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Severe mental illness and European COVID-19 vaccination strategies

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The EU advises prioritising vaccination for people whose health makes them particularly at risk for severe COVID-19, but leaves it to member states to decide which medical conditions get prioritised. Ethical, neuroscientific, and public health considerations have been used to prioritise individuals with severe mental illness (ie, psychotic disorders, bipolar disorders, and severe major depressive disorders).[1–3] We systematically reviewed national COVID-19 vaccine deployment plans across 20 European countries (appendix p 1–2).

Eight of 20 countries explicitly mentioned psychiatry or mental illness in their national vaccine strategy documents. Several countries prioritised institutional residents, which can include people with severe mental illness (table). Only four countries (Denmark, Germany, the Netherlands, and the UK) had some form of higher vaccination priority for outpatients with severe mental illness. Additionally, Latvia, Romania, Spain, and Sweden prioritised outpatients with disabilities, possibly including severe mental illness, whereas the Czech Republic and Sweden specified behavioural or mental problems interfering with pandemic regulation adherence as priority indication.

A European Centre for Disease Control and Prevention survey found that most European countries used a combination of epidemiological data, mathematical modelling, guidelines, ethical considerations, and published research to define specific morbidities for vaccine prioritisation.[4] Here, we present four examples (from (the Netherlands, UK, Denmark, and Germany) of different approaches that have positive outcomes for severe mental illness.

First, the UK used an Oxford University evidence-based algorithm to calculate the number of vaccinations needed to prevent one death.[5] Importantly, this QCovid algorithm (University of Oxford, UK), based on UK data from Jan 24 to June 30, 2020, explicitly includes severe mental illness among its risk predictors, and so does the UK vaccination strategy. However, preliminary data (which had not been peer reviewed as of Feb 11, 2021) suggest that vaccination coverage for patients with severe mental illness is lagging behind that of other comorbidity groups.[6]

Denmark, Germany, and the Netherlands initially omitted mental disorders from their COVID-19 vaccination strategies. After a large nationwide Danish cohort study found that an increased risk for 30-day mortality was associated with severe mental illness (adjusted OR 2·5, 95% CI 1·2–5·1) and use of antipsychotics (adjusted OR 3·3, 95% CI 2·3–4·8),[7] the Danish Health Authority urged health-care practitioners to refer for priority vaccination patients with psychotic disorders and other individuals with complex severe mental illness deemed to be at particularly high risk by the treating physician. Similarly, the Netherlands increased prioritisation of patients with severe mental illness following advocacy from mental health associations.[8]

The German federal research institute performed an umbrella review of published systematic reviews and meta-analyses to inform the federal Ministry of Health's selection of risk comorbidites.[9] However, evidence on psychiatric morbidity had not yet been systematically summarised at that time and was therefore not included in the original strategy. Following an update of its literature review, in which severe mental illness was found to be one of the few medical comorbidities with OR more than 2·0 for COVID-19 hospitalisation and mortality, the new strategy now explicitly includes severe mental illness in the highest risk group of medical comorbidities.[9]

Multiple high-quality studies have shown odds ratios for comorbid severe mental illness, and schizophrenia in particular, to equal or even surpass those of other risk comorbidities included for prioritisation (table).[7,10] Evidence-based policy would then require severe mental illness to be included in the list of risk comorbidities. Yet several sources of bias may have caused the risks associated with severe mental illness to be overlooked by most countries. Mental disorders are often not included as predictors in COVID-19 outcome studies. Studies specifically investigating the risks of psychiatric comorbidity have not yet been summarised in systematic reviews or meta-analyses and were therefore ignored by some national strategies and mathematical models.

See Online for appendix

For **QCovid algorithm** see https://qcovid.org

	National documentation			Cardiovascular	Metabolic			Lung	Immune system			CNS			Other
	Mentions psychiatry or mental illness	Priority for institution-alised people (aged <65 years)	List of risk comor-bidities specified	Hypertension	Diabetes mellitus	Chronic kidney disease	Chronic liver disease	Chronic pulmonary disease	Auto-immune disease	Immuno-compromised conditions (eg, asplenia)	Post-trans-plant	Cerebrovas-cular disease	Chronic neurological or neuro-muscular illness	Severe mental illness	Down syndrome
				1·09 (0·94–1·26)	1·32 (1·21–1·44)	1·55 (1·35–1·79)	1·74 (1·09–2·76)	1·89 (1·18–3·05)	HR 1·19 (1·06–1·33)	RR 1·39 (1·13–1·70)	4·20 (1·60–11·40)	1·44 (0·90–2·30)	HR 1·18 (1·08–1·28)	2·9 (1·3–6·6)	NA
Belgium	1	1	Yes	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	..	Tier 1
Czech Republic	0	1	Yes	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	..	Tier 1	Tier 1	..	Tier 1	..	..
Denmark	1	1	Yes	..	Tier 1	Tier 1	Tier 1	Tier 1	..	Tier 1	Tier 1	..	Tier 1	Tier 1	Tier 1
Finland	0	1	Yes	..	..	Tier 1	Tier 2	Tier 1	..	Tier 1	Tier 1	..	..	..	..
France	1	1	Yes	Tier 1	Tier 1	Tier 1	..	Tier 1	..	..	Tier 1	..	..	..	Tier 1
Germany	1	1	Yes	Tier 2	Tier 1	Tier 1	Tier 1	Tier 1	Tier 2	Tier 2	Tier 1	Tier 2	Tier 2	Tier 1	Tier 1
Greece	0	1	No	..	..	..	..	..	..	..	..	..	..	..	..
Ireland	0	1	Yes	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	..	Tier 1	Tier 1	..	Tier 1	..	Tier 1
Italy*	0	0	No	..	..	..	..	..	..	..	..	..	..	..	..
Latvia	0	1	Yes	Tier 2	Tier 1	Tier 1	Tier 2	Tier 2	..	Tier 2	Tier 2	..	..	..	Tier 1
Malta	1	1	No	..	..	..	..	..	..	..	..	..	..	..	..
Netherlands	1	1	Yes	..	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	..	..	Tier 1	..
Norway	0	0	Yes	..	Tier 2	Tier 1	Tier 2	Tier 2	Tier 2	Tier 1	Tier 1	Tier 2	Tier 1	..	Tier 1
Poland	0	1	Yes	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	..	Tier 1	Tier 1	Tier 1	Tier 1	..	..
Portugal	0	1	Yes	Tier 2	Tier 2	Tier 1	Tier 1	Tier 1	..	..	..	..	..	..	..
Romania	0	0	Yes	..	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	..	Tier 1
Spain	1	1	No	..	..	..	..	..	..	..	..	..	..	..	..
Sweden†	0	1	Yes	Tier 1	Tier 1	Tier 1	Tier 1	Tier 1	..	Tier 1	Tier 1	Tier 1	Tier 1	..	Tier 1
Turkey	0	1	No	..	..	..	..	..	..	..	..	..	..	..	..
UK	1	0	Yes	..	Tier 2	Tier 1	Tier 1	Tier 1	..	Tier 1	Tier 1	..	Tier 2	Tier 2	Tier 1

Risk comorbidities selected for priority vaccination and their effect sizes (95%CI) for COVID-19 associated mortality risk. For full table of comorbidities see appendix p 3. Tier 1 is highest priority risk comorbidities. Tier 2 is priority risk comorbidities. Effect sizes for COVID-19 mortality in risk comorbidities were adapted from umbrella review by Robert Koch Institut for the German national vaccination strategy, (literature search done Dec 11, 2020, and published Jan 29, 2021).[3] Effect sizes are OR, adjusted for at least the age of the study participants, unless otherwise specified. Empty cells show that this particular medical condition has not been specified as eligible for priority vaccination (ie, the strategy does not mention it). *Two out of 20 Italian regions (Liguria and Veneto) are giving priority to residential care centers for people with disability and mental illness. †Besides people with a disease or condition involving an increase in risk, Sweden also prioritises a broader group of people with a condition that involves difficulties in following advice on infectious disease control measures; this applies to people aged 18-59 years with dementia and cognitive or mental impairment; this also applies to people living in socially vulnerable situations.

Table: **Policies and risk comorbidities specified in national COVID-19 vaccination strategies**

Information collected in our report is not definitive or exhaustive. Countries are still developing vaccination plans and strategies can change as knowledge evolves. EU member states have been asked to share best practices for prioritisation through the Health Security Committee, coordinated by the European Commission.

In summary, European countries' vaccination strategies try to balance ethical and scientific evidence, but for individuals with severe mental illness an evidence-policy disconnect remains. Most of these patients are treated in the community, and are currently overlooked by the majority of European COVID-19 vaccination strategies. Our joint recommendations, representing professionals, patients, and families, are clear and urgent: explicit inclusion of both inpatients and outpatients with severe mental illness in priority groups for COVID-19 vaccination, meaningful patient and family organisational participation in developing vaccination plans, and engagement of peer workers in providing vaccination education to patients. We therefore call on the European authorities (Council, Parliament, and Commission), national health authorities, and the scientific community to take note of the summarised evidence and our recommendations, and to correct this intolerable inequality.

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Livia J De Picker, Marisa Casanova Dias, Michael E Benros, Benedetta Vai, Igor Branchi, Francesco Benedetti, Alessandra Borsini, Juan Carlos Leza, Hilkka Kärkkäinen, Miia Männikkö, Carmine M Pariante, Ekin Sönmez Güngör, Anna Szczegielniak, Ryad Tamouza, Afra van der Markt, Paolo Fusar-Poli, Julian Beezhold, Marion Leboyer
livia.depicker@uantwerp.be

Scientific Initiative for Neuropsychiatric and Pyschopharmacological Studies, University Psychiatric Hospital Campus Duffel, Duffel, Belgium (LJDP); Collaborative Antwerp Psychiatric Research Institute, University of Antwerp, Antwerp, Belgium (LJDP); National Centre for Mental Health, MRC Centre for Neuropsychiatric Genetics and Genomics, Cardiff University, Cardiff, UK (MCD); Section of Women's Mental Health (MCD) and Department of Psychological Medicine (AB, CMP) and Department of Psychosis Studies (PF-P) Institute of Psychiatry, Psychology and Neurosciences, King's College London, London, UK; Copenhagen Research Centre for Mental Health, Copenhagen University Hospital, Copenhagen, Denmark (MEB); Department of Immunology & Microbiology, Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark (MEB); Psychiatry & Clinical Psychology, Division of Neuroscience, IRCCS San Raffaele Scientific Institute, Milan, Italy (BV, FB); Fondazione Centro San Raffaele, Milan, Italy (BV); Center for Behavioral Sciences and Mental Health, Istituto Superiore di Sanità, Rome, Italy (IB); Psychiatry and Clinical Psychobiology Unit, University Vita-Salute San Raffaele, Milan, Italy (FB); Department of Pharmacology & Toxicology, Faculty of Medicine, Universidad Complutense Madrid, Madrid, Spain (JCL); Global Alliance of Mental Illness Advocacy Networks-Europe, Brussels, Belgium (HK); European Federation of Associations of Families of People with Mental Illness, Leuven, Belgium (MM); University of Health Sciences, Erenköy Mental Health and Neurological Diseases Training and Research Hospital, Istanbul, Turkey (ESG); Department of Psychiatric Rehabilitation, Faculty of Medical Sciences in Katowice, Medical University of Silesia in Katowice, Poland (AS); IMRB Translational Neuropsychiatry Lab, Université Paris Est Creteil, Creteil, France (RT, ML); Department of Psychiatry and Addictology, Hôpitaux Universitaires Henri Mondor, Créteil, France (RT, ML); Fondation FondaMental, Creteil, France (RT, ML); Amsterdam UMC, Vrije Universiteit Amsterdam, Psychiatry, Amsterdam Public Health Research Institute, The Netherlands (AvdM); Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy (PF-P); Norwich Medical School, University of East Anglia, Norwich, UK (JB); Mental Health Liaison Service, Norfolk and Norwich University Hospital, Norfolk and Suffolk NHS Foundation Trust, Norwich, UK (JB)

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