

Supplementary online content for:**Physician visits and medication prescriptions for major chronic diseases during the COVID-19 pandemic in Japan: Retrospective cohort study**

Itsuki Osawa, MD ¹
Tadahiro Goto, MD, MPH, PhD ^{2,3}
Yuko Asami, PhD ⁴
Noriharu Itoh, MPH ⁴
Yasuyuki Kaga ⁵
Yuji Yamamoto, MD, MBA ⁶
Yusuke Tsugawa, MD, PhD ^{7,8}

Affiliations:

1. Department of Medicine, The University of Tokyo Hospital, Tokyo, Japan
2. Department of Clinical Epidemiology and Health Economics, School of Public Health, The University of Tokyo, Tokyo, Japan
3. TXP Medical Co. Ltd., Tokyo, Japan
4. Viartis Pharmaceuticals Japan Inc., Tokyo, Japan
5. EPS Corporation, Tokyo, Japan
6. MinaCare Co., Ltd., Tokyo, Japan
7. Division of General Internal Medicine and Health Service Research, David Geffen School of Medicine at UCLA, Los Angeles, CA, USA
8. Department of Health Policy and Management, UCLA Fielding School of Public Health, Los Angeles, CA, USA

Supplementary online content

eAppendix. The definition of patients with major chronic diseases.....	3
eTable 1. Detailed characteristics of major chronic diseases in 10,346 patients.....	4
eTable 2. Changes in physician visits and medication prescriptions from March to May in 2018, 2019, and 2020	5
eTable 3. The breakdown of patients who had an in-person, online, or telephone visit at least once between March and May in 2018, 2019, and 2020	6
eFigure 1. Flow diagram of study participants selection for analyses	7

eAppendix. The definition of patients with major chronic diseases

1. Patients with hypertension:

- One of ICD-10 diagnostic codes for physician visits was one of the following: I10, I11, I12, I13, I14, or I15 AND
- One of prescribed medications was classified into one of the following medication therapeutic category: 213 (diuretics), 214 (antihypertensive agents), or 217 (vasodilators) OR
- One of the prescribed medications was the combination drug of Amlodipine and Atorvastatin

OR

2. Patients with type 2 diabetes mellitus:

- One of ICD-10 diagnostic codes for physician visits was one of the following: E11 AND
- One of the prescribed medications was classified into one of the following medication therapeutic category: 396 (drugs for diabetes mellitus except for insulin)

OR

3. Patients with dyslipidemia:

- One of ICD-10 diagnostic codes for physician visits was one of the following: E785 AND
- One of the prescribed medications was classified into one of the following medication therapeutic category: 218 (drugs for dyslipidemia)
- One of the prescribed medications was the combination drug of Amlodipine and Atorvastatin

Patients with major chronic diseases were defined as those individuals with at least one of three conditions: hypertension, type 2 diabetes mellitus, and dyslipidemia.

eTable 1. Detailed characteristics of major chronic diseases in 10,346 patients

Hypertension	Diabetes	Dyslipidemia	Total number (n = 10346)
✓	-	-	5334 (52)
-	✓	-	427 (4)
-	-	✓	1656 (16)
✓	✓	-	526 (5)
-	✓	✓	211 (2)
✓	-	✓	1824 (18)
✓	✓	✓	368 (4)

We showed detailed characteristics of major chronic diseases in adult patients who visited physicians before the COVID-19 pandemic. Values represent n (%).

Abbreviations: COVID-19 = coronavirus disease 2019

eTable 2. Changes in physician visits and medication prescriptions from March to May in 2018, 2019, and 2020

Outcome	In 2018	In 2019	In 2020	P value
The number of physician visits, mean (95% CI)				
In March	-	1.9 (1.9-2.0)	2.0 (1.9-2.0)	-
In April	1.9 (1.8-1.9)	1.9 (1.9-2.0)	1.7 (1.6-1.8)	< .001
In May	1.8 (1.8-1.9)	1.8 (1.8-1.9)	1.8 (1.8-1.9)	0.75
The proportion of patients who did not visit any physicians [%] (95% CI)				
In March	-	15 (14-16)	15 (14-16)	-
In April	14 (13-15)	16 (15-17)	24 (23-25)	< .001
In May	16 (15-16)	17 (16-17)	8 (8-9)	< .001
The proportion of days covered by prescribed medication (PDC) [%], mean (95% CI)				
In March	-	89 (88-89)	89 (88-89)	-
In April	94 (94-94)	90 (89-90)	89 (89-90)	< .001
In May	90 (89-90)	87 (87-88)	87 (87-88)	< .001

We showed the changes in physician visits and medication prescriptions in the whole nation in 2018, 2019, and 2020 among patients with major chronic diseases who visited physicians for ≥ 2 years. Each value in Apr 2018 and May 2018 was calculated based on data on those who visited physicians and received prescriptions for major chronic diseases at least once both in March 2018 and from Sep 2019 to Feb 2020, and from Mar 2018 to Apr 2018 and from Sep 2019 to Feb 2020, respectively. Each outcome in Mar 2018, which could not be calculated accurately without data before Feb 2018, was not shown in eTable 2.

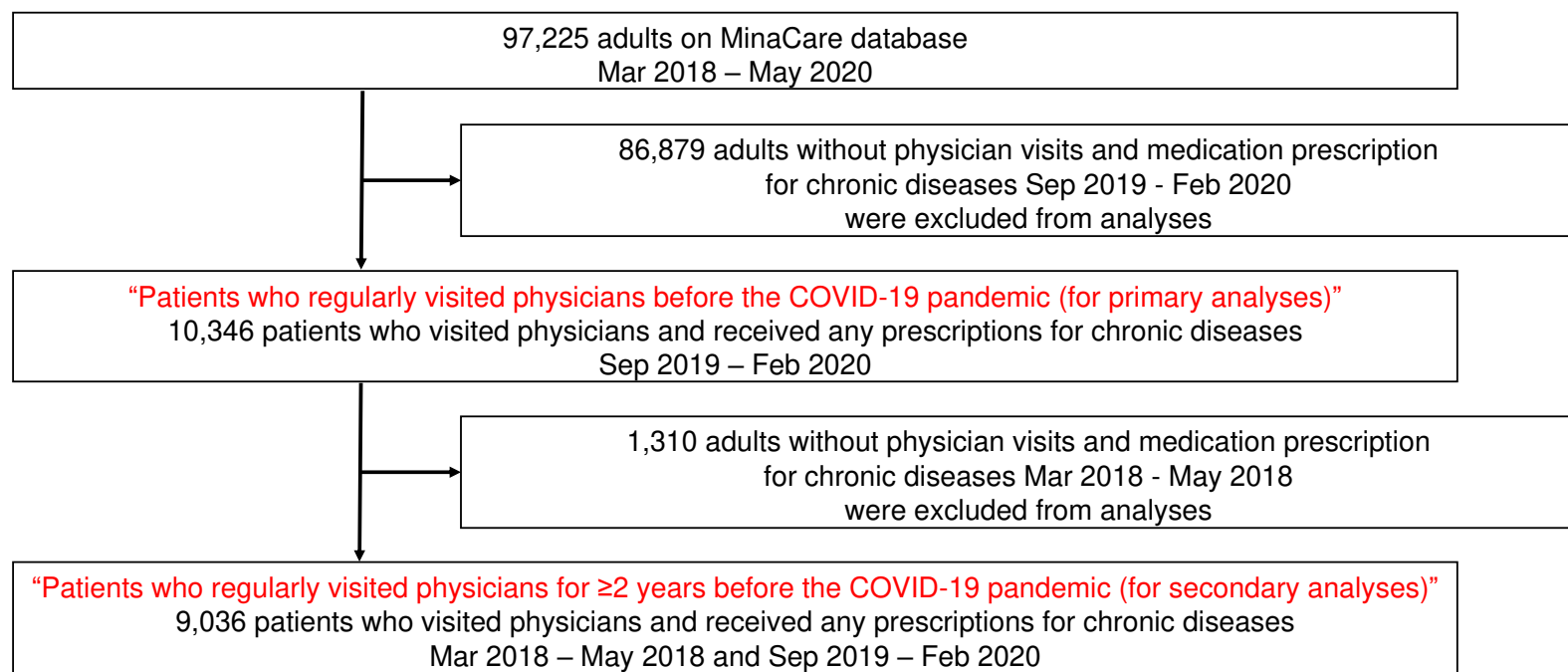
Abbreviations: 95% CI = 95% confidence interval; PDC = proportion of days covered by prescribed medication; COVID-19 = coronavirus disease 2019

eTable 3. The breakdown of patients who had an in-person, online, or telephone visit at least once between March and May in 2018, 2019, and 2020

The percentage of patients (%)	March to May In 2018	March to May In 2019	March to May In 2020
Patients in the whole nation			
In-person physician visits	99.9	99.1	98.9
Online physician visits	0.00	0.00	0.15
Telephone physician visits	0.37	0.38	4.41
Patients in the prefectures most affected by COVID-19			
In-person physician visits	99.9	99.1	98.9
Online physician visits	0.00	0.00	0.18
Telephone physician visits	0.38	0.37	4.79
Patients in the other prefectures			
In-person physician visits	99.9	99.1	98.9
Online physician visits	0.00	0.00	0.05
Telephone physician visits	0.28	0.45	2.94

We showed the percentage breakdown of patients who had an in-person, online, or telephone visit at least once between March and May in 2018, 2019, and 2020. The total does not necessarily add up to 100% because a single patient may have experienced more than one type of physician visit. Values represent n (%).

Abbreviations: COVID-19 = coronavirus disease 2019

eFigure 1. Flow diagram of study participants selection for analyses

From the nationwide claims database, we identified 97,225 adults aged ≥ 18 years who are covered with each health insurance from March 1, 2018, to May 31, 2020. Among these, we further identified 10,346 patients with major chronic diseases who visited physicians and received any prescriptions for major chronic diseases at least once before the COVID-19 pandemic (i.e., from September 2019 to February 2020). Among 10,346 patients, we identified 9,036 patients with major chronic diseases who visited physicians and received any prescriptions for ≥ 2 years before the COVID-19 pandemic.