
- 10 most supplied antimicrobials



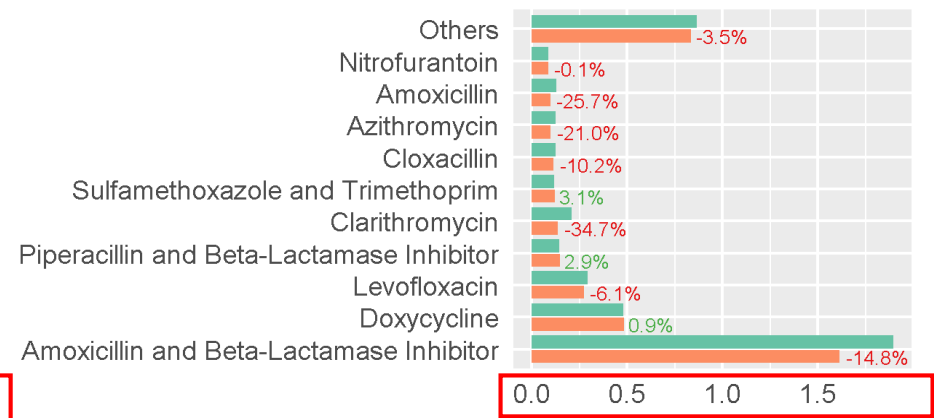
- When compared with that of 2019, amoxicillin and beta-lactamase Inhibitor (J01CR02) and amoxicillin (J01CA04) were the antimicrobials decreased most in terms of DID, while azithromycin (J01FA10), cefuroxime (J01DC02) and clarithromycin (J01FA09) decreased most in terms of percentage

2D. Antimicrobials wholesale supply (19 vs 20) - 10 most supplied antimicrobials (Selected Sectors)

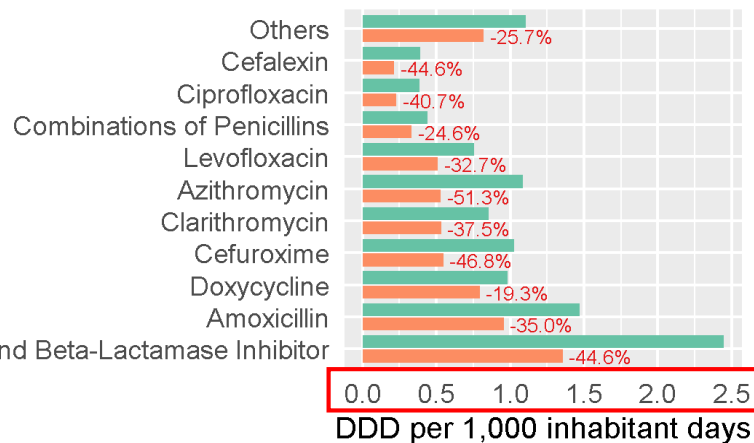
Community Pharmacies



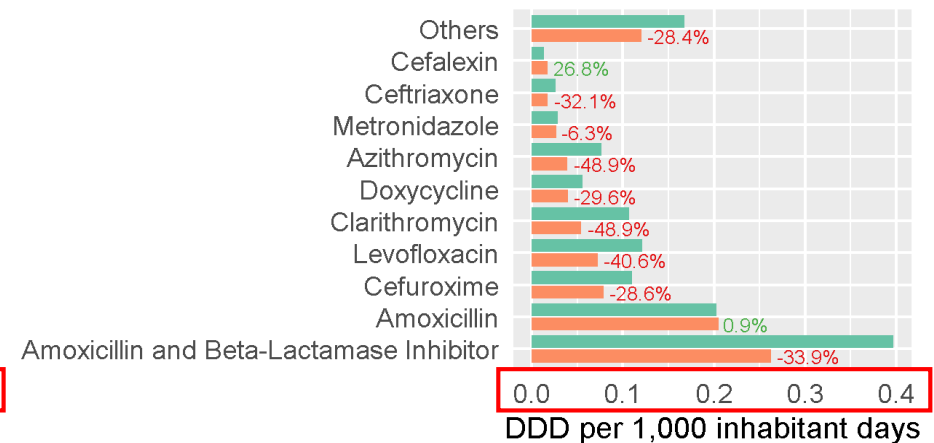
Hospital Authority



Private Doctors



Private Hospitals



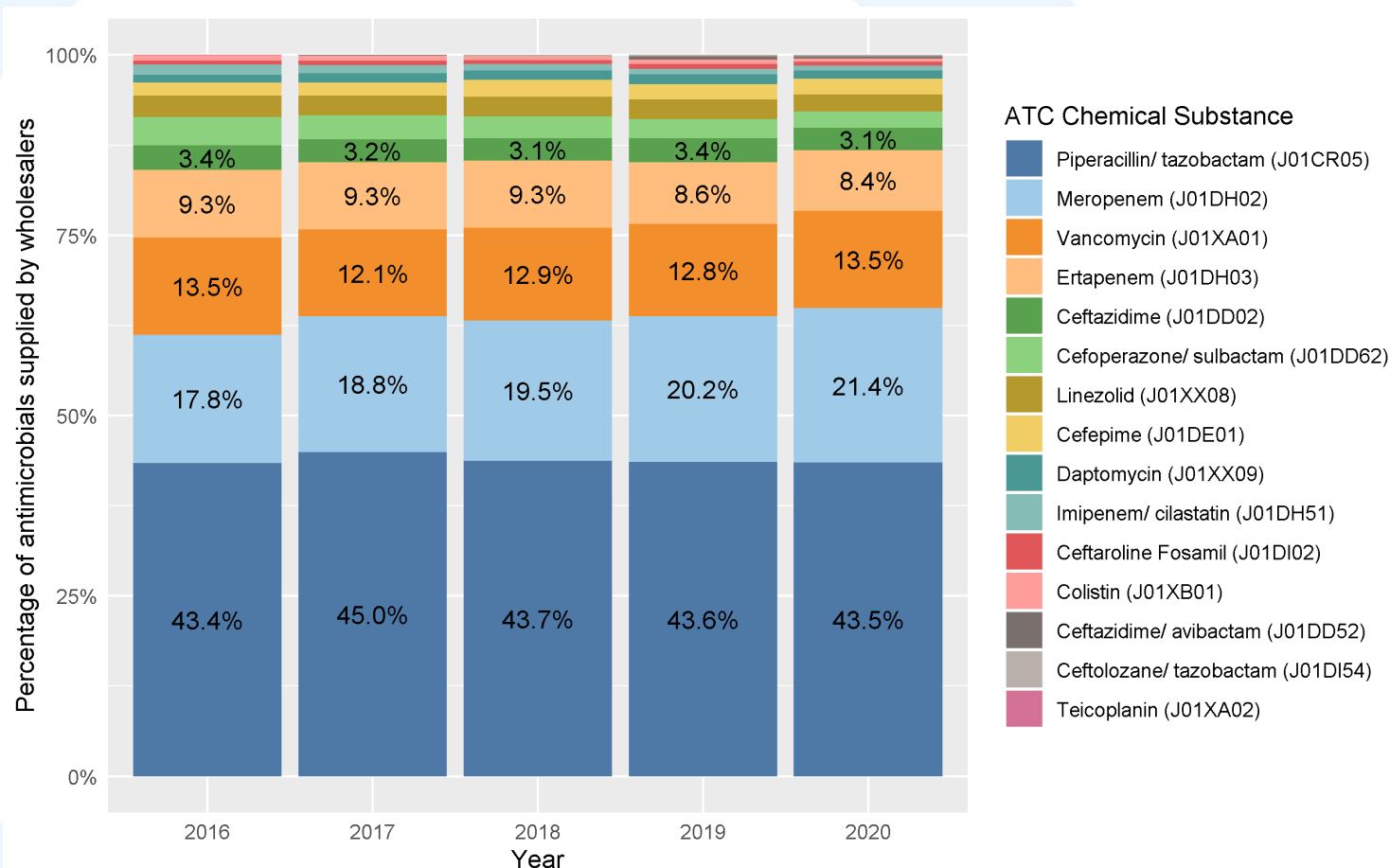
Year ■ 2019 ■ 2020

Results

3. Wholesale supply of selected broad-spectrum antimicrobials



3. Wholesale supply of selected broad-spectrum antimicrobials



- In 2020, piperacillin/tazobactam was the most commonly supplied (43.5%) broad-spectrum antimicrobial, followed by meropenem (21.4%) and vancomycin (13.5%)
- Majority of these broad spectrum antimicrobials were supplied to HA and private hospitals from 2016 to 2020 (about 99%)



3. Wholesale supply of selected broad-spectrum antimicrobials

ATC Chemical Substance		DDD per 1,000 inhabitant days (DID) [^]					Average annual change	p-value	CAGR* (16 to 20)
Code	Description	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020			
Beta-Lactam Antibacterials, Penicillins									
J01CR05	Piperacillin/tazobactam	0.114	0.128	0.138	0.149	0.152	0.010	<0.01	7.4%
Other Beta-Lactam Antibacterials									
J01DH02	Meropenem	0.047	0.053	0.062	0.069	0.075	0.007	<0.01	12.5%
J01DH03	Ertapenem	0.025	0.027	0.029	0.029	0.029	0.001	<0.05	4.5%
J01DD02	Ceftazidime	0.009	0.009	0.010	0.012	0.011	0.001	-	4.6%
J01DD62	Cefoperazone/sulbactam	0.011	0.009	0.010	0.009	0.008	-0.001	<0.05	-6.2%
J01DE01	Cefepime	0.005	0.005	0.007	0.007	0.008	0.001	<0.05	13.2%
J01DH51	Imipenem/cilastatin	0.004	0.003	0.003	0.003	0.002	-§	<0.01	-11.9%
J01DI02	Ceftaroline fosamil	0.001	0.002	0.002	0.002	0.002	§	-	11.1%
J01DD52	Ceftazidime/avibactam	-	§	-	0.001	0.001	§	-	-
J01DI54	Ceftolozane/tazobactam	-	§	0.001	0.001	0.001	§	-	-
Other Antibacterials									
J01XA01	Vancomycin	0.036	0.034	0.041	0.044	0.047	0.003	<0.05	7.3%
J01XX08	Linezolid	0.008	0.008	0.009	0.009	0.008	§	-	1.3%
J01XX09	Daptomycin	0.003	0.004	0.004	0.005	0.004	§	-	8.6%
J01XB01	Colistin	0.002	0.002	0.002	0.002	0.002	-§	-	-5.3%
J01XA02	Teicoplanin	§	-	§	-	-	§	-	-
Total Broad Spectrum Antibiotics									
Total		0.263	0.284	0.315	0.341	0.350	0.023	<0.01	7.3%

[^] Antimicrobials supplied for non-human use in Hong Kong (e.g. veterinary surgeons and farmers) were not included

* The CAGR for the supply of some antimicrobial is not applicable as it is a newly introduced antimicrobial which was not available in 2016

- Only p-values with statistical significance will be shown

§ Less than 0.0005

- Total wholesale supply of selected broad-spectrum antimicrobials reported an average annual increase of 0.023 DID (or 7.3% increase in CAGR) with statistical significance
- Piperacillin/ tazobactam, meropenem and vancomycin have been the 3 most supplied selected broad-spectrum antimicrobials from 2016 to 2020. They accounted for about 78% of all selected broad-spectrum antimicrobials under monitoring in 2020

Remarks on interpretation of results (1)

- DDD is a technical unit of use that does not necessarily reflect the recommended or average prescribed dose
- There are no separate DDDs for children which makes the DDD estimates for paediatric formulations more difficult to interpret
- Change in DDD* values in 2019 by WHO resulted in re-calculating of the past data and hence the figures in this presentation would be different from the figures presented in the past

* WHO ATC 2021 version was adopted for DDD calculation



Remarks on interpretation of results (2)

- The surveillance of antimicrobials by wholesale supply in Hong Kong is a voluntary self-reporting by licensed drug wholesalers and could have reporting errors
- Wholesale supply data is used as a proxy for the amount of antimicrobials supplied to each sector, therefore the figures are not equivalent to dispensing figures
- Wholesale supply data could be affected by marketing strategies, e.g. discount offers
- Readers are cautioned not to use the Hong Kong figures to make direct comparison with that of other countries as the health care services provision system and the methodology in collecting the surveillance data may not be the same



Summary (1)

- The overall wholesale supply of antimicrobials decreased from 20.37 DID in 2016 to 19.02 DID 2019
- The overall wholesale supply of antimicrobials decreased drastically in 2020 to 13.63 DID during the pandemic of Covid-19
- With 61.5% of the overall antimicrobial supply under the Access group of WHO AWaRe categorization, Hong Kong has exceeded the overall 60% benchmark under Access as recommended by WHO
- Majority of antimicrobials supplied in Hong Kong went to private doctors (49.4%), the major primary healthcare service providers, followed by Hospital Authority (29.0%) and community pharmacies (7.5%) in 2020



Summary (2)

- During the pandemic of COVID-19 in 2020, drastic decrease was observed when compared with that of 2019 in private doctors (↓4.13 DID, 37.7%), private hospitals (↓0.37 DID, 28.6%) and community pharmacies (↓0.41 DID, 28.4%), while the decrease in supply to HA (↓0.46 DID, 10.3%), and dentists (↓0.03 DID, 4.4%), were relatively mild
- The most drastic decrease was observed with antimicrobials such as amoxicillin and beta-lactamase Inhibitor (↓1.57 DID, 31.9%), amoxicillin (↓0.71 DID, 28.9%), azithromycin (↓0.65 DID, 46.6%), and cefuroxime (↓0.54 DID, 42.6%), clarithromycin (↓0.45 DID, 37.2%), levofloxacin (↓0.31 DID, 24.1%), doxycycline (↓0.15 DID, 8.4%), which are commonly prescribed for a range of infections including URTIs in the private community setting
- Overall wholesale supply of broad-spectrum antimicrobials showed an increase of 7.3% (compound annual growth rate) from 2016 to 2020



Recommendations

- As the majority of antimicrobials were supplied to private doctors (49.4%) and Hospital Authority (29.0%), strengthening the implementation of antibiotic stewardship programme in primary care and public hospitals are recommended
- Majority of the broad spectrum antimicrobials were supplied to HA or private hospitals. The continuous rising supply trend of these broad spectrum antimicrobials warrants to further enhance the promulgation of antibiotic stewardship programme at hospital setting





THE END

Thank you

