Why healthy housing?

For many years, the housing environment has been acknowledged as one of the main settings that affect human health. The buildings in which we live, the neighbourhoods in which they are situated, and the regions to which they are linked determine, for example, the quality of our indoor air, the access we have to healthy foods, recreation facilities, and gainful employment. Much of our everyday lives, and hence our health, are associated with the condition, design, and location of the place where we reside.

Housing construction, maintenance, where houses are located (access to services) and how they are occupied, all have an impact on the health and wellbeing of the occupants and are appropriate targets for policy. Using the DPSEEA model (see figure 1) we can identify many important challenges, drivers and exposures in the domain of housing.

Some important drivers in the area of healthy housing are:

- population density;
- population ageing;
- economy/income (increasing socio-economic inequalities);
- life styles;
- spatial planning and policies regarding housing materials;
- construction standards;
- consumer products and energy saving as well as urban design (access to healthy environment, services, mobility); and
- transport.

There are a variety of indoor chemicals (VOCs, CO, NO₂, tobacco smoke, asbestos), microbiological (mould, dust) and physical exposures (temperature, radon and radiation) in and around houses

and building blocks associated with a range of health impacts (annoyance, asthma, cardiovascular diseases, etc.).

Figure 1 expresses something of this complexity but also illustrates another important point, namely that identical drivers can influence health through both a proximal (near in space and time) pathway but also a distal (or ecosystems) pathway. By extension, carefully conceived policies and actions can be relevant to both proximal and distal pathways. By framing issues using this simple conceptual framework, policies and actions can be highlighted which confer co-benefits, but which may also impact negatively on another domain. In the case of housing for example, policies to secure energy efficiency might reduce ventilation rates and by extension GHG emissions. However, the very same policies might profoundly reduce indoor air quality to the detriment of occupant health and well-being.

Policy actions

In many EU countries the main obstacles (or challenges) in developing healthy housing are a lack of awareness of potential health impacts amongst citizens, policy-makers and inspectorates, as well as contradictory regulation (e.g. energy saving vs ventilation). There is a lack of coherent policies, due to the difficulty of cross-sectorial or cross-ministerial collaboration. The conflicting areas between housing policies and environmental health should be considered at an early stage of planning in order to minimize negative health impacts. Suitable indicators need to be developed to evaluate the health impacts related to housing and spatial planning in a systemic way (Figure 2). We see large social inequalities in housing, between and within EU Member States (Figure 3).

Figure 1. Application of the dDPSEEA model to housing



Figure 2. Selected indicators on environmental and health effects of housing

DRIVING FORCES

- Degree of urbanisation¹
- Building rate of new private houses²
- Rate of renovation of old houses with state financial support (to increase insulation, energy-efficiency of heating devices)²
- Progress in energy efficiency in households (ODEX index)³
- Drivers of the change in average annual energy consumption per household³

PRESSURES

- Energy efficiency gain from building standards of new buildings³
- Household energy consumption for space heating per m² (climate corrected)³
- Household energy consumption for cooling per area (m²)³

STATE

- People living in homes affected by dampness and mould¹
- Proportion of households by mode of heating²
- Rate of overcrowding¹
- Proportion of dwellings lacking basic amenities¹
- Rate of buildings with energy certification /by result of the certification²

EXPOSURE

- Exposure to noise³
- Population living near roads of heavy traffic^{2,3}

EFFECTS

- Incidence of allergic respiratory diseases²
- Noise annoyance of the inhabitants¹
- Morbidity and mortality due to CO poisoning²
- Incidence of domestic accidents: falls, burns, scalds, asphyxiation, poisoning²
- Incidence of Legionellosis⁴

DATA SOURCES

- 1. Eurostat
- 2. National data collection
- 3. EEA
- 4. ECDC

ACTIONS

- Policy on installation of smoke-detectors²
- Policy on installation of CO-detectors²
- Policy on mandatory regular check of natural-gas heating devices²
- Regulation on low emission construction materials, furniture and other product used indoors²
- Labelling of building materials²
- National/regional/local programs to increase energy efficiency of buildings²
- Policy on mandatory energy certification of buildings²
- Policies on implementation of Tele-Health services²
- Policies on implementation of emergency alert systems²

SOCIO-ECONOMIC CONTEXT

- Functional and activity limitations¹
- Housing cost overburden rate¹
- At-risk-poverty rate¹
- Material deprivation rate¹
- Income inequality¹
- Monetary poverty (total population,
- the elderly)¹
- Housing deprivation¹

Figure 3. Share of total population living in a dwelling with a leaking roof, damp walls, floors or foundation, or rot in window frames of floor; by poverty status, 2012.



Source: EUROSTAT, European Union Statistics on Income and Living Conditions (EU-SILC), available at: <u>http://ec.europa.eu/eurostat/web/income-and-living-conditions/data/main-tables</u>

Key messages

Indicators and data on housing are widely available in international databases and can be amended by national data collections.

Structured analysis and reporting are needed in future health impact assessments, for which a combination of the modified DPSEEA and distal DPSEEA models is a useful tool. Several national policies proved to be effective in facilitating the provision of healthier housing.

An international compendium on effective good practices could be helpful in developing Europeanwide measures to ensure healthy homes for the citizens.

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