Savings in social expenditures for work incapacity in patients with inflammatory bowel disease depend on access to innovative therapies in Poland

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Objectives Inflammatory bowel diseases (IBD) are an increasing burden for societies. We examined Polish Social Insurance Institution (ZUS) work incapacity expenditures for people with IBD compared with the general population.
Methods Aggregate data were obtained on ZUS expenditures between 2012 and 2021 in Polish zlotys (PLN). Annual work incapacity benefit expenditures were analyzed and IBD benefit expenditures were examined relative to innovative IBD drug utilization in individual provinces.
Results Between 2012 and 2021, annual ZUS expenditures per person increased, while expenditures per IBD patient decreased. Proportionally, absenteeism was the largest ZUS expenditure in the general population, while disability pensions were the largest in the IBD population. ZUS expenditures due to absenteeism in the general population increased by PLN 282 per person; those due to disability pensions decreased by PLN 85. Disability pension spending due to Crohn's disease (CD) and ulcerative colitis (UC) decreased by PLN 371 and PLN 284, respectively, while absenteeism spending per person with CD and UC decreased (PLN 58 and PLN 35, respectively). Nationwide in 2021, 8.5% of people with CD and 1.9% of those with UC received innovative drugs. The percentage of people receiving innovative drugs and ZUS expenditure per person were inversely related in 9/16 provinces for CD and 5/16 for UC.
Conclusion Polish state spending on work incapacity benefits increased in the general population but decreased in people with IBD between 2012 and 2021. Use of innovative drugs was associated with reduced spending per person with IBD in some provinces. Eur J Gastroenterol Hepatol XXX: XXXX–XXXX

Introduction

The incidence and prevalence of inflammatory bowel diseases (IBD) have steadily increased in recent decades and they are a growing burden for both patients and caregivers, as well as for societies and healthcare systems [1]. Most patients are diagnosed between the ages of 20 and 40 years, that is, during the period of greatest career development and professional activity [2]. Understanding the social burdens associated with specific diseases is essential for planning long-term health policy. In addition to the costs incurred for treatment, important social costs are also incurred, including those related to loss of productivity due to temporary or permanent inability to work. Only a single study has so far assessed the social costs of lost productivity or public spending associated with lost productivity, and most have looked only at absenteeism among patients with IBD [3,4]. Since little data is available, it is not possible to assess trends in the cost of lost productivity over time, including the impact of the introduction of biological and other innovative medicines on public spending [5].

Clinical experts and health care system experts have indicated that the escalation of costs and public spending incurred by the National Health Fund (NFZ) of Poland in caring for patients with IBD is driven, among other things, by suboptimal diagnostic and therapeutic processes. Financial resources are not sufficiently directed towards prompt diagnosis and effective treatment at an early stage of the disease; as a result, the cost burden is shifted towards managing serious complications and the payment of benefits resulting from incapacity to work.

There are currently just over 100 000 people with diagnosed IBD living in Poland [6]. The NFZ began to reimburse innovative treatments for Crohn's disease (CD) and ulcerative colitis (UC) in 2007 and 2013, respectively, providing access to modern therapies to patients with the most severe IBD. Over the years, the eligibility criteria for treatment reimbursement and continuation have been gradually relaxed, making it possible to cover a broader range of patients.

This retrospective comparative study examined the amount and dynamics of changes in financial benefits granted to patients with IBD for incapacity to work in Poland in the period 2012–2021 compared with

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expenditures for these benefits in the general population. In addition, the relationship between the cost of incapacity benefits in individual provinces and the percentage of people treated with innovative IBD therapies under the NFZ was examined.

Methods

The Social Insurance Institution (ZUS) and the Agricultural Social Insurance Fund (KRUS) are the only state organizations providing social insurance in Poland, including collecting health and social insurance contributions, determining entitlements to social security benefits and paying these benefits. Social insurance in one of the two institutions is mandatory for those who are employed based on a contract or mandate contract, and those who are involved in non-agricultural or agricultural economic activity.

We analyzed ZUS expenditures due to all disease groups A00–Z99 (according to the International Classification of Diseases and Health Problems [ICD 10]) in the general population and due to CD (K50) and UC (K51) in the years 2012–2021. We obtained aggregate data categorized by voivodship and sex; total expenditure was divided into five categories: disability pensions, absenteeism, social pensions, rehabilitation benefit and medical rehabilitation. We did not obtain data on individual patients. In 2021, 16.078 million people were insured through ZUS, which represents 93.4% of the insured population. At that time, 1.135 million people were insured through KRUS. The KRUS data we obtained covered a shorter period (2017–2021) since earlier data were not available. As these data were less detailed than the ZUS data, we decided to omit them from this analysis.

Definitions of social benefits granted to individuals of working age who are unable to work are as follows. A person who has taken up a professional activity, pays insurance contributions and then has a medical event resulting in permanent loss of ability to work may apply for a disability pension. A person who has been diagnosed with a disability but did not start paying insurance premiums while working (e.g. as part of an employment contract) qualifies for a social pension. A person who is temporarily unable to work due to illness can receive absenteeism benefits. If this absence extends beyond 180 days (270 days for pregnant women), the individual is entitled to apply for a rehabilitation benefit, which is provided to people who are likely to recover and return to professional activity. In addition, therapeutic rehabilitation benefit aims to return patients to partial or full physical and mental fitness and can take place in the person's home or at an inpatient or outpatient centre.

Financial data obtained from ZUS included beneficiaries in the general population as well as those to whom benefits have been paid under diagnoses K50 (CD) and K51 (UC). The IBD expenditures considered here were only those incurred as a result of the main CD or UC diagnosis; expenditures related to absenteeism of a person with a CD or UC due to other diagnoses were not included in this analysis.

In Poland, women are entitled to retire at the age of 60, while men are entitled to retire at the age of 65. The working-age population was defined as all men aged 18–64 years and all women aged 18–59 years. Expenditures incurred for people of working age more accurately represent the real social burden of incapacity for work, as they benefit the population that should be in the workforce.

Data on the number and age of people living in Poland, people of working age, gross domestic product per capita by voivodship, and Consumer Price Index (inflation) in Poland between 2012 and 2021 were obtained from the Central Statistical Office (GUS) [7–9].

Data on the number of patients with CD and UC categorized by sex and voivodship (2012–2021), as well as the number of patients with IBD treated with innovative drugs, which include biologic drugs and new small molecule drugs, in relevant drug programmes for CD (2012–2021) and UC (2014–2021), were obtained from the NFZ databases, including the System and Implementation Analysis Database (BASIW) [10]. Under the health insurance system in Poland, the NFZ is the only state payer that covers the entire population of the country. Services associated with innovative treatment of CD or UC were identified in the NFZ service database with respect to specific products covered by the NFZ contracts. Detailed methodology on NFZ data use has been described by Zagorowicz *et al.* [6] and Kucha *et al.* [11].

Values in PLN are rounded off to the order of unity.

Statistics

A longitudinal data analysis on work incapacity benefits from 2012–2021 was conducted. To maintain currency purchasing power parity, 2012–2020 values were scaled by the cumulative inflation rate. The time-series scaling methodology was based on the historical cumulative inflation rate.

The base year was set at 2021 and scaled values were applied accordingly. The cumulative inflation for 2021 was therefore 100% and the scaled value for that year was equal to the actual historical value. For 2020, for example, the difference between the scaled value and the actual value was the 2021 inflation index of 105.1%. For 2019, the difference between the scaled value and the actual value was the cumulative inflation of 2020–2021, that is, 105.1% × 103.4% = 108.7%, etc.

A comparative analysis between voivodeships for expenditures on work incapacity benefits was performed only for 2021. To ensure that the spending in each province could be compared accurately, an adjustment was made to account for differences in average gross wages between voivodeships. This procedure aimed to reduce the influence of economic status in a given voivodeship on the amount paid in social benefits since sickness benefits are determined by wages. This helps to correct any potential bias that may have arisen due to higher benefits being paid in richer provinces voivodeships.

Scaled values were obtained by multiplying the real value of benefits with the average gross wage in Poland in 2021 and then dividing this result by the average wage for the voivodeship in 2021.

Statement of ethics

The study was approved by the Bioethical Committee of the Maria Sklodowska-Curie National Research Institute of Oncology (Approval no. 73/2021).

A simple univariate linear model was built to examine the relationship between spending on work incapacity benefits per person with CD or UC (dependent variable) and the percentage of patients treated with innovative drugs in each voivodeship (independent variable). The lm function from the stats library in the R Programming Language was used to fit the model [12]. The function uses the F-statistic to test whether the independent variable in the linear regression is significantly associated with the independent variable [13].

Results

Population

The total Polish population in 2021 was estimated at 37.91 million people, including 22.38 million of working age. The study group included 25 148 people with CD and 77 073 with UC. In the working-age subgroup, 19 119 people were diagnosed with CD and 49 593 with UC. In addition, 2129 CD patients and 1432 UC patients were treated with innovative therapies under dedicated drug programs.

Annual ZUS expenditures on work incapacity benefits

ZUS expenditures (total and per capita) on all work incapacity benefits for the general population for ICD-10 diagnoses A00–Z99 and for patients with CD and UC between 2012 and 2021 are presented in Table 1. The data indicate a similar constant upward trend in ZUS expenditures in both the general population and the IBD population. A key difference is the decrease in spending in 2021 for people with IBD, which was not seen in the general population. The average annual growth in total expenditures due to incapacity was 4.4% for the general population, 6.7% for those with CDs and 5.2% for those with UC.

Annual ZUS expenditures per person in the general population and the CD and UC populations according to sex, along with estimates per person of working age are shown in Fig. 1a–c. Between 2012 and 2021, annual ZUS expenditures on work incapacity benefits per person in the general population grew steadily, while expenditures per person with CD and UC decreased by PLN 581 and 346, respectively. Declines occurred in every year except 2020. Expenditures per person of working age with CD and UC decreased by PLN 765 and PLN 538, respectively (shown in Fig. 1d–f). Annual ZUS expenditures per person with IBD were higher for men than women by about PLN 200. However, this difference was much smaller in the analysis of expenditures per UC patient of working age; and was not seen in CD patients.

Share of ZUS expenditures in different benefit categories

The share of ZUS work incapacity expenditures in different benefit categories is shown for the general population in Fig. 2a and b, while for people with IBD in Fig. 3a–d. The composition of ZUS expenditures in the general population was dominated by absenteeism, which reflects short-term inability to work in most cases. The second largest category was disability pensions. In 2021, however, there was a lower proportion of disability pensions and a higher proportion of absenteeism compared with the average for the period 2012–2021.

The composition of IBD expenditures, in contrast, was dominated by disability pensions. Absenteeism was the second largest category. For CD, the third largest category was social pensions (15.9% vs. 6.1% for UC in 2021), which means that a significant proportion of CD patients diagnosed at a young age do not start work at all (shown in Fig. 3c). For UC, the third largest expenditure category was rehabilitation benefits. Similar to ZUS expenditures in the general population, data on the IBD population from 2021 indicate a smaller share of expenditures for disability pensions and a higher share for absenteeism compared with the average for the period 2012–2021 (shown in Fig. 3c and d). For CD, absenteeism expenditures in 2021 were already higher than those for disability pensions (shown in Fig. 3c).

Between 2012 and 2021, ZUS spending per person on absenteeism in the general population increased by about PLN 282, while the cost of pensions decreased by about PLN 85 per person (shown in Fig. 4a). Analyzing the annual ZUS spending per person with CD and UC in the same period, we observed decreases of PLN 371 and PLN 284, respectively, in spending on disability pensions between 2012 and 2021 (shown Fig. 4b and c). Decreases occurred in all years except 2020 for CD. In the case of absenteeism, spending per person with CD and UC decreased slightly, by approximately PLN 58 and PLN 35, respectively.

Table 1. ZUS expenditures for work incapacity benefits in the general population and people with IBD between 2012 and 2021

Year	General population (PLN million)	Crohn's disease (PLN million)	Ulcerative colitis (PLN million)	Annual ZUS expenditures per capita in the general population (PLN)	Annual ZUS expenditures per capita in the CD population (PLN)	Annual ZUS expenditures per capita in the UC population (PLN)
2012	30 275.20	18.22	33.80	785.70	1625.28	887.01
2013	32 109.17	19.50	35.42	834.09	1482.92	797.49
2014	32 372.13	19.94	36.33	841.29	1320.44	723.15
2015	33 855.73	21.05	37.94	880.81	1242.36	682.64
2016	35 081.54	22.41	40.43	912.80	1199.48	667.08
2017	36 604.43	25.10	42.77	952.40	1232.61	655.38
2018	36 812.31	27.36	43.84	958.38	1243.30	630.74
2019	38 654.91	27.53	46.42	1007.08	1172.99	633.29
2020	42 509.71	33.21	57.93	1116.06	1358.98	765.43
2021	44 424.67	32.18	51.60	1171.91	1279.73	669.46
Total 2012–2021	362 699.81	246.48	426.49	n/a	n/a	n/a

CD, Crohn's disease; IBD, inflammatory bowel disease; n/a, not applicable; PLN, Polish zloty; UC, Ulcerative Colitis; ZUS, Social Insurance Institution (Poland).

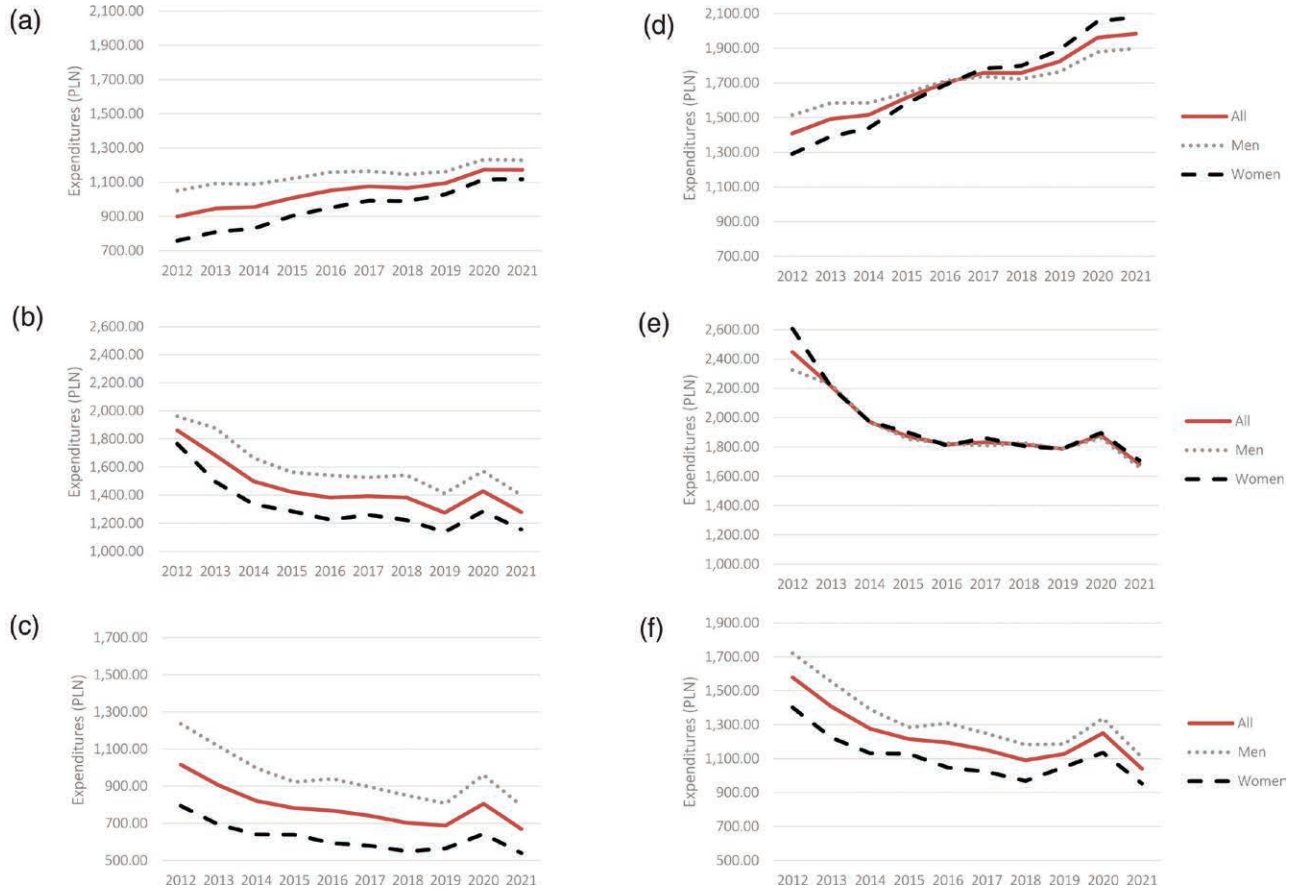

Fig. 1. Annual ZUS expenditures per person on work incapacity benefits in (a) the general population, (b) people with CD and (c) people with UC. Annual ZUS expenditures per person of working age on work incapacity benefits in (d) the general population, (e) people with CD and (f) people with UC. CD, Crohn's disease; UC, ulcerative colitis; ZUS, Social Insurance Institution (Poland).

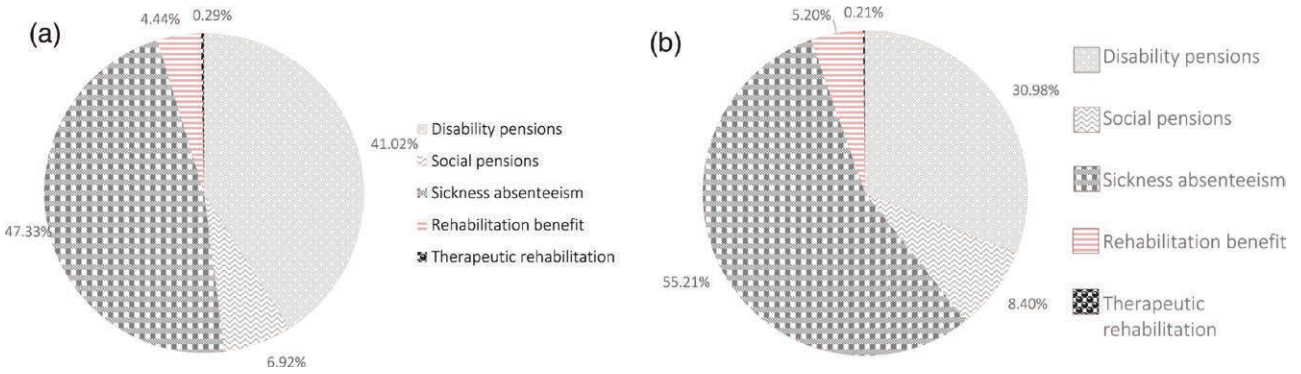

Fig. 2. Share of ZUS work incapacity expenditures in different benefit categories for the general population. (a) Average share in each category between 2012 and 2021. (b) Share in each category in 2021. ZUS, Social Insurance Institution (Poland).

A similar analysis was carried out on annual ZUS spending per person of working age (shown in Fig. 4d–f). In the period under review, the per-person costs incurred by ZUS for pensions in the general population decreased by about PLN 86, while the costs of absenteeism increased by about PLN 524. In the CD and UC populations, we observed a decrease in spending for disability pensions by PLN 489 and 442. Decreases occurred in all years except 2020 when there was a slight increase for both conditions. With regard to absenteeism, spending per person with CD and UC decreased slightly, by approximately PLN 76 and PLN 54, respectively.

The amount of benefits paid per person of working age with CD and UC in 2021 by province is shown in Table 2. The data shows clear differences in the amount of benefits paid for work incapacity between individual provinces.

Relationship between the percentage of patients treated with innovative drugs and ZUS expenditure

Nationwide, on average, the percentage of patients receiving innovative treatment for CD and UC in 2021

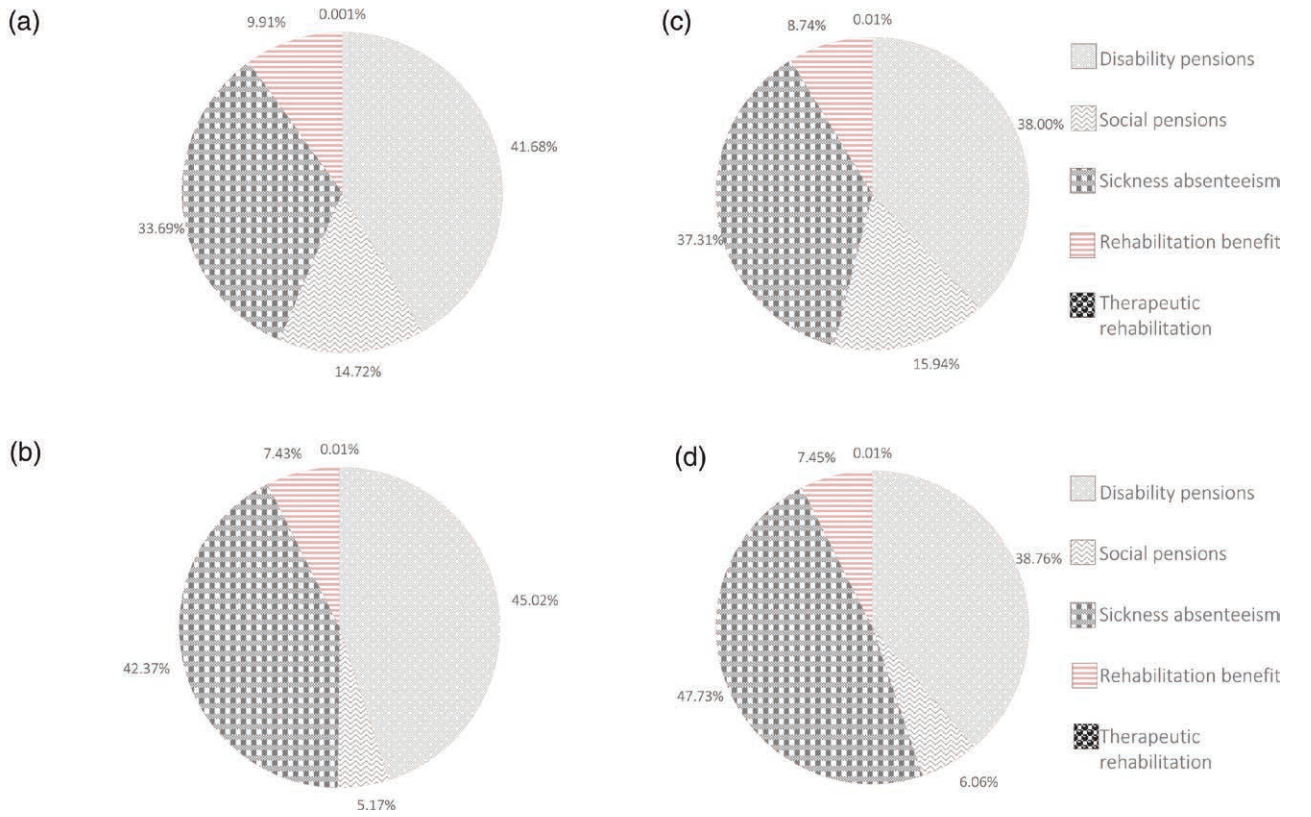

Fig. 3. Share of ZUS work incapacity expenditure in different benefit categories for people with IBD. Average share in each category between 2012 and 2021 for (a) CD and (b) UC. Share in each category in 2021 for (c) CD and (d) UC. CD, Crohn's disease; IBD, inflammatory bowel disease; UC, ulcerative colitis; ZUS, Social Insurance Institution (Poland).

was 8.5% and 1.9%, respectively. Table 3 shows the percentages of patients diagnosed with CD and UC in individual provinces who received innovative treatment in 2021 that was reimbursed by the NFZ under relevant drug programmes. The data show large differences in the utilization of innovative treatment between individual provinces.

There was no correlation between work incapacity expenditures per person with CD or UC and the percentage of patients treated with innovative drugs in each voivodeship ($P = 0.3074$ for CD; $P = 0.3942$ for UC).

In Fig. 5, the vertical stripes indicate provinces in which the percentage of patients diagnosed with CD (shown in Fig. 5a) and UC (shown in Fig. 5b) who received innovative treatment was higher than the weighted average for all provinces, and ZUS expenditures due to work incapacity for these individuals were lower in relation to the weighted average for all provinces. The dots indicate provinces in which the percentage of patients treated under drug programmes was lower than the weighted average for all provinces and at the same time higher ZUS expenditures for benefits were incurred relative to the weighted average for all provinces. In the case of CD, an inverse relationship was found between use of innovative treatment and the level of ZUS expenditure per patient in nine of 16 provinces (representing approximately 63% of the country's population). In the case of the UC, this relationship was found in five provinces (representing approximately 35% of the country's population).

Discussion

This is the first study to date to document an inverse association between spending for work incapacity by the Polish state and accessibility to innovative treatment of IBD. This analysis was possible because access to innovative drugs in Poland is limited by a centralized treatment program available to a limited number of gastrointestinal centres that are distributed unequally in different regions of the country.

Public expenditures associated with lost productivity are poorly understood, and the available studies have mainly examined the costs of absence from work, including absenteeism and presenteeism. Canadian authors calculated that among the approximately 30% of the IBD population with the highest burden of disease, the indirect costs of absenteeism and presenteeism account for approximately 75% of the total IBD-related costs [14]. Work disability affects up to a quarter of IBD patients, but until recently there have been no studies assessing time trends in the disability certificates or the effect of new therapies in this context [15–17].

In this nationwide analysis for 2012–2021, we have shown that while expenditures incurred due to work incapacity per insured person in Poland's ZUS increased, those incurred by people with CD or UC decreased. We assessed spending on benefits overall, per person and benefit category. We showed that in the general population, disability pension expenditures decreased slightly while expenditures due to absenteeism clearly increased. At the

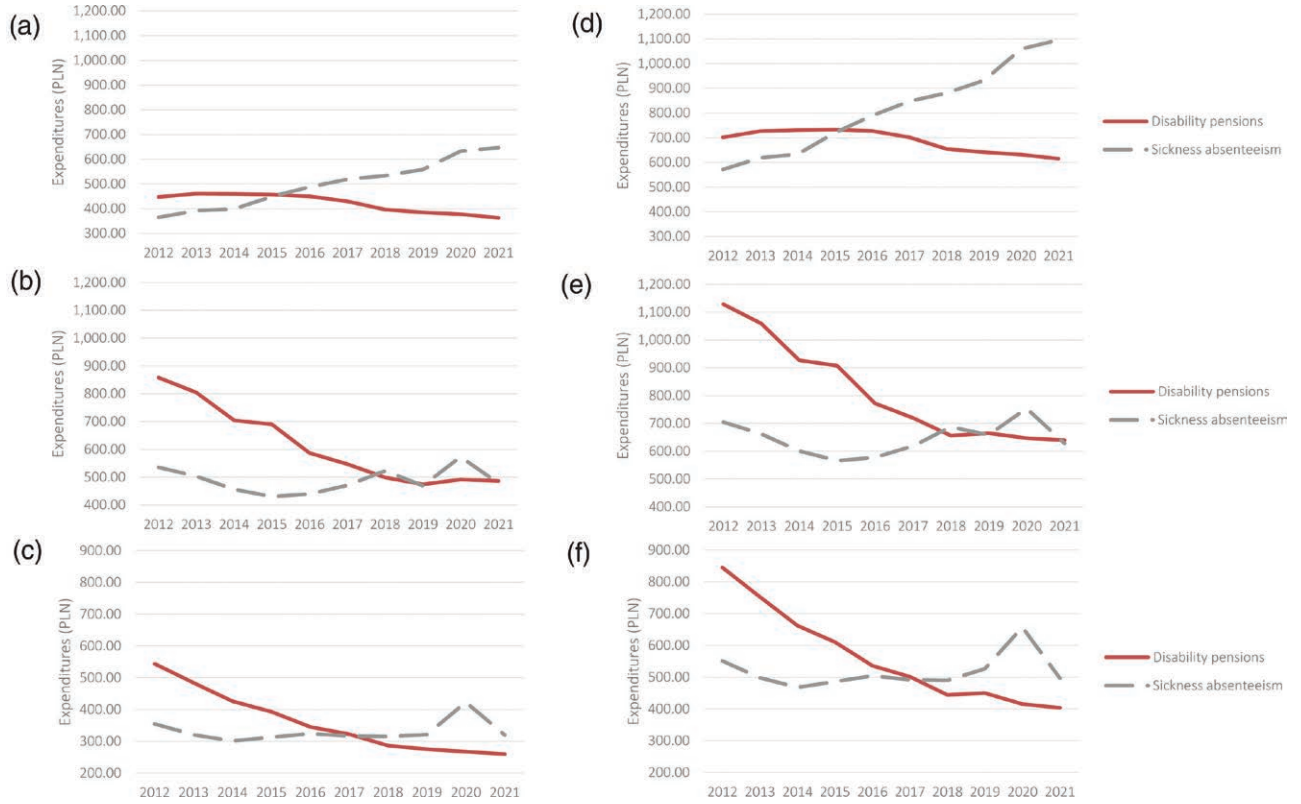

Fig. 4. Annual ZUS expenditures on absenteeism and disability pensions per person in (a) the general population, (b) people with CD and (c) people with UC. Annual ZUS expenditures on absenteeism and disability pensions per person of working age in (d) the general population, (e) people with CD and (f) people with UC. CD, Crohn's disease; UC, ulcerative colitis; ZUS, Social Insurance Institution (Poland).

Table 2. Benefits paid by ZUS in individual voivodeships in 2021 per person of working age with IBD

Voivodeship	Crohn's disease (PLN per person)	Ulcerative colitis (PLN per person)
Dolnośląskie	1856	974
Kujawsko-Pomorskie	2094	942
Lubelskie	1920	943
Lubuskie	2429	1016
Łódzkie	1939	923
Małopolskie	1617	857
Mazowieckie	1411	774
Opolskie	1344	623
Podkarpackie	1686	1070
Podlaskie	1407	449
Pomorskie	1085	746
Śląskie	1859	917
Świętokrzyskie	1893	952
Warmińsko-Mazurskie	1593	720
Wielkopolskie	2142	1380
Zachodniopomorskie	1684	849
Weighted average	1790	951

IBD, inflammatory bowel disease; ZUS, Social Insurance Institution (Poland).

same time, expenditures for disability pensions per person with IBD decreased more than pension expenditures in the general population, and expenditures for absenteeism decreased.

The reduction in social spending on pensions for work incapacity in the general population in Poland is partly due to the decreasing number of pensions granted in recent years [18,19]. However, in our analysis, the decrease in pension expenditures was much more pronounced in the IBD population, which may indicate a greater reduction in the number of beneficiaries in this group or a reduction in the value of benefits. Higher benefits are given to people who are completely unable to work and are lower for people with partial incapacity. One of the reasons for the reduction in IBD disability pension expenditure may therefore be the decrease in the number of people unable to work. However, our data did not distinguish between pensions for partial and total work disability. Recently, Swedish authors estimated societal costs, including sick leave and disability pensions, on a national level in patients with CD and UC and found that between 2007 and 2020 the patients' compensation for sickness absence decreased, too, but to a lesser degree than in non-IBD comparators [20]. The authors stated that this was following national regulatory changes in the compensation. In our study, the social spending reduction was limited to the IBD patients, suggesting the contribution of the disease management.

Treatment of patients with IBD is a complex process [21–24]. Coordinated care models that incorporate a multi-disciplinary approach with structured clinical pathways or processes for the diagnosis, monitoring and treatment of IBD, fast-track recovery from IBD surgery and designated IBD clinics are currently considered to be the standard of care [25]. The quality of care indicators have been divided into three categories related to structure, process and outcomes, respectively. All categories include patient-derived indicators, with perception of the patient's own general or specific health among them [26,27]. The ability for work or work productivity also falls into this category.

In Poland, innovative treatment of IBD is administered in only a limited number of competent gastroenterology centres. Indirect proof of the centre's competence in the treatment of IBD is the contract with the NFZ for innovative treatment under relevant drug programmes. A healthcare provider who applies for such a contract must employ at least two gastroenterologists, have an endoscopic suit, access to computed tomography and MRI and a surgical department. The number of centres that implement drug programmes has been steadily growing since the programmes were introduced. In 2022, the number of centres managing CD and UC was 64 and 62, respectively. We speculated that the decrease in work incapacity benefit spending on people with IBD may be partly due to the gradual improvement in the quality of healthcare for these patients across Poland.

Because our analysis of work incapacity benefit spending per person showed large (more than twofold) differences between provinces, we assumed that these differences may reflect interregional differences in the quality of care for patients with IBD. The number of centres specializing in the treatment of IBD in individual provinces is highly diverse and ranges from one to eight. The central Mazowieckie province offers the largest number of centres and the easiest access to innovative treatment and has the highest percentage of patients diagnosed with IBD receiving these drugs in the country. While the average nationwide percentage of patients with CD receiving innovative treatment was 8.5% in 2022, in the Mazowieckie province 17.4% of patients received these treatments. These percentages were much lower for UC at 1.9% and 4.1%, respectively. All these numbers are relatively low when compared with recent data from other developed countries [20,28,29]. In addition to the limited access to specialist care, they reflect strict national criteria for obtaining reimbursement for innovative IBD drugs, which are different from those included in summaries of product characteristics [30,31].

We have shown that in nine out of 16 provinces, inhabited by two-thirds of the Polish population, there is an inverse relationship between the percentage of patients treated with innovative drugs and the level of ZUS spending per person diagnosed with CD. In the case of UC, we showed such a relationship in five provinces. It, therefore, appears that treatment in specialized centres and perhaps access to innovative treatments may diminish the adverse effects of CD on work capacity, which would be an important outcome for disease management. In the case of UC, this effect was minor, which may be because reimbursement of innovative drugs for UC in Poland is recent and a very small percentage of patients are treated in drug programmes.

One of the limitations of our study is that it did not cover the 6.6% of the general population insured through KRUS. This institution collects less detailed data about the benefits paid and therefore we could not use it in our

Table 3. Proportion of patients with IBD treated with innovative drugs (including biologics) and reimbursed by NFZ in individual voivodships in 2021

Voivodship	Crohn's disease	Ulcerative colitis
Dolnośląskie	5.7%	1.3%
Kujawsko-Pomorskie	11.4%	1.4%
Lubelskie	7.8%	1.7%
Lubuskie	0.9%	0.2%
Łódzkie	8.1%	2.2%
Małopolskie	6.3%	0.8%
Mazowieckie	17.4%	4.1%
Opolskie	4.7%	0.5%
Podkarpackie	10.2%	2.2%
Podlaskie	7.8%	1.5%
Pomorskie	8.7%	2.2%
Śląskie	5.0%	1.1%
Świętokrzyskie	5.2%	2.6%
Warmińsko-Mazurskie	4.0%	0.4%
Wielkopolskie	9.8%	2.6%
Zachodniopomorskie	4.5%	1.7%
Weighted average	8.5%	1.9%

IBD, inflammatory bowel disease; NFZ, National Health Fund (Poland).

Fig. 5. ZUS expenditures and usage of innovative treatment relative to the average values of these variables within the province for (a) CD and (b) UC. CD, Crohn's disease; UC, ulcerative colitis; ZUS, Social Insurance Institution (Poland).

analysis. Secondly, we did not have information on the number of patients treated with innovative drugs in clinical trials, because such data are not publicly available. Finally, in accordance with applicable law, we did not have access to the amount of benefits paid by ZUS to individuals. Thus, we could not investigate whether there was a correlation between the benefit categories, the amount of work incapacity benefit paid and the type of treatment used in individual patients.

Conclusion

Using data obtained from the ZUS in Poland, we have shown that during a period when the work incapacity benefit expenditure incurred per person in the general population has increased, the average spending on benefits paid to a patient with IBD decreased. This reduction was mainly due to a decrease in disability pension expenditure. Importantly, we have documented an inverse relationship between the percentage of patients treated with innovative drugs and the ZUS expenditures per person diagnosed with CD in nine of 16 Polish provinces. We believe that improvements in the quality of healthcare in the IBD population, including the usage of biologic treatment, may have contributed to the positive trends reported here. This suggests that as more innovative treatment is used, the health status of patients improves and, from an economic standpoint, social benefit spending is reduced especially for disability pensions. Similar analyses of the dynamics of IBD social benefits spending in other countries are warranted to confirm our observations.

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EZ, GB, CP, PK and JR designed the study and acquired data. GB and DS performed the statistical analyses. EZ, GB and DS drafted the manuscript. All authors revised the article critically for important intellectual content and approved the version to be submitted.

Data available on request. The data underlying this article will be shared on reasonable request to the corresponding author.

Conflicts of interest

EZ: Honoraria for lectures, presentations from Janssen-Cilag Polska, AbbVie Polska, Takeda Pharma, BMS. Advisory Boards: AbbVie Polska, Eli Lilly Polska. Travel grants: Janssen-Cilag Polska, Eli Lilly Polska. GB: Honoraria for lectures, presentations from Janssen-Cilag Polska and AbbVie Polska Advisory Boards: AbbVie Polska. DS: Honoraria for lectures, presentations from Janssen-Cilag Polska and AbbVie Polska Advisory Boards: AbbVie Polska. PK: Honoraria for lectures, presentations from Pfizer Polska. Travel grants: Takeda Polska. CP: Honoraria for lectures, presentations from Janssen-Cilag Polska and AbbVie Polska Advisory Boards: AbbVie Polska. JR: Honoraria for lectures, presentations Takeda Pharma, Jansse-Cilag Polska, BMS. Advisory Boards: Takeda Pharma, BMS. Travel grants: BMS, Janssen-Cilag Polska, Takeda Pharma.

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