Austrian Mortality Cohort Study 2018

Addiction Competence Center
REITOX–Focal Point Austria
Martin Busch, Judith Anzenberger & Alfred Uhl

EMCDDA–Meeting on Drug Related Deaths
Lisbon 8–9 November 2018

Preconditions and Preparatory Efforts

» **Everyone** undergoing opioid substitution therapy (OST) in Austria has to be **notified by the medical officer supervising** OST to the OST–registry.

» The notification is possible by **unique identification** of the patient in the **population registry** only.

» In Austria there is a system of **bPKs which are unique identifiers** for persons in different area e.g. bPK health, bPK statistics…

» The OST–data are **pseudononymised** (encryption of the bPK–health) and stored in the **OST–Statistic Register** without other personal data than sex and year of birth.

» Data on OST in Austria are available in this form for the years **1987 to 2018.**

» In Austria there exists a **General Mortality Register (GMR)** with **full personal information** of all death cases.

Since some years there was the idea to link the GMR to the OST–Statistic Register to calculate mortality rates!

Preconditions and Preparatory Efforts

» In 2016 the legal framework for this linkage was included in a change of the narcotic substance law.

» In a first step all death cases from 2002 to 2016 stored in the General Mortality Register (GMR) were identified in the Population Registry.

» In a second step a list of all bPKs-health of the death cases from 2002 to 2016 were sent to the Ministry of Health. The list included the bPK-health and a second code (run number).

» At the Ministry of Health the list of bPKs-health were encrypted the same way as the OST-Statistic Register and linked to the OST-Statistic Register.

» A list of all second codes and encrypted bPKs-health of persons found in the OST Statistic Register was sent back to the GMR.

» Based on the second code date and cause of death were integrated in this list and the list was sent back to the Ministry of Health again.

» The Ministry of Health sent the list to the Addiction Competence Center where the list of dates an causes of death was linked to the OST-Statistic Register

Data Quality

» There are 27,858 OST-patients who have been in OST on 1.1.2002 or started OST from 1.1.2002 to 31.12.2016.

» There are 1,904 death cases of these 27,858 OST-patients between 1.1.2002 and 31.12.2016.

» Problem: In 459 (24 %) of these 1,904 death cases the date of death was before the end of treatment (ghost cases!). ☹ ☹ ☹ ☹

» But in most cases the date of death was in the same month as the end of the treatment and in just 4 cases the date of death was more than one year before the date of death – (4 real ghost cases among 27,858 patients!) ☺ ☺

» Correction: If the date of death was before end of treatment the date of end of treatment was changed to date of death.

Two Possible Cohorts

» All 27,858 OST-patients who have been in OST on 1.1.2002 or started OST from 1.1.2002 to 31.12.2016 (1,904 death cases)

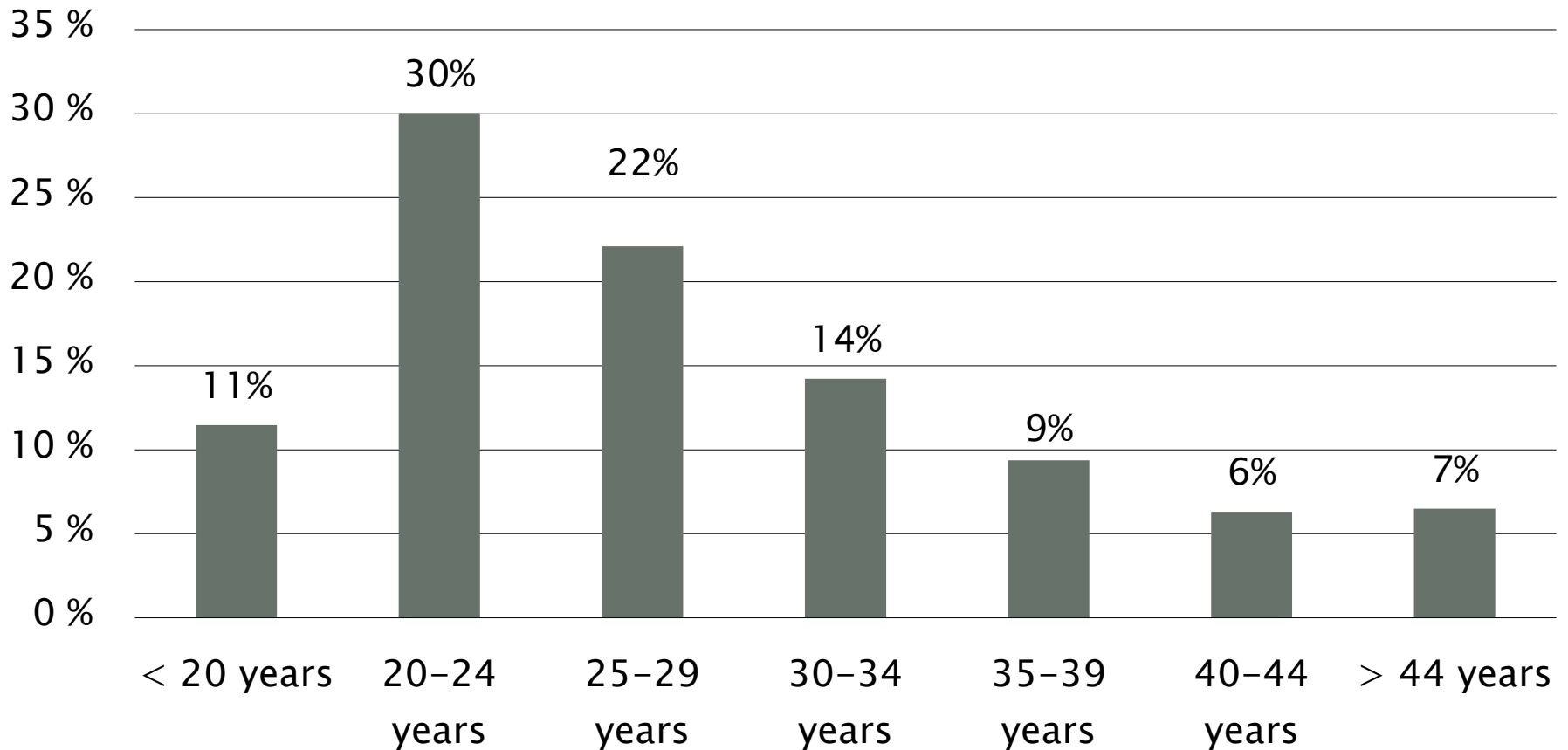» All 24,892 OST-patients starting OST between 1.1.2002 and 31.12.2016 (1,526 death cases).

preliminary results – not for publication

Years in OST (retention rate)

» 24,892 persons have been followed 197,739 person years between 1.1.2002 and 31.12.2016.

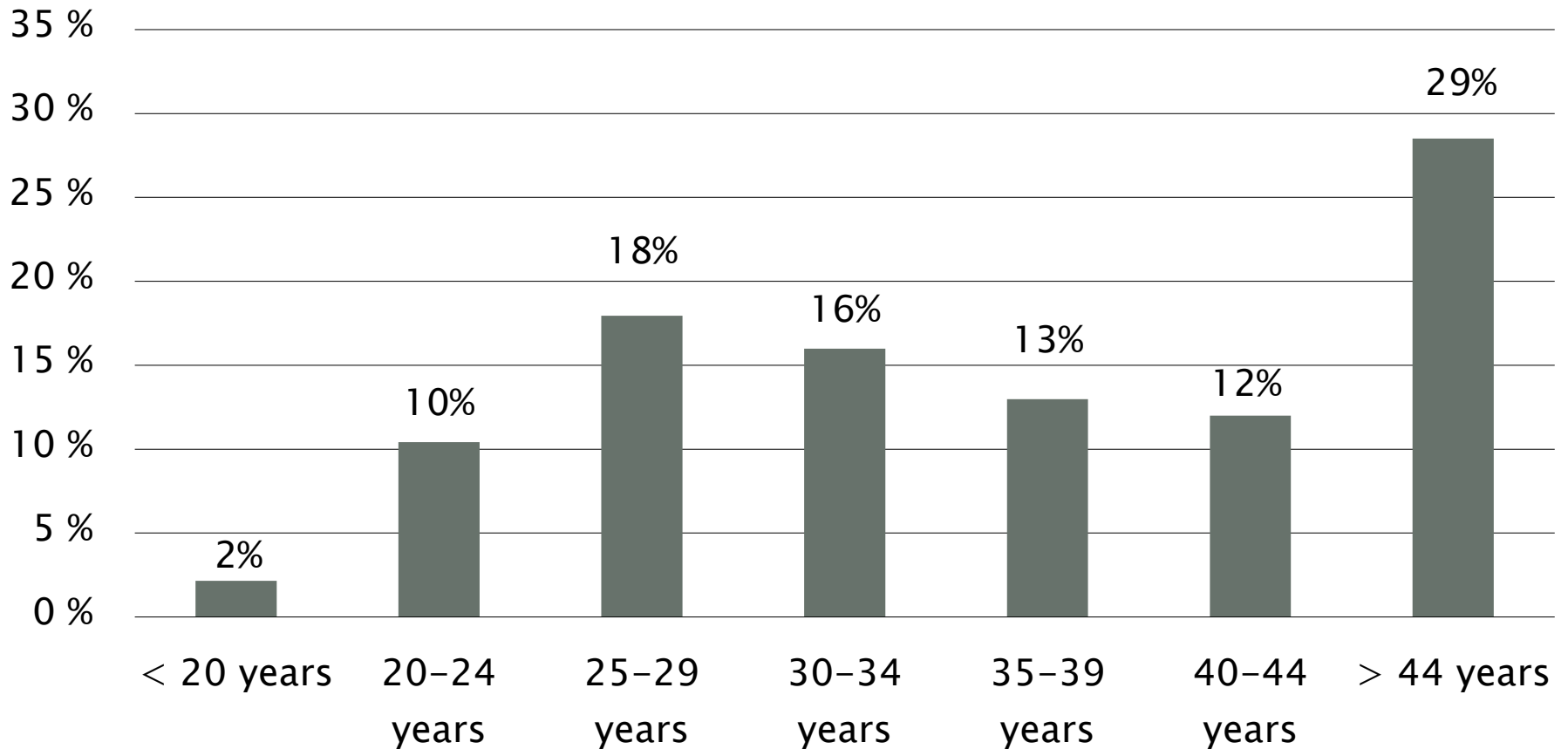» 126,469 (64 %) of these person years they have been in OST.

71.270

126.469

■ in OST   ■ out of OST
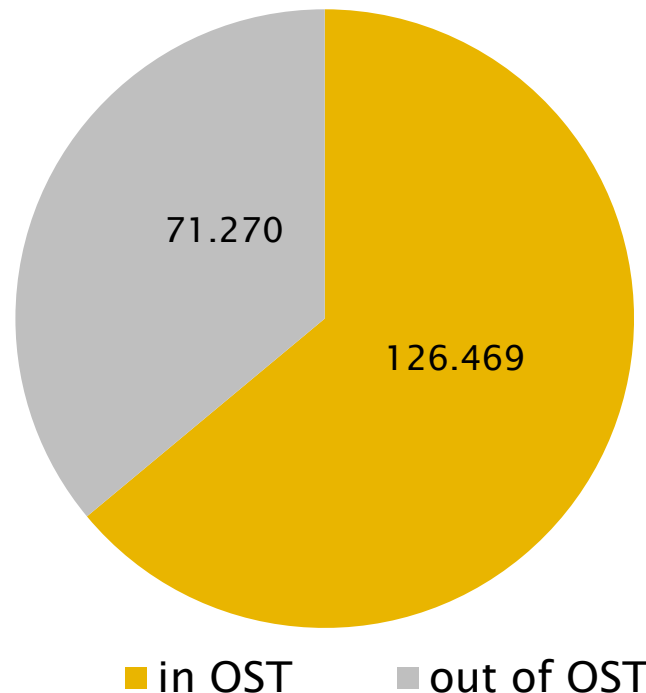
Age at Enrolment in the Cohort (N = 24,892, 25 % Females)

preliminary results – not for publication

Age at Death (N = 1,526)

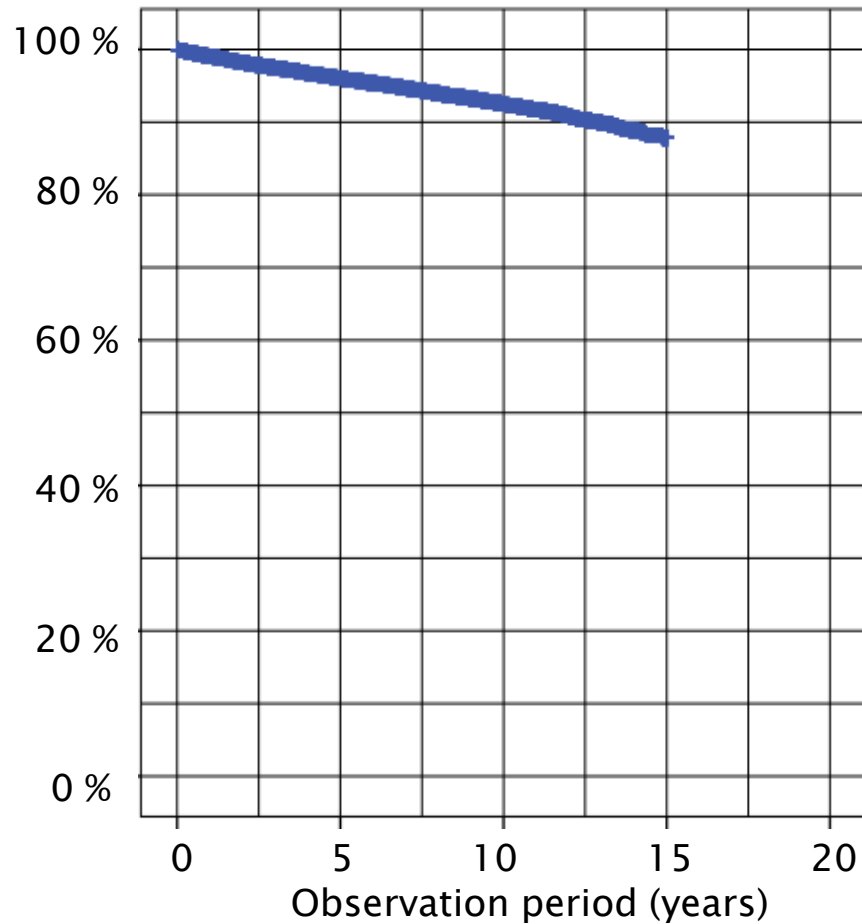|	< 20 years	20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	> 44 years
%	2%	10%	18%	16%	13%	12%	29%

preliminary results – not for publication

Survival Curve – Kaplan Meier (N=24,892)

preliminary results – not for publication

Crude Mortality Rate per 1,000 Person Years and Standard Mortality Ratio

Sex	Crude Mortality Rate	Mortality Rate in the Austrian population (same gender and age distribution)	Standard Mortality Ratio
Men	8,4 (7,9–8,8)	2,0	4,2 (3,9–4,4)
Women	6,3 (5,7–7,0)	0,8	7,9 (7,1–8,8)
All	7,7 (7,3–8,0)	1,7	4,5 (4,3–4,7)

preliminary results – not for publication

Comparison with other recent Cohort Studies in the EU

Country/ city	Enrolment	End of observation period	Persons	Mean age at enrolment	Person years	Death cases	Crude mortality rate (/1000)	Standard mortality ratio
Zagreb	01.2000-12.2006	12.2010	3.056	27,04	24.508	230	9,4 (8,3-10,7)	8,5 (7,4-9,6)
Latvia	01.2000-12.2011	12.2011	3.599	24,36	25.774	417	16,2 (14,7-17,8)	18,0 (16,4-19,8)
Malta	01.1994-06.2008	12.2008	1.659	23,35	13.548	47	3,5 (2,6-4,6)	3,5 (2,6-4,6)
Amsterdam	01.1996-12.2002	03.2009	2.566	38,14	21.694	348	16,0 (14,4-17,8)	5,1 (4,6-5,7)
Norway	01.1997-12.2003	12.2003	3.787	36,11	10.922	210	19,2 (16,8-22,0)	10,8 (9,4-12,4)
Bukarest	01.2001-11.2008	09.2010	2.584	23,34	19.428	110	5,7 (4,7-6,8)	6,9 (5,7-8,3)
Slovenia	01.2004-07.2007	12.2010	3.189	27,13	19.476	132	6,8 (5,7-8,0)	6,5 (5,5-7,7)
Poland	01.2000-12.2004	12.2006	4.728	26,01	21.782	495	22,7 (20,8-24,8)	21,5 (19,7-23,5)
Barcelona	01.1997-12.2007	12.2008	6.050	32,43	45.814	897	19,6 (18,3-20,9)	11,6 (10,9-12,4)
Austria	01.2002-12.2016	12.2016	24.892	28,87	197.739	1.526	7,7 (7,3-8,0)	4,5 (4,3-4,7)

EMCDDA (2015): Mortality among drug users in Europe: new and old challenges for public health. European Monitoring Centre for Drugs and Drug Addiction, Luxembourg

preliminary results – not for publication

Possible Next Steps (Question of Resources!)

» Analysis of cause of death registered in the General Mortality Register (GMR).

» Case coverage analysis GMR versus Special Register (SR) (first preliminary result: 36 % of death cases are registered as direct drug related deaths in the SR – Question: which code do they have in the GMR?

» Are there „suspicious" codes for other detah cases which could be direct drug related death cases missing in the SR.

» Mortality rates and OST-medication.

» Pooled analysis of data with other countries – direct comparison of standard mortality ratios.

» Implementation of a mortality cohort on routine base.

Thank you for your attention