Higher School of Economics:
Projecting Long Term Care Costs in Belarus

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Agenda

- Purpose of Actuarial Analysis
- Actuarial Model Methodology
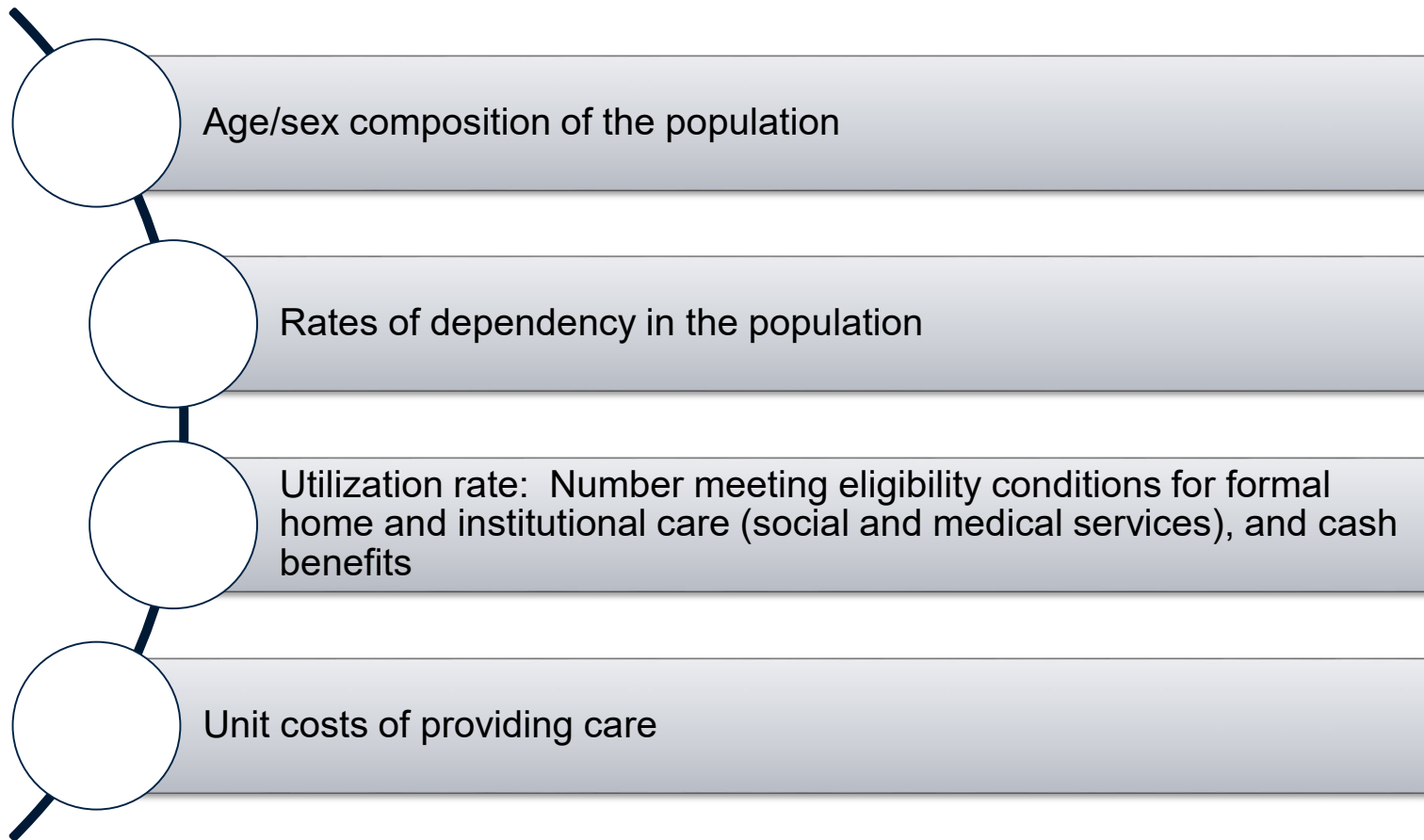- Draft Projection Results
- Next Steps

Purpose of Actuarial Analysis

- Prepare baseline projections of the cost of Belarus's long-term care system and how that cost will change due to:
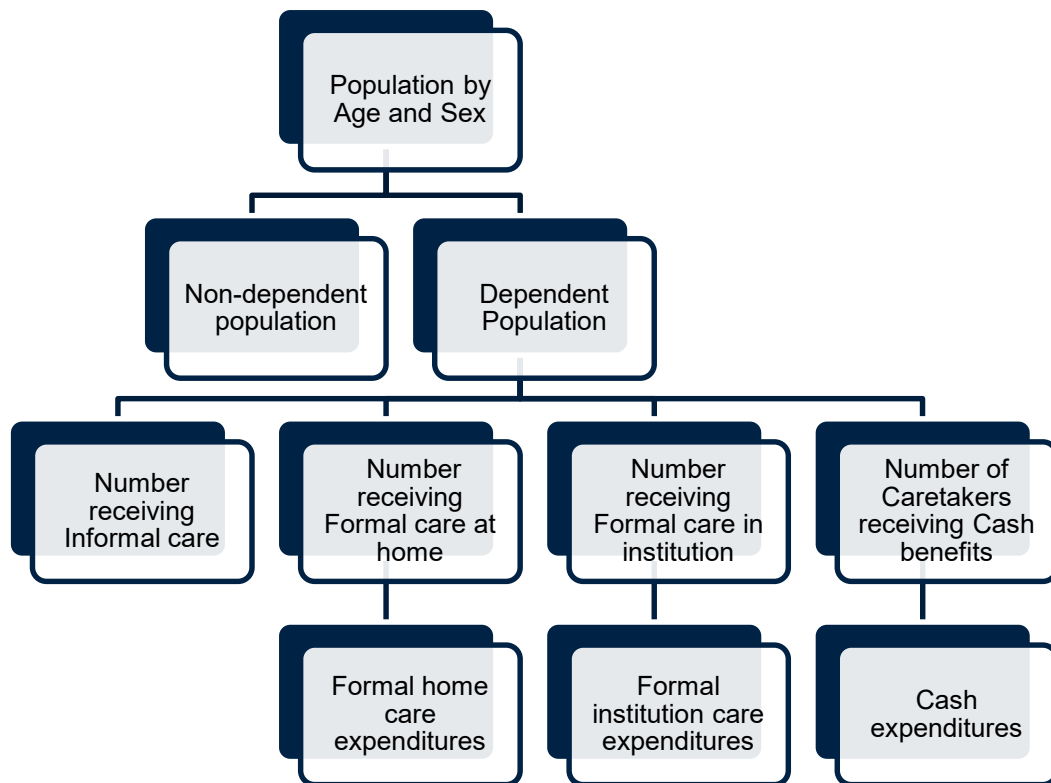
  - Population aging
  - Increasing costs of providing services

Prepare projections of cost or savings due to potential reforms to the long-term care system

Actuarial Model Methodology: Key Factors Affecting Cost

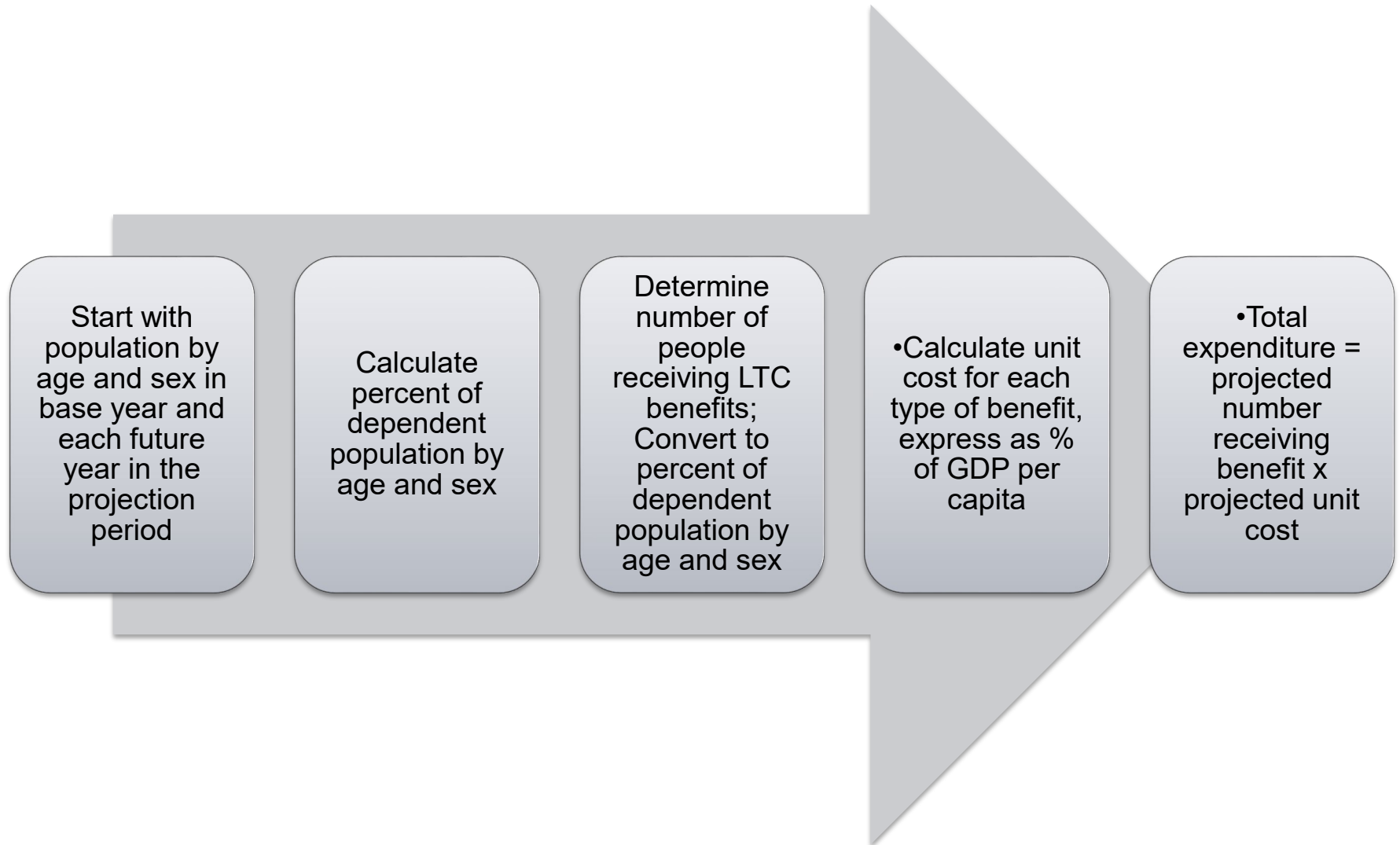Age/sex composition of the population

Rates of dependency in the population

Utilization rate: Number meeting eligibility conditions for formal home and institutional care (social and medical services), and cash benefits

Unit costs of providing care

Actuarial Model Methodology

Population by Age and Sex

- Non-dependent population
- Dependent Population
  - Number receiving Informal care
  - Number receiving Formal care at home
    - Formal home care expenditures
  - Number receiving Formal care in institution
    - Formal institution care expenditures
  - Number of Caretakers receiving Cash benefits
    - Cash expenditures

Generally, followed procedures used by European Commission for projection of long-term care costs for Aging Report 2018

Input factors should vary by age and sex in order to capture impact of population aging on LTC costs

Actuarial Model Methodology

| Start with population by age and sex in base year and each future year in the projection period | Calculate percent of dependent population by age and sex | Determine number of people receiving LTC benefits; Convert to percent of dependent population by age and sex | •Calculate unit cost for each type of benefit, express as % of GDP per capita | •Total expenditure = projected number receiving benefit x projected unit cost |

Population by Age and Sex for Belarus

- Sources of data for long term care projections
  - Belstat: 2017 population by age and sex
  - Belstat: Current and projected fertility rates by age
  - United Nations: Current and projected mortality rates by age/sex
- Used World Bank PROST model to prepare population projections
- Population is shrinking and proportion of elderly is increasing in Belarus

Belarus Population Projections: 2019-2038
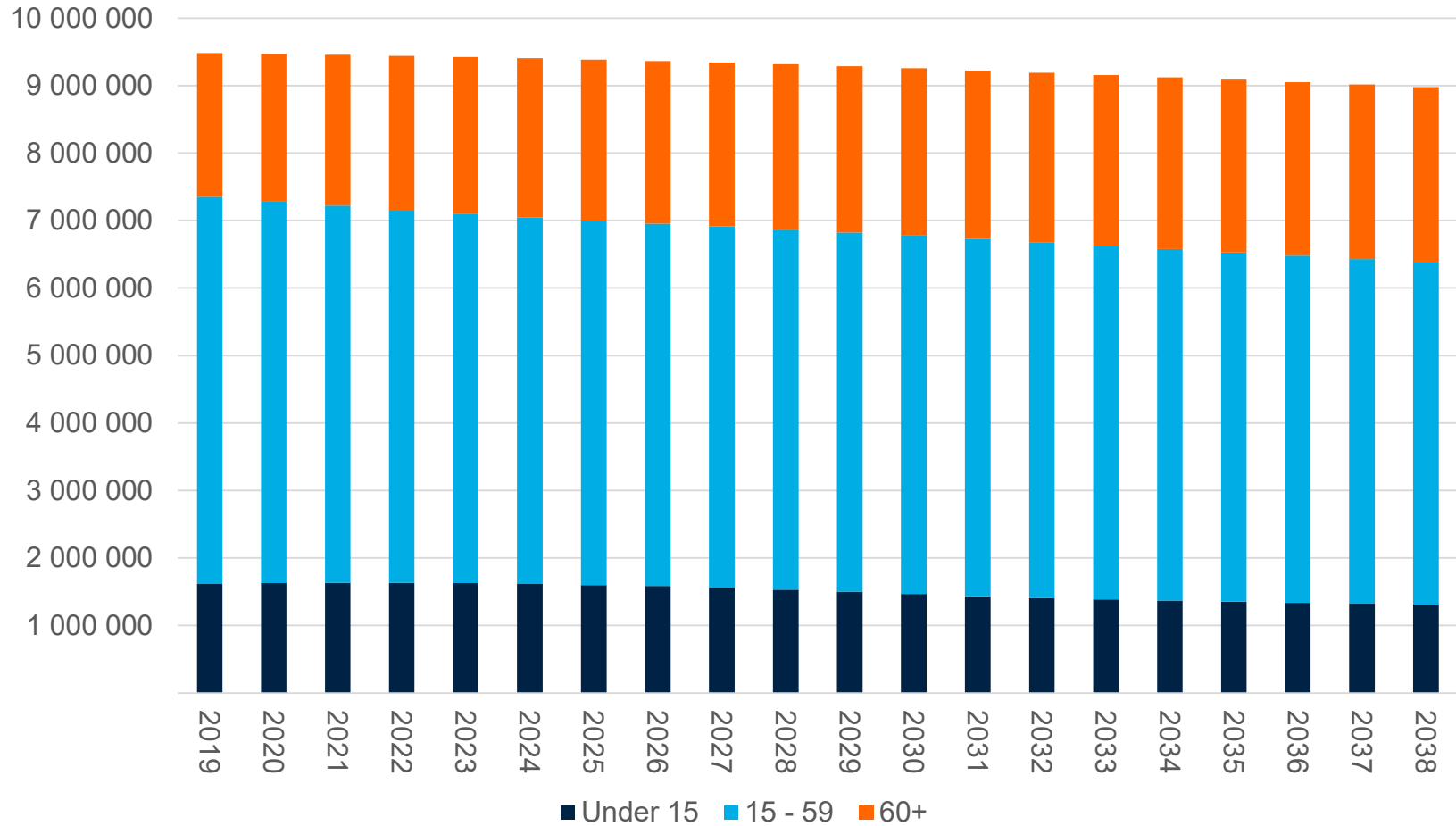
Dependency Rates

Used rates for EU28 from AR 2018

Rates derived from EU-SILC data for those with "severe" limitation (generally, problems with one or more ADLs)

EU-SILC also has dependency rates for those with some or severe limitations

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Dependency Rates

ADL = activities of daily living (may require home or institutional care)

Personal hygiene: bathing, grooming

Continence management: ability to use the bathroom properly

Dressing: select and wear proper clothes for different occasions

Feeding: ability to feed oneself

Ambulating: ability to walk and change positions independently

Dependency Rates

IADL = incidental activities of daily living (generally require home care assistance)	Transportation and shopping
	Prepare meals
	Manage household: cleaning, laundry, trash
	Manage finances
	Manage medications
	Communicating with others: phone, email, visitors
	Companionship and mental support

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Dependency Rates by Age: From AR 2018
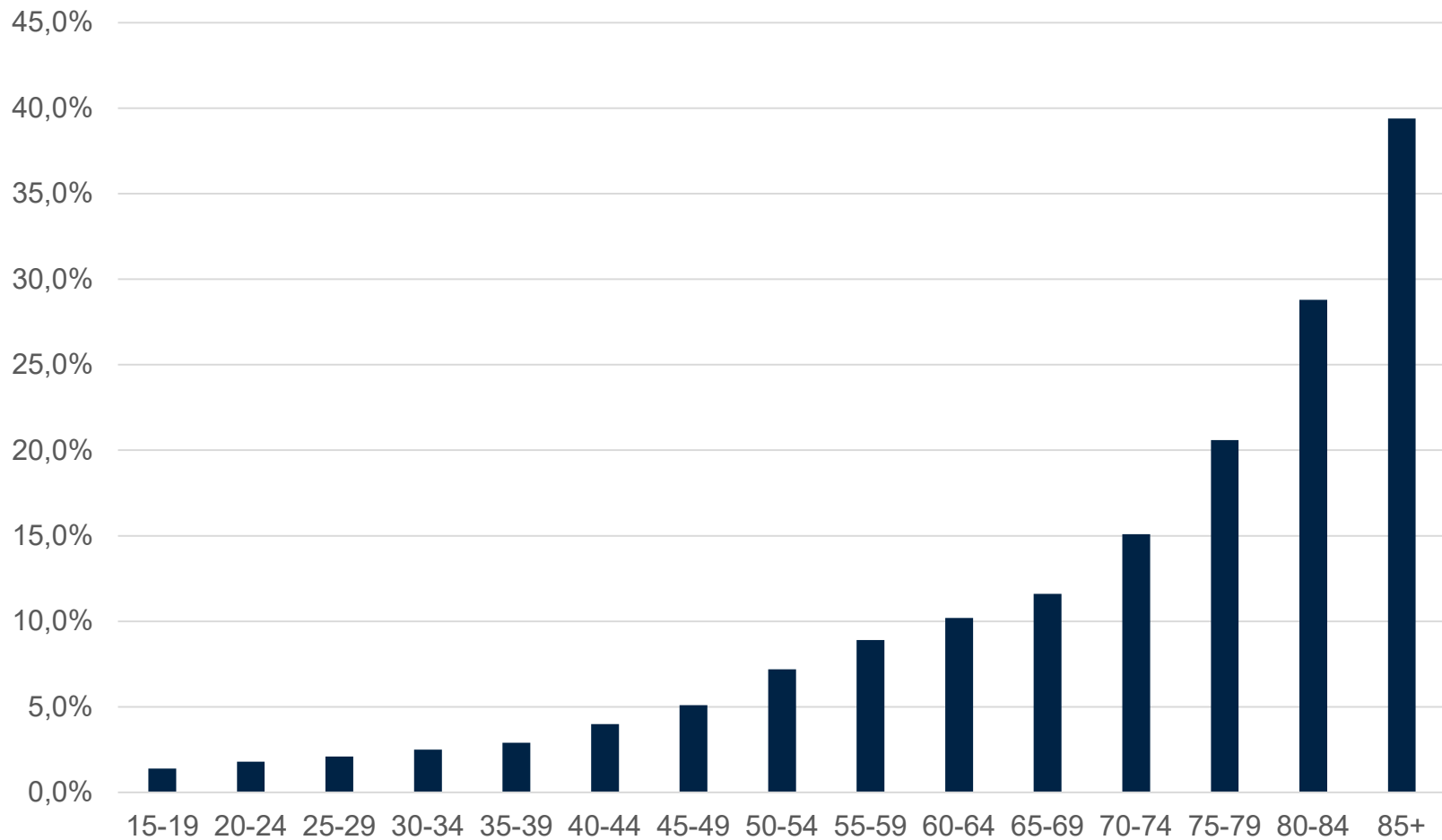
Size of Dependent Population in Belarus
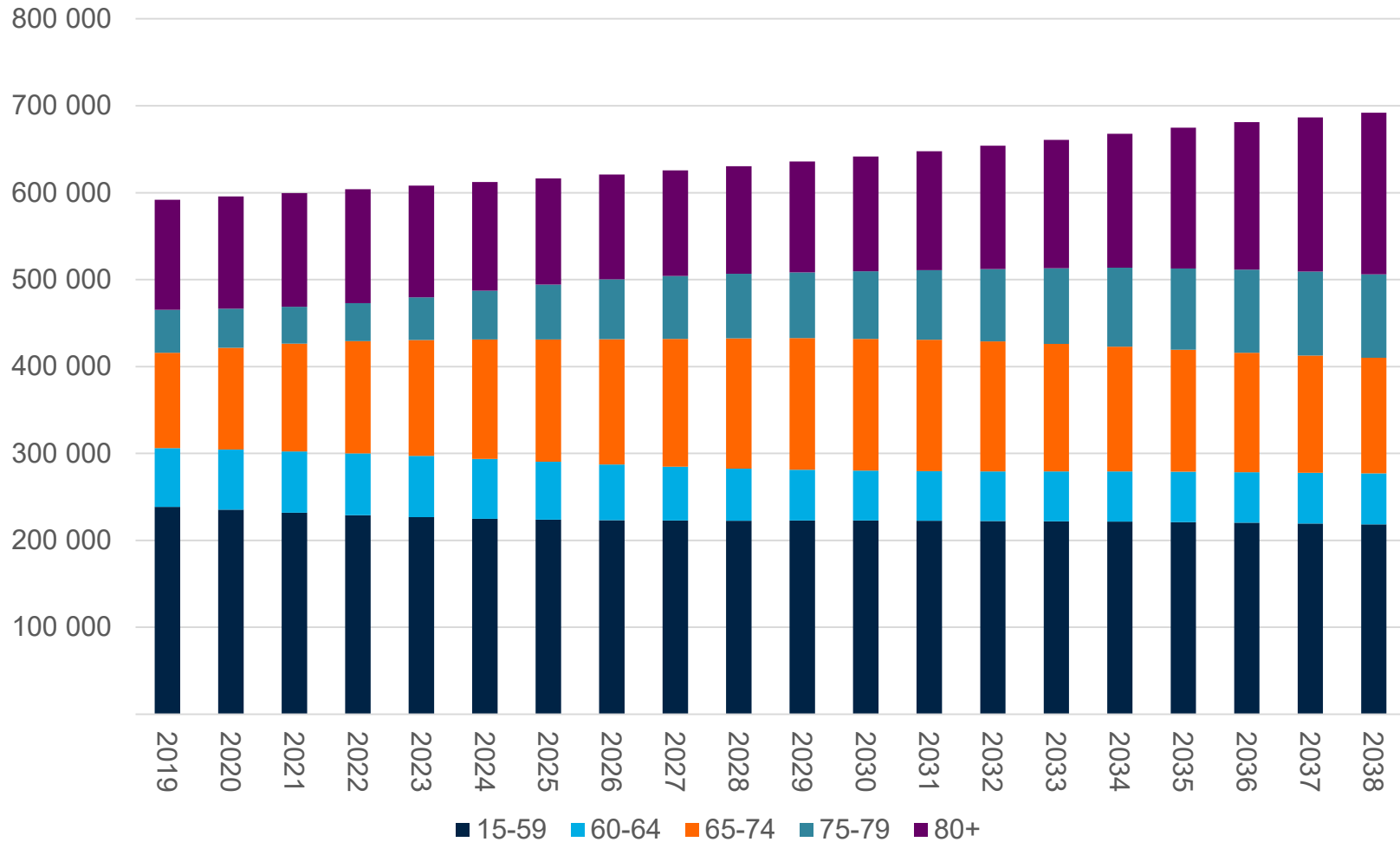
Number Receiving Benefits

Compare number receiving benefits in 2019 with size of dependent population in 2019

Data from MoLSP, MoF and from two representative oblasts

For home care, numbers available in broad age ranges.

For nursing hospitals/beds, numbers available in the aggregate from MoF and by age/sex from one oblast
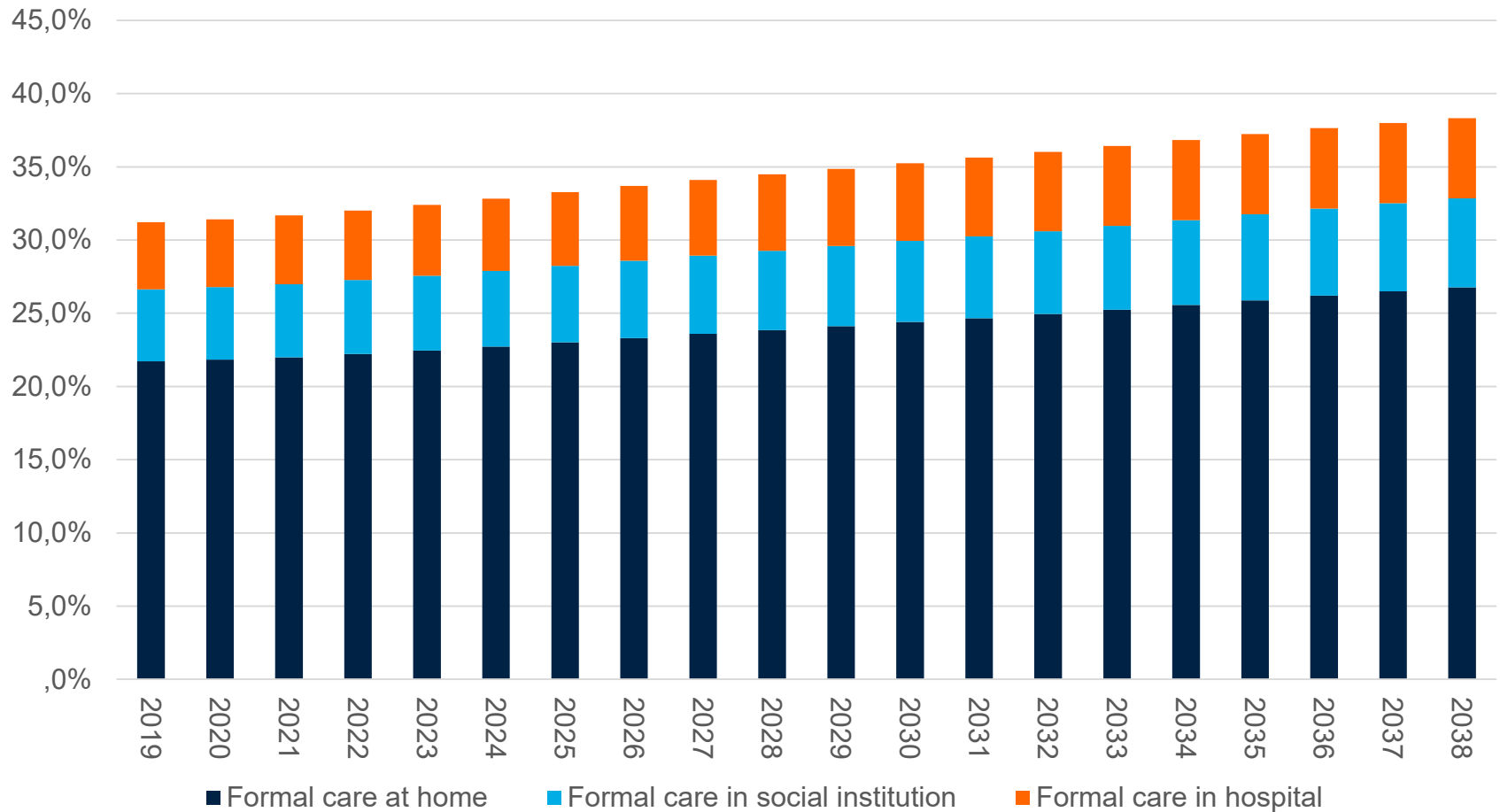
Assume percent receiving benefits by age/sex remains constant as a percent of dependent population

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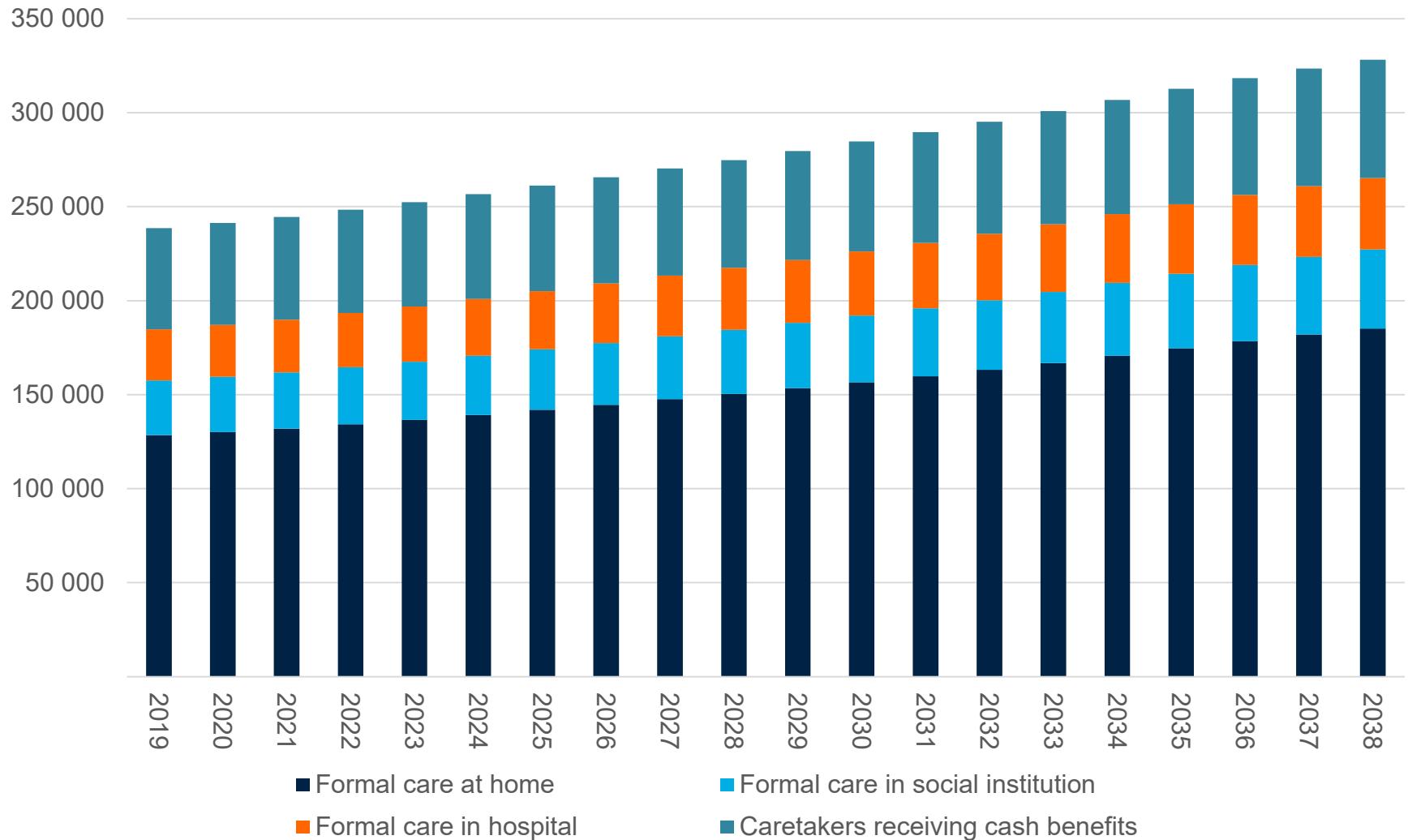# Percent of Dependents Entitled to LTC Benefits by Age Ranges

- Age ranges differ due to breakdowns provided in available data
- On average, percent receiving institutional care through social services only slightly higher than through nursing hospitals
- Except for very old ages, most receive informal care
- On average, about 65% of dependents receive informal care

	% Home	% Institution Social Service	% Institution Hospital
15-59	2.8%	0.6%	0.8%
60-64	2.8%	0.6%	5.0%
65-69	32.1%	7.3%	5.0%
70-74	32.1%	7.3%	11.3%
75-79	44.7%	10.1%	11.3%
80+	49.4%	11.2%	6.0%

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Percent of Dependents Receiving Formal Care at Home or in Institutions

Legend: ■ Formal care at home ■ Formal care in social institution ■ Formal care in hospital

Number Beneficiaries Including Caretakers

Legend:
- ■ Formal care at home
- ■ Formal care in social institution
- ■ Formal care in hospital
- ■ Caretakers receiving cash benefits

Unit Costs

- Use Government data to calculate unit costs

- Unit cost = expenditure on each type of care divided by number of dependents receiving that type of care

- Separately for home, social and medical institutional care

- Unit costs for each type of care assumed level by age/sex

- Costs expressed as % of GDP per capita and assumed to remain level
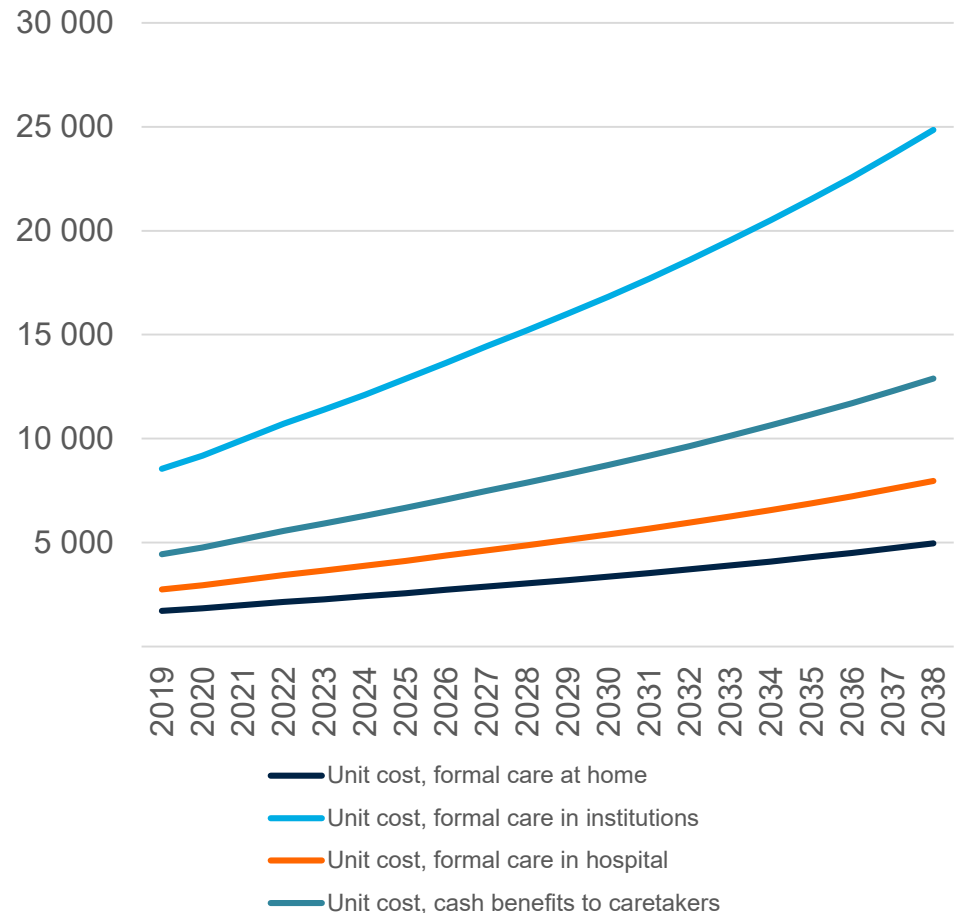
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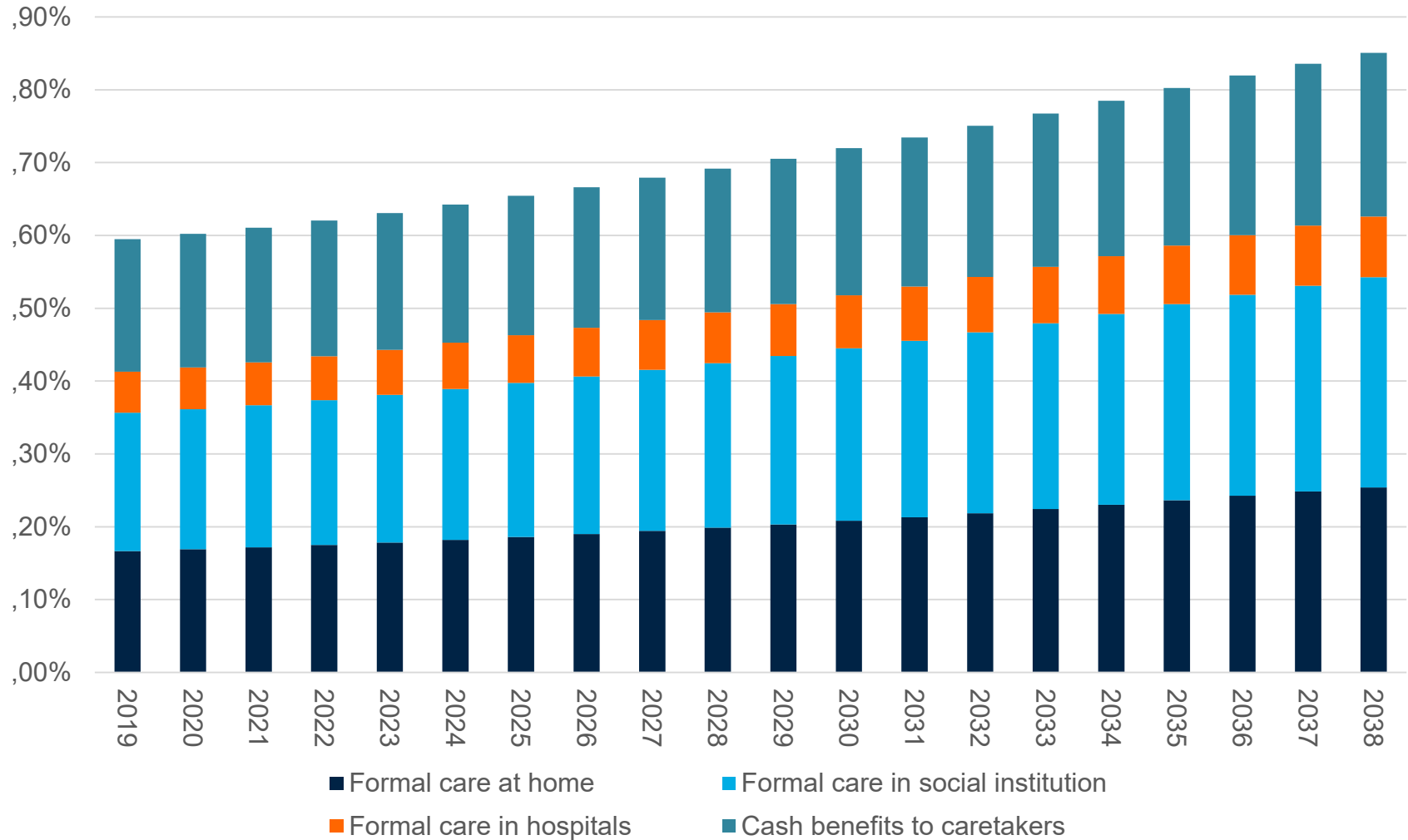# Unit Costs for Formal Care and Cash Benefits for Caretakers

- Home care has lowest unit cost, as expected
- Surprisingly, unit cost of care in nursing hospital appears to be lower than unit cost for social home

Legend:
- Unit cost, formal care at home
- Unit cost, formal care in institutions
- Unit cost, formal care in hospital
- Unit cost, cash benefits to caretakers

19

Total Cost of LTC

- For each type of care, multiply number of recipients by unit costs in each year

- Sum to get total cost in each year

- Results assume no changes in:
  - Plan benefits and eligibility conditions
  - Dependency rates by age
  - Benefit prevalence rates as % of population by age
  - Unit costs as a percent of GDP per capita

Cost of LTC as Percent of GDP, Baseline

Legend: Formal care at home, Formal care in social institution, Formal care in hospitals, Cash benefits to caretakers

Next Steps for Belarus

- Get feedback on methods, assumptions and data used in preparing projections

- Finalize baseline costs for current system

- Analyze cost impact of potential changes in eligibility, system benefits and other program features

- Examine impact of changes due to other factors, such as economic development, improvements in healthy life expectancy, etc.

- Improve overall data quality