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CHRODIS+
IMPLEMENTING GOOD PRACTICES FOR CHRONIC DISEASES

Employment in the multi-morbidity care model for people with chronic conditions

Background and rationale

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Introduction

Chronic diseases, or non-communicable diseases (NCDs), are broadly defined by the World Health Organization (WHO) as "diseases of long duration and generally slow progression that are not passed from person to person"[1]. NCDs pose a serious threat to society and future development. Long-term health problems constitute to a greater risk of income poverty, social exclusion, severe material deprivation, and lower work intensity (ANED, 2013)[2]. Persons with longstanding health problem face higher rates of unemployment and inactivity (Corral et al., 2014)[3]. Based on the data of the 2011 ad hoc module of the EU Labour Force Survey, the employment rate in EU-28 for persons with limitations in work caused by a health condition was 29.6 percentage points less than for people with no such limitations.

With the ageing of the population, more and more people leave with chronic diseases in the EU. However, despite the accumulation of diseases is an age-related phenomenon, in absolute numbers, the amount of younger adults – those in their working age – suffering from chronic diseases, overcomes the amount of older adults with chronic diseases. Notably, one third of the European population aged 15 years or older lives with a chronic disease and **23.5% of the working population in the EU suffers from a chronic illness**, while two out of three people at retirement age have at least two chronic diseases, a condition referred to as **multi-morbidity**.

As the age of countries' populations tends to increase over time, they will become increasingly ill and consume an ever-larger proportion of the national budget in healthcare costs, the so-called compression of morbidity mostly due to NCDs. Chronic diseases pose a **serious societal problem in Europe**: the direct costs of care for chronic diseases coupled with **lower employment rates of people living with chronic health problems** generate loss for economies. In order to buffer such negative impact, people living with chronic diseases need **early and accurate diagnosis** as well as **appropriate treatment and management**. The organization and delivery of healthcare plays an essential part in chronic disease management.

While chronic diseases are the main causes of longstanding health problems in the working-age population, existing national policies, in most cases, do not address chronic illnesses specifically nor the specific needs of patients with highly cyclic conditions where periods of normal life (e.g. during remission) and periods of frailty (e.g. during treatment cycles) alternate. The mapping of policies, systems and services facilitating the inclusion of persons with NCDs done within the 3 years EU project PATHWAYS, has revealed that in most cases, people from this group are considered as part of a group of persons with disabilities, including persons with reduced work capacity due to illnesses. In many cases, persons with chronic health problems

[1] World Health Organization (WHO). Global Status Report on Noncommunicable Diseases 2014; WHO: Geneva, Switzerland, 2014; Available online: http://apps.who.int/iris/bitstream/10665/148114/1/9789241564854_eng.pdf?ua=1

[2] Academic Network of European Disability Experts (ANED) (2013) "European comparative data on Europe 2020 & People with disabilities", Final report prepared by Stefanos Grammenos from Centre for European Social and Economic Policy (CESEP ASBL), Available at: http://www.humanconsultancy.com/_layouts/15/WopiFrame.aspx?sourcedoc={EAFFD3CF-6972-47A4-9BAC-44805B6E0B07}&file=ANED%202013%20Task%206%20-%20comparative%20data%20synthesis%20report%20-%20Europe2020_final.doc&action=default

[3] Corral, A. Durán, J. and Isusi, I. (2014) "Employment opportunities for people with chronic disease", IKEI Research and Consulting, Eurofund, Available at: http://www.eurofound.europa.eu/sites/default/files/ef1459en.pdf

are eligible for specialized support in employment only when their condition is recognized as a disability (reaching a certain eligible degree of disability) or has a negative impact on their work ability, depending on national and regional regulations. The study showed that countries considered in this report do put in place provisions to support activation and greater labour market participation by vulnerable groups, but they do it in different ways. (www.path-ways.eu).

The growing prevalence of chronic diseases and their impact on productivity and labour market participation necessitates an increased awareness of the need for extensive policy level strategies for the inclusion of persons with chronic conditions in employment. Above all, no policies, indications and actions from governments are available regarding the relationship between multi-morbidity and working life.

Multi-morbidity and chronic conditions

Multi-morbidity is defined as the co-occurrence of multiple diseases in one same person and is **highly prevalent** in older persons, representing a **major challenge for healthcare systems**. It has been highly studied in the past years in many European and international projects and studies between which the Joint Action Chrodis which devoted a work package to study it and its consequences. In high-income Countries, up to 20% of the population develops multi-morbidity before the age of 40, thus affecting an important share of the population in its working age.

- **The absolute number of people affected by multi-morbidity is expected to double by 2035**, and at least two-thirds of the gain in life expectancy above 65 years will be spent with four or more chronic conditions.
- **In low income countries multi-morbidity occurs 15 years earlier** than in richer ones, making those living in deprived areas in their working age at a higher risk of developing negative consequences associated with multi-morbidity. Similarly, **multi-morbidity is more frequent in women than in men**.
- According to a large collaborative study involving 1.2 million participants, many of which still in their working age, **any combination of co-occurring cardio-metabolic conditions (i.e. myocardial infarction, diabetes and stroke) was associated with a multiplicative mortality risk**. The impact of multi-morbidity on individuals' health profiles surpasses the impact we would expect from the summed effect of single conditions.

Multi-morbidity does not only play a negative impact on people survival but affect also their physical and cognitive functions, eventually affecting quality of life, life satisfaction and the ability of carrying out a proper working activity.

- **Multi-morbidity is associated with poorer physical function**. On average, older people with multi-morbidity spend 81% of their remaining years of life with disability. Unfortunately, so far, no data have been published regarding the amount of life spent with disability of younger adults with multi-morbidity.
- **The speed at which diseases accumulate has been associated with faster health deterioration**. Women and those with a poorer social network are more susceptible to the detrimental consequences of a fast accumulation of diseases. Once again, this supports the idea on the need of special policies targeting specific groups of the population.

- **Different groups of diseases have a differential impact on functioning**. Neuropsychiatric diseases (including depression and dementia, but not only), alone or in association with each other, are major determinants of disability, more than cardiovascular diseases and cardiovascular multi-morbidity.
- **Community-dwelling older adults with multi-morbidity have two-fold higher odds of being frail than those without multi-morbidity.** Frailty is a condition of increased susceptibility to the negative consequences of external or internal stresses, which limits the functional ability of people, especially when affected by multiple chronic diseases.
- **More than two-thirds of older adults with frailty have multi-morbidity, but less than one-fifth of those with multi-morbidity are frail**. In other words, people with frailty are likely to suffer from multiple chronic disease, but not all the individuals suffering from multi-morbidity will develop a condition of frailty. Such evidence will be of extreme importance in planning policies of participation and reintegration of multimorbidity individuals at work.
- **People with multi-morbidity are also more likely to have poorer cognitive status** in both midlife and old age than those without multi-morbidity. Multi-morbidity is associated with all the stages of the cognitive dysfunction continuum, from the preclinical phase to cognitive decline, mild cognitive impairment and established dementia.
- **The association between multi-morbidity and poor cognitive performances may have clear potential detrimental effects on the ability to carry out an effective and safe work activity**.

In the planning of policies addressing people in their working like with multi-morbidity, it will be extremely important to **take into account the interplay between multi-morbidity, functional status (both physical and cognitive) and issues related to their medical care**. In fact, each of this domains may differentially affect the participation of people to working activities, thus requiring ad hoc measures.

Employment and Chronic diseases

- It has been extensively observed that **employees presenting one or more chronic condition have reduced employment prospects**, as many of them experience difficulties either staying at work or returning to work after a long period of absence. Chronic-illness can result in increased welfare payments for disability, sick leave, absenteeism, presenteism, unemployment, or early retirement according to the specific situation of the person.
- People with a **well-managed chronic disease** are **able to work normal hours** and, if reasonable accommodation in terms of flexibility of **working times or of workplace adaptation** is enabled, they can often stay at **work, return to work, maintain a work**.
- The **ability in the health as well as in the welfare sector, in particular in the employment sector, to manage complex and chronic conditions brings important returns to individuals, employers and indeed society as a whole** (e.g. retaining the experience and knowledge of a worker with a chronic illness is essential to the business outcomes of a company and the overall economic productivity of a country).
- The management of chronic diseases at work includes both actions for work retention and return to work (RTW):

a. **Work retention** aims to keep a person with a chronic condition in the work system as much as his/her health status/functioning/capacities allow. Workers in such situations have not yet experienced a (long-term) absence or sick-leave from work but are at risk of dropping out of the labor market because of their chronic illness.
b. **Return to work** initiatives aim to ease the reintegration in professional life 1) of persons out of employment resulting from a prior/ongoing health condition or 2) after a sick-leave – which can be a long-term leave – due to one's chronic condition. Evidence shows that return-to-work initiatives play a vital role in maintaining or improving the health status and can even contribute to recovery, reducing the risk of a long-term disability in a worker with a chronic illness.

- Company strategies can outline a **management plan/disability management plan for workers with chronic conditions** and provide details on the person(s) responsible for managing sick leave and accompanying the worker throughout his/her career pathway. Such plans keep the worker engaged in the workplace and productive, or help ill workers return to work as soon as possible and have a strong impact on the workers' morale and dedication.
- **Training and reskilling schemes can enable workers to expand their capabilities and skills and adapt to their changing health situation** by changing role in the company or moving to other areas of business better suited to their needs. While management styles differ between companies, training programs should be encouraged and access to tailored training, seminars or workshops for workers with chronic diseases should be part of a public or private company's program for the professional development of the staff, as they have the potential to be considerable sources of support for chronically-ill workers.

Multi-morbidity and employment

- People who experience **multiple long-term health conditions** have poorer outcomes for a range of employment-related measures and the chances of being in employment are dramatically reduced, particularly when there is a combination of mental and physical health conditions.
- The **cumulative effect** of having multiple conditions and the complexity faced by people in managing multiple health conditions in the labor market **affects their employment outcomes**.
- Having multiple health conditions is linked to **increased absenteeism, presenteeism, a reduced likelihood of returning to work** – particularly with co-morbid mental and physical long-term health conditions.

Considering this background, one of the main priorities for action at EU and national levels identified also in the Recommendations of the EU Pathways Project[4] and into the *Joint Statement on "Improving the employment of people with chronic diseases in Europe"*[5] should be **improving the integration of primary and specialist care to strengthen rehabilitation, recovery and employment of people with chronic**

[4] Leonardi M, Scaratti C. (2018), "Employment and People with Non Communicable Chronic Diseases: PATHWAYS Recommendations and Suggested Actions for Implementing an Inclusive Labour Market for All and Health in All Sectors", International Journal of Environment Research Public Health, Vol.15, No.8.
[5] European Chronic Disease Alliance (2017), Joint Statement on "Improving the employment of people with chronic diseases in Europe" – Framing paper. Available at https://ec.europa.eu/health/sites/health/files/policies/docs/2017_chronic_framingdoc_en.pdf

disease. Support services for employment should be integrated within the care pathway, and legislative provisions should promote such an integration. Patients' treatment plans and care pathways **should include a return-to-work and work retention component**, which should be part of an integrated care supply and should be discussed in the phases of the care trajectory with the empowerment and involvement of the patient. A variety of changes for the management of chronic disease care have been advocated[6] (Wagner et al. 1998; World Health Organization 2002).

Renders et al. (2001)[7] concluded after a Cochrane review that the most effective interventions for improvements in chronic disease care include the combination of multi-pronged strategies. The Chronic Care Model (CCM) is an example of this type of approach. In the CCM, improved functional and clinical outcomes for disease management are the result of productive interactions between informed, activated patients and the prepared, proactive practice team of clinicians and healthcare professionals The model has been implemented by a large number of organizations in the United States, the United Kingdom and Sweden, however patients with multimorbidity have complex health needs but, due to the current traditional disease-oriented approach, they face a highly fragmented form of care that leads to incomplete, inefficient, ineffective and possibly harmful clinical interventions, and are likely to receive complex drug regimens which increase the risk of inappropriate prescribing, drug drug interactions, and poor adherence[8]. As the care and treatment of multimorbidity patients is complex, it often involves a large number of healthcare providers and resources. There is limited evidence on the currently available care pathways for multimorbidity; there are few examples of integrated care programs for chronic diseases implemented in relatively small populations and this was the challenge faced by the Joint Action on Chronic Diseases and Promoting Healthy Ageing across the Life Cycle (JA-CHRODIS). This project specifically focuses on development of common guidance and methodologies for care pathways for multimorbid patients: **the CHRODIS multimorbidity care model. (**Multimorbidity care model: Recommendations from the consensus meeting of the Joint Action on Chronic Diseases and Promoting Healthy Ageing across the Life Cycle (JA-CHRODIS): https://www.sciencedirect.com/science/article/pii/S0168851017302348)

Employment in the multimorbidity chronic care model

Several components of the Chrodis Multimorbidity Care Model have been explored and in the new JA CHRODIS PLUS are now implemented in ITALY, SPAIN, LITHUANIA.

[6] Wagner, E. H. 1998. Chronic disease management: what will it take to improve care for chronic illness? Eff Clin Pract, 1, 2-4.

[6]WHO, 2002. Innovative care for chronic conditions: building blocks for action: global report. ISBN 92 4 159 017 3; WHO, Geneva Switzerland

[7] Renders CM, Valk GD, Griffin S, Wagner EH, Eijk JT, Assendelft WJ (2001). Interventions to improve the management of diabetes mellitus in primary care, outpatient and community settings, Cochrane Database Syst Rev, (1). doi: 10.1002/14651858.CD001481

[8] Fortin M, Dubois MF, Hudon C, Soubh Hi, Almirall J.(2007). Multimorbidity and quality of life: a closer look, Health and Quality of Life Outcomes, 5 (52). doi: 10.1186/1477-7525-5-52

- A number of **required elements** can be identified to **establish successful integration of care**[9]: patient centricity; multidisciplinary team based approach; pre-defined coordination of the total care process; clearly defined roles and responsibilities; good communication among all care providers; adequate education, clear guidelines/protocols on management/follow-up care; rapid access back to secondary care; and adequate IT systems.
- **Widespread and improved integrated care may help reduce the impact of the disease** and support people with chronic diseases successfully managing their condition in their everyday life, in accordance with their health status, including living a normal working life, returning to/retaining work when appropriate

However one of the issues arising from previous JA was that it was agreed by all experts, from more than 60 EU Countries, that access to social and community resources are relevant aspects of the care of patients with multimorbidity, but these are not included in the formal care process and the availability of these services is extremely variable. That is why **including employment in the multimorbidity care models seems a response to the need highlighted by countries. In the care pathways there could be 2 possible ways of introducing the issue of employment the first is Along all the care pathways, the second is within one of the phases of the rehabilitation program. Following the identification of these 2 possible entry points within the JA CHRODIS PLUS two instruments are proposed to be used at different entry points of the Multimorbidity Care model: the Work Ability Index (WAI) and the Work Rehabilitation Questionnaire (WORQ) respectively.**

1. **Along all the care pathways- introducing employment issues in all levels of care:** from primary care to specialized interventions there should be integration so as to have a coherent pathway for a person with a chronic condition able to foster staying in, integration or reintegration in the labor market. To do this it is of utmost importance to identify simple ways to monitor work ability in the working population on a regular basis. The Finnish Institute of Occupational Health (FIOH) played a pioneering role during the 1980's when it developed a generic tool to assess work ability, the so-called "Work Ability Index" (WAI); it considers the workers' self-assessed work ability in relation to work requirements, health status and the worker resources. WAI has since then been widely disseminated and is nowadays the most commonly used tool for measuring work ability.

   1.1 Work Ability Index (WAI). The Work Ability Index (WAI) is composed by 7 dimensions: Current work ability compared with the lifetime best, Work ability in relation to the demands of the job, Number of current diseases diagnosed by physician, Estimated work impairment due to diseases, Sick leave during the past year (12 months), Own prognosis of work ability two years from now and Mental resources[10].

2. **In the Rehabilitation programs:** Labour market participation represents a key goal of rehabilitation for individuals with chronic conditions and medical treatment and psycho-social support are key in

[9] European Cancer Organization (2017), Position Statement: Integrated Cancer Care: Bringing Primary Care and Secondary Care Together. Available at: http://www.ecco-org.eu/~/media/Documents/ECCO-sections/Policy/Positions-and publications/2017/ECCO_Position_Statement_Integrated_Cancer_Care.pdf?la=en

[10] Tuomi K, Ilmarinen J, Jahkola A, Katajarinne L, Tulkki A. (1998). Work Ability Index. 2nd revised edn. Helsinki: Finnish Institute of Occupational Health

supporting patients in managing their conditions. The efficiency and effectiveness of some multidisciplinary vocational programs is still unclear in terms of integration and reintegration of people with chronic health conditions in specific pilot interventions conducted. This is why a standard instruments in the rehabilitation part of the multimorbidity chronic care model could be useful to standardize pathways and make them less fragmented for people with NCDs.

2.1 Work Rehabilitation Questionnaire (WORQ). WORQ is a patient questionnaire to assess and evaluate functioning in rehabilitation settings and is based on the biopsychosocial model of health and disability based on the WHO International Classification of Functioning Disability, and Health (ICF); 2. it is used and understood in any rehabilitation setting or by any responsible professional and the version that we propose is the self-assessment form that can be done by the person along the care pathways to measure his/her functioning and his/her difficulties in relation to work; 3. WORQ can be done /administered at any time point within the continuum of the return-to-work process.[11]

Conclusions

In the frame of the Chrodis Plus Joint Action, implementation is needed so as to fight the burden of chronic conditions. In this frame collaboration between two work packages dealing respectively with Care pathways and Employment for people with NCDs was needed.

In collaboration between WP6 and WP8 the CHRODIS PLUS Expert meeting is organized to address the problems of chronic patients with multi-morbidity, to define how the employment might impact on the care process of these patients and to make aware the employment sector of their situation.

Millions of European with NCDs will benefit of a more holistic biopsychosocial, inclusive approach aiming to achieve and prevention of disability due to NCDs.

The final aim of this expert meeting will be the production of a document useful to the introduction of employment into the Multimorbidity Care Model so as to innovate care and pathways of chronic patients.

For further information:

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[11] R. Escorpizo, S. Brage, D. Homa, G. Stucki (2015). Handbook of vocational rehabilitation and disability evaluation, Springer 2015, Chapter 23, pp. 499