Danish Clinical Quality Program

Increased social disparity in patients with Chronic Obstructive Pulmonary Disease (COPD) during the COVID-19 pandemic - a Danish nationwide study

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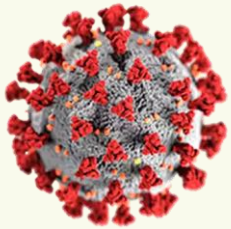
NSQH2022, Sweden



The Covid-19 pandemic

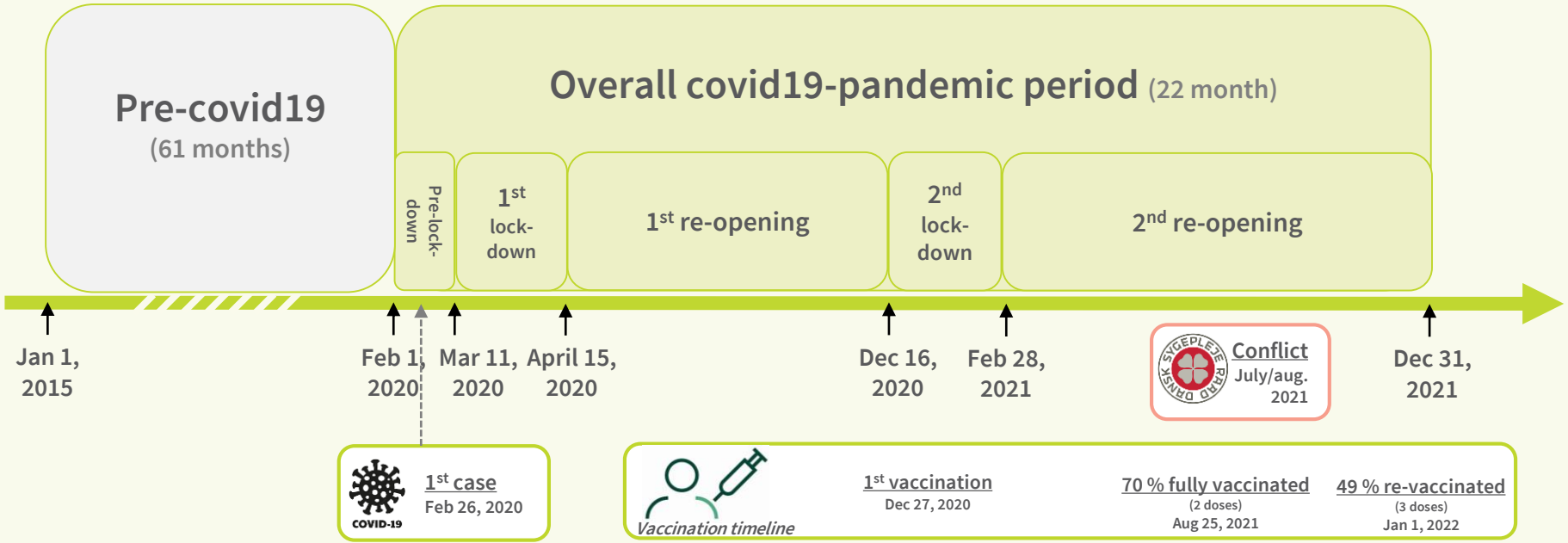
Aim

to examine the associations between socio-demographic, clinical characteristics and outcomes of patients with COPD during the Covid-19 pandemic in comparison with previous years

Method

Population-based study of Danish patients with a hospital contact for COPD between 2015 and 2021

Timeline for the Covid19 pandemic in Denmark



Study Population

Patients ≥ 30 years with a hospital contact for COPD registered in The Danish Register of COPD (DrCOPD)

DrCOPD includes

- Out patients: J44*, or J96* a-diagnose with J44* b-diagnose
- Admissions: J44*, or J96*/J13-18* a-diagnose with J44* b-diag.

DrCOPD started in 2008 with the aim to monitor quality of treatment for COPD by the use of process and outcome indicators

Variables of interest

Sociodemographic (all patients)

- sex, age, educational level, immigration and living status *(derived from Statistics Denmark)*

Clinical characteristics (only outpatients)

- exacerbations within the last year, dyspnea (MRC-scale), BMI, and type of contact (face-to-face/virtuel) *(derived from DrCOPD)*

Outcome (only acute admissions)

- Treated with non-invasive ventilation (NIV), acute readmission, and 30-day mortality *(derived from DrCOPD)*

Analyses

Descriptive statistics:

- proportions expressed by percentages

Socio-demographic and clinical characteristics:

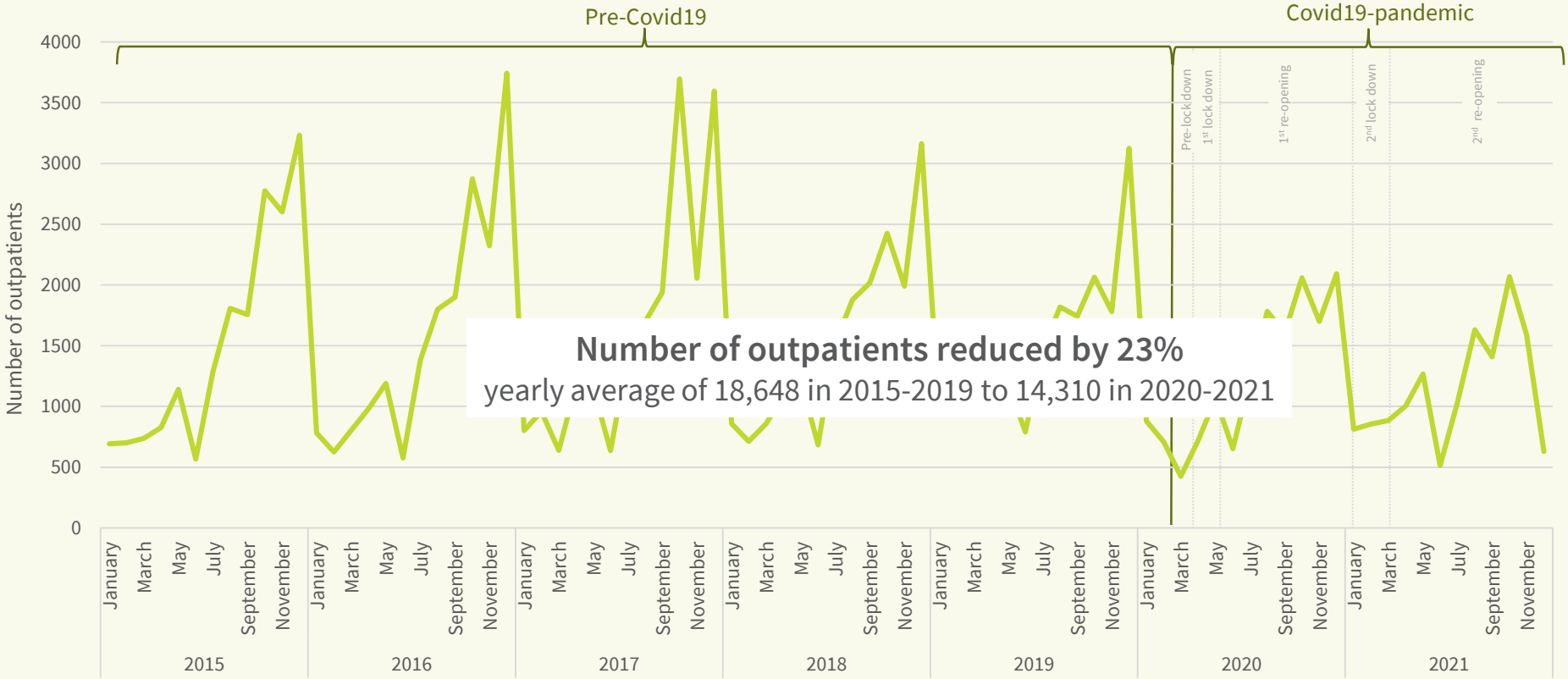
- Generalised linear models (GLMs) with log link for the Poisson family

Clinical outcome:

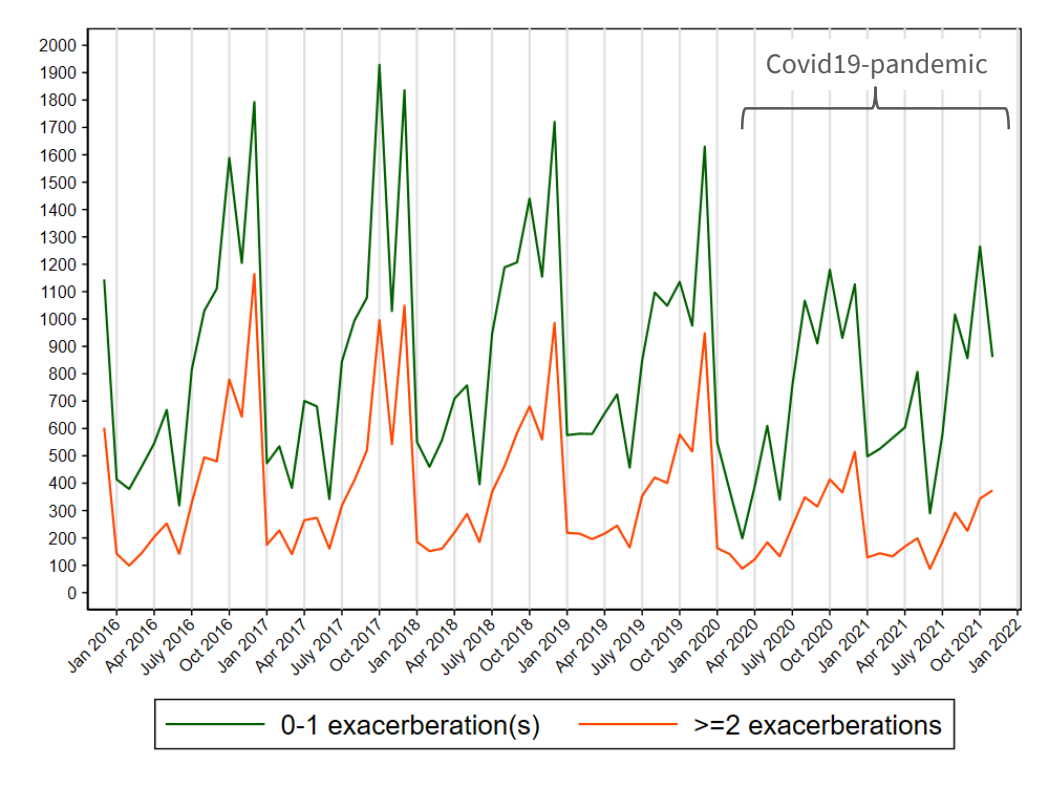
- quantile regression with confidence interval estimated by bootstrapping procedure using 1000 replications

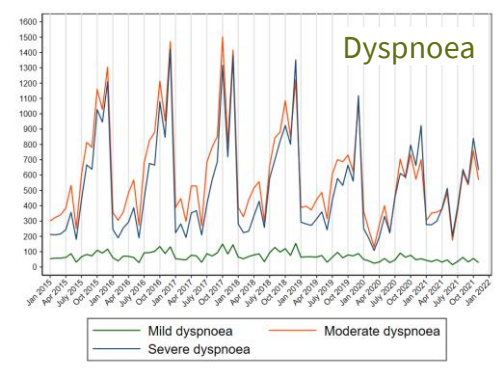
  - results are adjusted for sex, age, and year and month of diagnosis to counteract the effect of seasonality and random variation

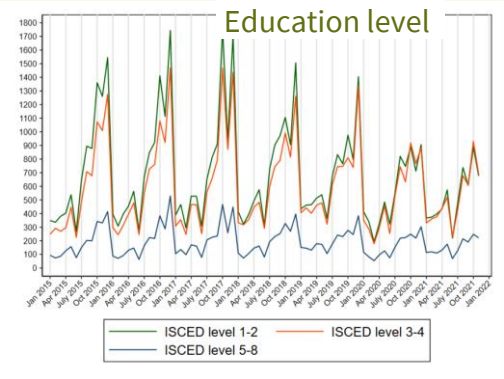
Results - 122,041 outpatients included



Results - outpatients



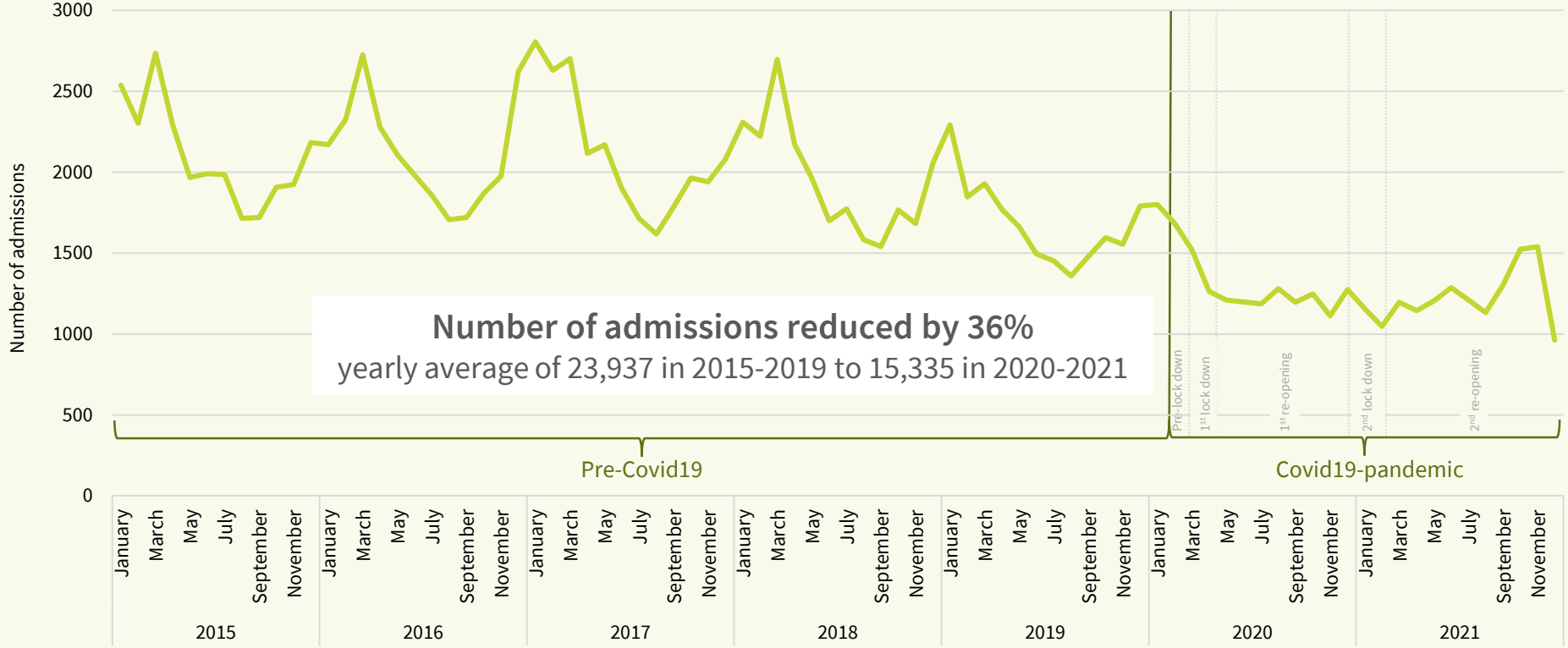




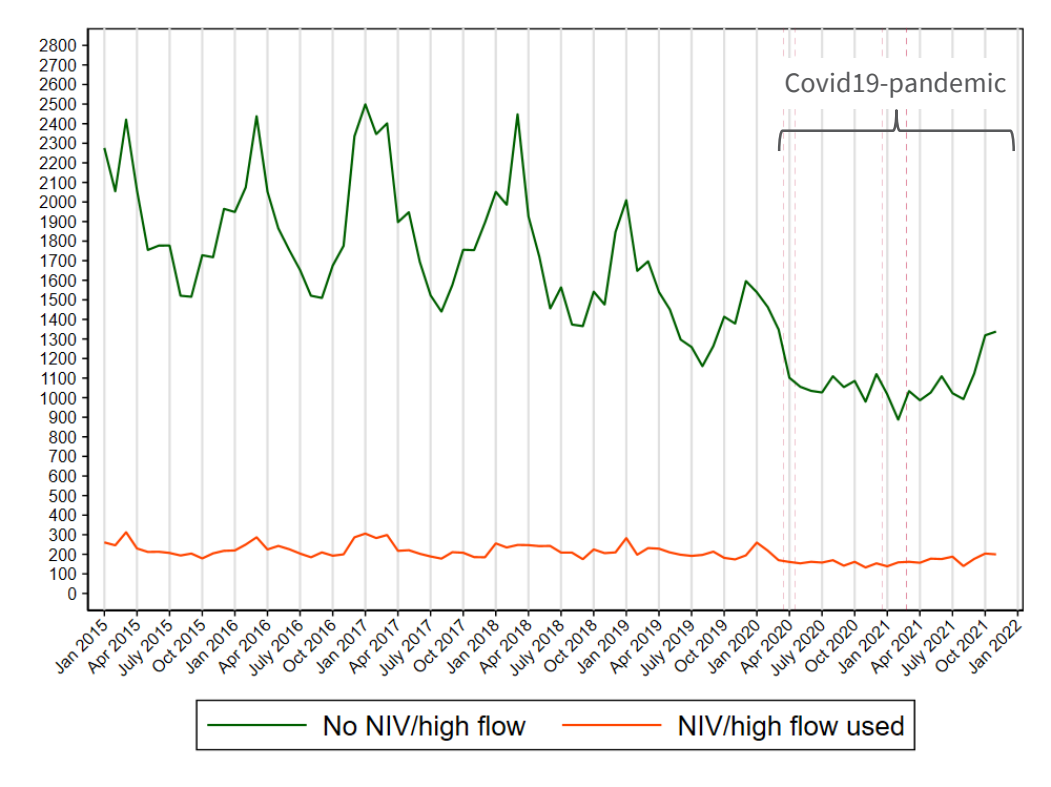
Results - outpatients

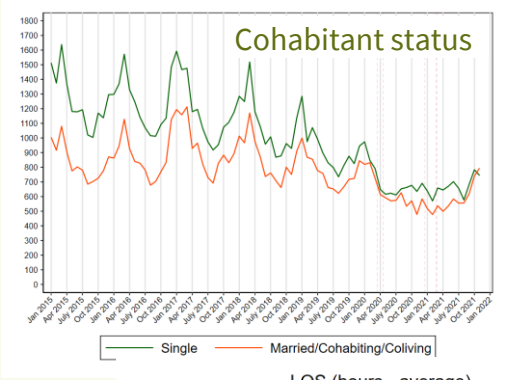
	Pandemic overall (March 2020 - Dec. 2021) Prevalence Ratio	[95%CI]
Sex		
Men	**1.03**	[1.01; 1.05]
Women	**0.97**	[0.96; 0.99]
Age group		
30-49 years	0.97	[0.87; 1.07]
50-59 years	1.04	[0.99; 1.09]
60-69 years	1.01	[0.99; 1.04]
70-79 years	**1.04**	[1.01; 1.06]
≥80 years	**0.90**	[0.87; 0.93]
Ethnicity		
Danish descent	0.97	[0.87; 1.07]
Immigrant	1.04	[0.99; 1.09]
Cohabitation status		
Living alone	**0.90**	[0.88; 0.92]
Married/cohabiting	**1.09**	[1.08; 1.11]
Educational level		
Low (level 1-2)	**0.93**	[0.92; 0.95]
Medium (level 3-4)	**1.07**	[1.05; 1.09]
High (level 5-8)	1.02	[0.98; 1.07]
Type of consultation		
Face-2-face	**0.88**	[0.87; 0.89]
Virtual	**1.76**	[1.68; 1.85]
Exacerbations within last year		
Few (0-1)	**1.09**	[1.08; 1.10]
Many (≥2)	**0.82**	[0.80; 0.84]
Dyspnoea (MRC dyspnoea scale)		
Mild (1-2)	**0.85**	[0.80; 0.91]
Moderate (3)	**0.91**	[0.89; 0.92]
Severe (4-5)	**1.23**	[1.21; 1.25]
BMI (WHO definition)		
Underweight	1.00	[0.94; 1.05]
Normal Weight	1.02	[1.00; 1.05]
Pre-Obesity	0.98	[0.95; 1.01]
Obesity Class I	1.02	[0.98; 1.06]
Obesity Class II-III	1.02	[0.97; 1.07]

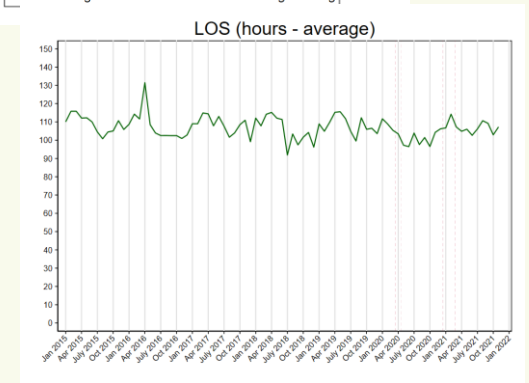
Results - 150,355 acute admissions included



Results - COPD admissions







Results - acute admissions

	Pandemic overall (March 2020 - Dec. 2021) Prevalence Ratio	[95%CI]
Sex		
Men	1.00	[0.99; 1.02]
Women	1.00	[0.99; 1.01]
Age group		
30-49 years	**0.67**	[0.60; 0.75]
50-59 years	**0.80**	[0.77; 0.84]
60-69 years	**0.94**	[0.92; 0.96]
70-79 years	**1.03**	[1.02; 1.05]
≥80 years	**1.09**	[1.07; 1.11]
Ethnicity		
Danish descent	1.00	[1.00; 1.01]
Immigrants	**0.91**	[0.86; 0.97]
Cohabitation status		
Living alone	**0.93**	[0.92; 0.94]
Married/ cohabiting	**1.10**	[1.08; 1.11]
Educational level		
Low (level 1-2)	**0.95**	[0.93; 0.96]
Medium (level 3-4)	**1.09**	[1.08; 1.11]
High (level 5-8)	0.97	[0.94; 1.01]
Non Invasive Ventilation (NIV)		
Yes	**1.19**	[1.15; 1.24]
Acute re-admission within 30 days		
Yes	**0.93**	[0.90; 0.96]
Dead within 30 days*		
Yes	0.98	[0.94; 1.03]

Conclusion

- Markedly reduction in hospitals contact during the pandemic for both outpatients and acute admissions
- Indication of less advantaged patients not seeking healthcare
- Indication of outpatient consultations according to disease severity
- Acute readmissions due to COPD was reduced

Thanks you for your attention

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