# Appendix 1: Full search strategy used for Embase, Medline, Psychinfo, Global Health databases through OVID:

1. Uzbekistan/

2. Uzbek\*.mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kw, fx, dq, bt, id, cc, nm, kf, px, rx, ui, sy, tc, tm]

3. Mental Health/

4. exp Mental Health Services/

5. ((behavioral health or behavioural health or emotional health) adj2 (patient$ or service$ or care or assistance or help or work)).ti,ab,kw.

6. exp Community Mental Health Centers/

7. Hospitals, Psychiatric/

8. (Rehabilitation adj2 (centre or center)).ti,ab,kw.

9. (Community adj2 Psychiatry).ti,ab,kw.

10. exp psychiatry/ or psychopathology/

11. Crisis Intervention/

12. ((psychiatr$ or psycho$ or mental) adj2 (program$ or service$ or project$) adj2 implement$).ti,ab,kw.

13. ((psychiatr$ or psycho$ or mental) adj2 (patient$ or service$ or care or intervention$ or therap$ or program$ or treatment$ or prevention$ or promotion$ or care or assistance or help or work)).ti,ab,kw.

14. (psychotherap$ or counsel$ or psychoanalys$ or interpersonal or CBT or psychopharmacol$).ti,ab,kw.

15. Mental Health/ec, ed, hi, lj, ma, td [Economics, Education, History, Legislation & Jurisprudence, Manpower, Trends]

16. Psychology, Clinical/

17. Health Policy/ and Mental Health/

18. Mental Health Services/ec, ed, hi, lj, ma, og, sd, ut [Economics, Education, History, Legislation & Jurisprudence, Manpower, Organization & Administration, Supply & Distribution, Utilization]

19. Quality Assurance, Health Care/ and Mental Health/

20. ("Quality of Health Care"/ or Quality Indicators, Health Care/) and Mental Health/

21. exp mental disorders/ or psychotic disorders/

22. ("serious mental illness" or "severe mental illness").ti,ab,kw.

23. mental disorders/ or "bipolar and related disorders"/ or "schizophrenia spectrum and other psychotic disorders"/

24. 1 or 2

25. 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23

26. 24 and 25

# Appendix 2: Evaluation of deinstitutionalization in Eastern Europe

**Methods**

Two indicators were chosen for evaluating the impact of mental health reforms in the region: reduction of psychiatric beds and availability of community mental health services. This is because it could inform us on the progress of replacing long-stay institutions with less isolated community mental health (CMH) services, which is a primary goal of modern mental health reforms1.

The number of psychiatric beds located in mental and general hospitals in each of the 23 Eastern European countries were obtained from the MHA reports (2001, 2005, 2011 and 2014) (WHO, 2005; 2001, 2011, 2014). The percentage change in the number of beds were calculated for the periods 2001-2005, 2005-2011, 2011-2014 and 2001-2014. This allowed for the identification of fluctuation in the number of beds over this timepoint as well as calculation of the overall progress between 2001 and 2014. Beds in residential facilities or private hospitals were excluded due to reporting inconsistencies and missing data.

The availability of CMH care was assessed using the country profiles in the appendix of the latest Lancet review on mental health systems in 23 Eastern European countries and Kosovo, where evidence from 25 years of development of mental health care was summarised and analysed6. This review was completed by collecting information through systematic literature search and expert surveys in 21 countries (Estonia, Serbia and Moldova did not participate in the expert survey).

The following criteria were used while assessing the availability of CMH: (a) existence of mental health services other than in psychiatric hospitals that focused not just on pharmaceutical treatment but also had psychosocial component (primary care facilities, day-care clinics, CMH multidisciplinary teams, out-patient clinics, vocational rehabilitation and long-term community-based residential facilities 7; and (b) nation-wide scale-up of community-based services.

**Results**

Following the collapse of Communist regimes in 1989, the countries of Eastern Europe shared common patterns of mental health system development, but they all differed in terms of how successful the reforms were. It was not possible to identify a single ‘champion’ in mental health in the region. On the contrary, the review confirmed that all countries’ mental health systems experience substantial underfunding and most of them face the issue of insufficient mental health professionals. Ninety two percent of the countries have stand-alone mental health policies with implementation plans in the forms of national strategies (71%). Community services are primarily provided by mental health centres and day care facilities, as well as sporadically presented community mental health teams and residential services. However in vast majority of the countries the availability of services is poor or they operate as solitary projects in limited areas and run privately or by non-governmental organizations (NGOs; see Table 1). Countries like Bulgaria and North Macedonia slowed down development of community mental health and even demonstrate resurgence in institutional approach.

The number of psychiatric beds has reduced for the last 25 years in most countries of the region according to the Lancet review profiles6, but this data contradicts that of the MHA, which reports an increase in psychiatric beds in Georgia and Moldova and almost no change in Armenia, Croatia and Russia (see Table 2). Nino Makhashvili, an expert from Georgia, in personal communication confirmed reduction of psychiatric beds in Georgia and explained that contradicting figures on psychiatric bed changes presented in MHA and in the literature may be due to differences in the definition of psychiatric bed used (e.g. whether forensic psychiatric beds, social care beds were included or not). Azerbaijan, Lithuania and Poland demonstrated the most significant bed reduction of 40-55%. However, even where bed numbers have substantially reduced often it was not adequately accompanied by the establishment of alternative services in the community: mental health still largely relies on hospitals in the vast majority of the countries. One country (Hungary) has shifted care from psychiatric to general hospitals6. For the rest of the region the share of psychiatric beds in general hospitals remains very low and has not changed significantly since 2001 (see Table 3).

Four countries (Bosnia and Herzegovina, Georgia, Kosovo, and Lithuania) established nationwide community services in the form of mental health centres and multidisciplinary teams6. Among the Balkan countries, however, this happened with the financial assistance of the European Union and the United Nations after the mental health care infrastructure was destroyed by the Yugoslav wars. Georgia and Lithuania, on the other hand, have been reforming their CMH gradually since gaining independence and hence were included for further review. It was decided to include Poland into analysis as well, as it has demonstrated a strong commitment to CMH with the recent introduction of community mental health centres, each covering areas of 50000 to 200000 people. Apart from showing tangible commitment to the provision of mental health in the community by developing services integrated into state health system, Georgia, Lithuania and Poland have substantially downsized inpatient capacities and hence provide the best examples of community mental health care in the region. Other countries were excluded due to reported poor or lack implementation of reforms (Armenia, Czechia, Hungary, Slovakia, Romania, Ukraine), little availability of community services (Albania, Azerbaijan, Belarus, Russia, Moldova, Croatia, Latvia, Montenegro, North Macedonia, Bulgaria, Slovenia) or lack of information (Serbia, Estonia).

References:

1. Cohen A, Patel V, Minas H. A brief history of global mental health. *Glob Ment Health Princ Pract*. 2014;1:3–26.

2. World Health Organisation. *Mental Health Atlas* ; *2011*.

3. World Health Organisation. *Atlas: Country Profiles of Mental Health Resources 2001*. Geneva: World Health Organization; 2001.

4. World Health Organisation. *Mental Health Atlas 2005*.

5. World Health Organisation. Mental Health Atlas 2014.

6. Winkler P, Krupchanka D, Roberts T, et al. Appendix. A blind spot on the global mental health map: a scoping review of 25 years’ development of mental health care for people with severe mental illnesses in central and eastern Europe. *Lancet Psychiatry*. 2017;4(8):634–642.

7. Thornicroft G, Szmukler G, Mueser KT, Drake RE. *Organizing the Range of Community Mental Health Services*. Oxford University Press Oxford; 2011.

Table 1: Policies and community services in Eastern Europe

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Stand-alone Policy | Implementation plan | Community services/facilities available | Availability |
| Czechia | Yes | Strategy of Mental Health care reform 2013-2020 | Day clinics, Crisis centres, unspecified community services | Not available nationwide |
| Hungary | Yes | National Mental Health Programme | Out-patient community-based psychiatric services, unspecified community services | Outpatient community-based psychiatric services are available nationwide; services under new Programme were never integrated |
| Poland | Yes | National Programme of Protection of Mental Health 2010-2015 | Centres for Mental Health | Country-wide with each catchment are of 50000-200000 population |
| Slovakia | Yes | National Programme of Mental Health 2005-2015 | Sheltered employment and day care centres | n.a. |
| Albania | Yes | Mental Health Action Plans 2005-2010 and 2013-2020 | 10 Out-patient wards and 2 day-centres | n.a. |
| Bosnia and Hetzegovina | Yes | Republic of Srpska Mental Health development Strategy (2009–2015) and thePolicy and Strategy for the protection and promotion of mental health (2012-2020) of Federation Bosnia andHerzegovina | Network of Mental Health Community Centres and multidisciplinary teams | Available nationwide |
| Bulgaria | Yes | National Action Plan 2004-2012 | n.a. | n.a. |
| Croatia | Yes | Mental Health National Strategy 2011-2016 | Day centres, multidisciplinary teams | Pilot projects, availability is poor |
| Kosovo | Yes | Mental Health Strategic Plan 2004-2009 | Centres of Mental Health and outreach teams, residential services for rehabilitation | Available nationwide |
| Macedonia | Yes | 2005-2012 Strategic Plan for Psychiatric Care Development and 2013-2017 National Strategy | 8 Mental Health Centres, residential care in protected housing centre | n.a. |
| Moldova | Yes | Mental Health Reform Project 2015-2018 | Outpatient services, 5 community mental | Care is fragmented and inaccessible. |
| Montenegro | Yes | 2011-2014 Action Plan for the Improvement of Mental Health | Centres for mental health in each primary health centre | Only for CMD |

*Table 1: Policies and community services in Eastern Europe - continued*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Stand-alone Policy | Implementation plan | Community services/facilities available | Availability |
| Serbia | Yes | National Strategy for Development of Mental Health Care | n.a. | n.a. |
| Slovenia | No | No | Assertive community treatment teams within hospitals, residential facilities, NGO-based services | Only residential facilities available throughout the country |
| Romania | Yes | National Programme for Mental Health | Centres for Mental Health and day care centres | Centres for Mental Health about one in each county |
| Estonia | No | n.a. | n.a. | n.a. |
| Latvia | Yes | n.a. | Day-care, half-way house, residential facilities | Solitary projects, not integrated into system |
| Lithuania | Yes | n.a. | 115 CMH centres within primary centres, 40 day-care centres | CMH centres available mostly for CMD, day-care centres for the whole spectrum of mental disorders |
| Armenia | Yes | n.a. | Small community services run by NGOs | n.a. |
| Azerbaijan | Yes | Five-Year Strategic Action Plan | Early intervention, day-care, psychosocial rehabilitation | Only in the capital city |
| Georgia | Yes | The national strategy and action plan for 2015-2020 | Mobile Community-based services, multidisciplinary crisis intervention centres | Country-wide |
| Belarus | No | No | Rehabilitation and residential care Programmes | Sporadic |
| Russia | Yes | 2007–2012 the Federal Programme of Emergency Measures in Social Important Diseases | Rehabilitation Programmes | In some parts of the country |
| Ukraine | Yes | n.a. | Mental health care centres run by NGO | n.a. |

Table 2: Change in beds in psychiatric hospitals 2001-2014

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   |   | Psychiatric beds per 100.000 |   | Change in % |   | Change in % |   | Change in % | Total Change in % |
|   | 2001 | 2005 | 2001-2005 | 2011 | 2005-2011 | 2014 | 2011-2014 | 2001-2014 |
| Czechia | 97 | 98 | **1.03** | 91.64 | **-6.49** | 82.4 | **-10.08** | **-15.05** |
| Hungary | 23 | 23 | **0** | 2.83 | **-87.7** | 0 | **-100** | **-100** |
| Poland | 59 | 52 | **-11.86** | 39.47 | **-24.1** | 35 | **-11.33** | **-40.68** |
| Slovakia | 60 | 60 | **0** | 30.93 | **-48.45** | - | **-** | **-** |
| Albania | 26 | 20 | **-23.08** | 16.41 | **-17.95** | 15.4 | **-6.15** | **-40.77** |
| Bosnia and Herzegovina | 24 | 24 | **0** | 12.42 | **-48.28** | - | **-** | **-** |
| Bulgaria | 41 | 41 | **0** | 36.08 | **-12** | - | **-** | **-** |
| Croatia | 79 | 80.2 | **1.52** | 76.04 | **-5.19** | 79 | **3.89** | **0** |
| Kosovo | - | - | **-** | - | **-** | - | **-** | **-** |
| Macedonia | 82 | 59 | **-28.05** | 56.28 | **-4.61** | - | **-** | **-** |
| Moldova | 34 | 59 | **73.53** | 58.17 | **-1.41** | 59.8 | **2.8** | **75.88** |
| Montenegro | - | - | **-** | 53.08 | **-** | 42 | **-20.87** | **-** |
| Serbia | 41\* | 45\*\* | **9.76** | 39.37 | **-12.5** | 39 | **-0.94** | **-4.88** |
| Slovenia | 68 | 72 | **5.88** | 67.66 | **-6.03** | 57.1 | **-15.61** | **-16.03** |
| Romania | 60 | 55 | **-8.33** | 38.26 | **-30.44** | 50.6 | **32.25** | **-15.67** |
| Estonia | 80 | 80 | **0** | - | **-** | - | **-** | **-** |
| Latvia | 151 | 135 | **-10.6** | 107.3 | **-20.52** | 105.1 | **-2.05** | **-30.4** |
| Lithuania | 108 | 86 | **-20.37** | - | **-** | 65.3 | **-** | **-39.54** |
| Armenia | 47.8 | 47.8 | **0** | 46.37 | **-2.99** | 47.5 | **2.44** | **-0.63** |
| Azerbaijan | 71 | 69 | **-2.82** | 34.43 | **-50.1** | 32.6 | **-5.32** | **-54.08** |
| Belarus | 96 | 75 | **-21.88** | 58.51 | **-21.99** | 67.7 | **15.71** | **-29.48** |
| Georgia | 20 | 20 | **0** | 28.44 | **42.2** | 32.3 | **13.57** | **61.5** |
| Russia | 103 | 101 | **-1.94** | 109.53 | **8.45** | 102.8 | **-6.14** | **-0.19** |
| Ukraine | 93 | 93 | **0** | - | **-** | - | **-** | **-** |
| Uzbekistan | - | 31 | **-** | 16.9 | **-45.48** | - | **-** | **-** |

\*data for Yugoslavia

\*\*data for Serbia and Montenegro

Table 3: Change in psychiatric beds in general hospitals 2001-2014

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   |   | Psychiatric beds per 100.000 |   | Change in % |   | Change in % |   | Change in % | Total Change in % |
|   | 2001 | 2005 | 2001-2005 | 2011 | 2005-2011 | 2014 | 2011-2014 | 2001-2014 |
| Czechia | 14 | 15 | **7.14** | 13.41 | **-10.6** | 11.7 | **-12.75** | **-16.43** |
| Hungary | 72 | 72 | **0** | 72.21 | **0.29** | 74.6 | **3.31** | **3.61** |
| Poland | 10 | 12 | **20** | 14.3 | **19.17** | 15.3 | **6.99** | **53** |
| Slovakia | 30 | 30 | **0** | 38.1 | **27** | - | **-** | **-** |
| Albania | 0 | 5 | **400\*** | 4.1 | **-18** | 3.9 | **-4.88** | **290\*** |
| Bosnia and Herzegovina | 10 | 10 | **0** | 11.09 | **10.9** | - | **-** | **-** |
| Bulgaria | 19 | 19 | **0** | 32.61 | **71.63** | - | **-** | **-** |
| Croatia | 12 | 9.8 | **-18.33** | 19.48 | **98.78** | 19.7 | **1.13** | **64.17** |
| Kosovo | - | - | **-** | - | **-** | - | **-** | **-** |
| Macedonia | 20 | 8 | **-60** | 7.34 | **-8.25** | - | **-** | **-** |
| Moldova | 33 | 0.8 | **-97.58** | 0.84 | **5** | 5.4 | **542.86** | **-83.64** |
| Montenegro | - | - | **-** | 4.8 | **-** | 8.2 | **70.83** | **-** |
| Serbia | 3\*\* | - | **-** | - | **-** | 19.8 | **-** | **560** |
| Slovenia | 11 | 12.6 | **14.55** | 8.89 | **-29.44** | 8.7 | **-2.14** | **-20.91** |
| Romania | 16 | 20 | **25** | 36.38 | **81.9** | 21.3 | **-41.45** | **33.13** |
| Estonia | 21 | 21 | **0** | - | **-** | - | **-** | **-** |
| Latvia | 4 | 3 | **-25** | 12.28 | **309.33** | 10.8 | **71.23** | **170** |
| Lithuania | 7 | 11 | **-20.37** | - | **-** | 33.4 | **-** | **377.14** |
| Armenia | 0.2 | 0.2 | **0** | 1.46 | **630** | 2.5 | **71.23** | **1150** |
| Azerbaijan | 1.1 | 1.1 | **-2.82** | 0.78 | **-29.09** | 0.4 | **-48.72** | **-63.64** |
| Belarus | 3 | 5 | **-21.88** | 4.69 | **-6.2** | 3.3 | **-29.64** | **10** |
| Georgia | 0 | 0 | **0** | 0.71 | **610\*\*\*** | 2.3 | **223.94** | **2200\*\*\*** |
| Russia | 5 | 5 | **-1.94** | 1.75 | **-65** | - | **-** | **-** |
| Ukraine | - | 3 | **-** | - | **-** | - | **-** | **-** |
| Uzbekistan | - | 1 | **-** | 0.97 | **-3** | - | **-** | **-** |

\*for calculation 0 replaced by 1

\*\*data for Yugoslavia

\*\*\*for calculation 0 replaced by 0.1