In a recent analysis of population studies, the highest annual incidence of UC were 24.3 per 100,000 person-years in Europe, 6.3 per 100,000 person-years in Asia and the Middle East, and 19.2 per 100,000 person-years in North America. The highest annual incidence of CD was 12.7 per 100,000 person-years in Europe, 5.0 per 100,000 person-years in Asia and the Middle East, and 20.2 per 100,000 person-years in North America. The highest reported prevalence values for IBD were in Europe (UC: 505 per 100,000 persons in Norway; CD: 322 per 100,000 persons in Italy) and North America (UC: 249 per 100,000 persons; CD: 319 per 100,000 persons; both in Canada). In time-trend analyses, 75% of studies on CD and 60% of studies on UC exhibited an increasing incidence of statistical significance. Accordingly, rising hospitalization rates have been reported in many United States and
Rising hospitalization rates for inflammatory bowel disease in Poland

181

who were seen in 24 pediatric gastroenterology centers servicing the whole population of Poland in the years from 2002 to 2004. The overall annual IBD incidence in this study was 2.7 per 100,000 children.

In the absence of long‑term prospective data on IBD incidence in Poland, one cannot attempt to determine any epidemiological time trends. Furthermore, we are unaware of any ongoing or planned national studies on this subject. Considering all of the above, we decided to make use of the existing data to define the rates of hospitalization for CD and UC in Poland and to identify time trends during the last 2 decades.

Patients and methods

The study included data extracted from the National Institute of Public Health (NIPH). Its database covers the epidemiological data on the population of Poland. The database is based on reports from all health care institutions, which are obliged by legal regulations to send them. Before 2001, the NIPH collected data on 1 of 6 hospitalizations. The data included diagnoses but did not allow for the identification of patients. Since 2001, data concerning all hospitalizations in Poland have been collected, who were seen in 24 pediatric gastroenterology centers servicing the whole population of Poland in the years from 2002 to 2004. The overall annual IBD incidence in this study was 2.7 per 100,000 children.

The epidemiology of IBD in Eastern Europe has not been extensively studied. Most reports present retrospective studies and hospital registries. In 1 prospective study from Croatia performed between 1980 and 1989, the annual incidence of UC was 1.5 per 100,000 persons and that of CD was 0.7 per 100,000 persons, with the prevalence of 21.4 and 8.3 per 100,000 persons, respectively.12 A population study from Hungary that compared the incidence of IBD in the years from 1977 to 1981 and from 1997 to 2001 reported a significant increase both for UC (from 1.7 to 11.0 per 100,000 individuals) and CD (from 0.4 to 4.7 per 100,000 individuals).13 The prevalence of UC and CD in Hungary in 2001 was 142.6 and 52.9 per 100,000 persons, respectively, a few-fold less than in the regions of the highest prevalence.13 In a more recent Hungarian population study, the incidence rate of IBD was close to that observed in Western countries.14

The only Polish prospective study on IBD epidemiology was performed on a pediatric population. The authors registered all new IBD outpatients who were seen in 24 pediatric gastroenterology centers servicing the whole population of Poland in the years from 2002 to 2004. The overall annual IBD incidence in this study was 2.7 per 100,000 children.11 In the absence of long-term prospective data on IBD incidence in Poland, one cannot attempt to determine any epidemiological time trends. Furthermore, we are unaware of any ongoing or planned national studies on this subject. Considering all of the above, we decided to make use of the existing data to define the rates of hospitalization for CD and UC in Poland and to identify time trends during the last 2 decades.

Patients and methods

The study included data extracted from the National Institute of Public Health (NIPH). Its database covers the epidemiological data on the population of Poland. The database is based on reports from all health care institutions, which are obliged by legal regulations to send them. Before 2001, the NIPH collected data on 1 of 6 hospitalizations. The data included diagnoses but did not allow for the identification of patients. Since 2001, data concerning all hospitalizations in Poland have been collected, who were seen in 24 pediatric gastroenterology centers servicing the whole population of Poland in the years from 2002 to 2004. The overall annual IBD incidence in this study was 2.7 per 100,000 children.11 In the absence of long-term prospective data on IBD incidence in Poland, one cannot attempt to determine any epidemiological time trends. Furthermore, we are unaware of any ongoing or planned national studies on this subject. Considering all of the above, we decided to make use of the existing data to define the rates of hospitalization for CD and UC in Poland and to identify time trends during the last 2 decades.

Patients and methods

The study included data extracted from the National Institute of Public Health (NIPH). Its database covers the epidemiological data on the population of Poland. The database is based on reports from all health care institutions, which are obliged by legal regulations to send them. Before 2001, the NIPH collected data on 1 of 6 hospitalizations. The data included diagnoses but did not allow for the identification of patients. Since 2001, data concerning all hospitalizations in Poland have been collected, who were seen in 24 pediatric gastroenterology centers servicing the whole population of Poland in the years from 2002 to 2004. The overall annual IBD incidence in this study was 2.7 per 100,000 children.11 In the absence of long-term prospective data on IBD incidence in Poland, one cannot attempt to determine any epidemiological time trends. Furthermore, we are unaware of any ongoing or planned national studies on this subject. Considering all of the above, we decided to make use of the existing data to define the rates of hospitalization for CD and UC in Poland and to identify time trends during the last 2 decades.

Patients and methods

The study included data extracted from the National Institute of Public Health (NIPH). Its database covers the epidemiological data on the population of Poland. The database is based on reports from all health care institutions, which are obliged by legal regulations to send them. Before 2001, the NIPH collected data on 1 of 6 hospitalizations. The data included diagnoses but did not allow for the identification of patients. Since 2001, data concerning all hospitalizations in Poland have been collected,
1991–1996 and 2003–2007. Owing to a reorganization of the health care system in Poland and the transition from the old system of collecting data on hospitalizations to the new one, data from 1996 to 2002 were incomplete and were excluded from the analysis.

The study used data on the population of Poland and hospitalization rates during the years

| CD and UC | Men | Women |
|----------|-----|-------|
|          | B^a | SE^b | P value | B^a | SE^b | P value |
| 1991–1996 |     |      |        |     |      |        |
| age groups, y |   |      |        |   |      |        |
| 0–16   | 0.10 | 0.01 | 0.0000 | 0.12 | 0.01 | 0.0000 |
| 17–29  | 0.03 | 0.01 | 0.03   | 0.01 | 0.01 | 0.7     |
| 30–39  | 0.06 | 0.01 | 0.0000 | –0.01 | 0.01 | 0.53    |
| 40–64  | –0.02 | 0.01 | 0.01   | 0.05 | 0.01 | 0.0000 |
| ≥65    | 0.08 | 0.01 | 0.0000 | 0.07 | 0.01 | 0.0000 |

| 2003–2007 |     |      |        |     |      |        |
| age groups, y |   |      |        |   |      |        |
| 0–16   | 0.30 | 0.01 | 0.0000 | 0.26 | 0.01 | 0.0000 |
| 17–29  | 0.14 | 0.01 | 0.0000 | 0.13 | 0.01 | 0.0000 |
| 30–39  | 0.09 | 0.01 | 0.0000 | 0.08 | 0.01 | 0.0000 |
| 40–64  | 0.03 | 0.01 | 0.0003 | 0.03 | 0.01 | 0.0000 |
| ≥65    | 0.03 | 0.01 | 0.007  | 0.03 | 0.01 | 0.002  |

Abbreviations: see TABLE 1

including the demography of patients, diagnoses at discharge according to the International Classification of Diseases, medical procedure codes, and concomitant diseases.

The study used data on the population of Poland and hospitalization rates during the years 1991–1996 and 2003–2007. Owing to a reorganization of the health care system in Poland and the transition from the old system of collecting data on hospitalizations to the new one, data from 1996 to 2002 were incomplete and were excluded from the analysis.
We identified all hospital discharges with a primary diagnosis of IBD (coded as 555.xx for CD and 556.xx for UC) reported between 1991 and 1996. The International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) diagnostic codes were used to identify the diagnoses. As already mentioned, during this period, only 1 of every 6 discharges was registered; therefore, we multiplied the number of reported hospitalizations for UC and CD by the factor of 6. We also identified all hospital discharges with a primary diagnosis of IBD and coded as K50 (for CD) and K51 (for UC) reported between 2003 and 2007. The International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM) diagnostic codes were used to identify diagnoses from this period.

### Statistical methods
Hospitalization rates per 100,000 individuals were calculated for the total population and separately for age and sex subgroups by dividing the number of hospitalizations by the size of the population. Differences between men and women and linear trends for the year of hospitalization were assessed for the years from 1991 to 1996 and from 2003 to 2007 using Poisson regression with sex or year as a covariate. The Stata 12 software was used (StataCorp, 2011, Stata: Release 12, Statistical Software, College Station, TX: StataCorp LP). A $P$ value of less than 0.05 was considered statistically significant.

### RESULTS

#### General findings
The total number of hospitalizations with a primary diagnosis of CD or UC at discharge and the rates of hospitalization because of CD or UC per 100,000 individuals from 1991 to 1996 and from 2003 to 2007 are presented in Table 1. Each consecutive year, the rates of hospitalizations for IBD were higher than during the previous year, increasing from 4780 in 1991 to 11,667 in 2007 (a 2.4-fold increase). Each
The hospitalization rates for CD during the analyzed periods ranged from 3.17 to 9.45 per 100,000 for men compared with 3.88 to 9.25 per 100,000 for women (Table 5). In 3 of 11 years, women were considerably more likely to be hospitalized for CD than men; no difference was observed in the remaining years.

Age-specific rates of hospitalization for CD in men and women are presented in Table 6. Rising time trends were observed in men in age groups: 0–16, 17–29, and 30–39 years of age. Between the years 1991–1996 and 2003–2007, hospitalization rates for either CD or UC in men and women according to age are presented in Table 2. The results of the Poisson regression analysis and coefficients of trends in hospitalization rates are presented in Table 3. Rising time trends were observed in both sexes (Figures 1A and 2A). The steepest curves were observed in the youngest age groups (0–16 and 17–29 years of age). In most years, the hospitalization rate for IBD was significantly higher for men than for women (Table 4).
Rising hospitalization rates for inflammatory bowel disease in Poland

Age

Specific rates of hospitalization for UC in men and women are presented in Table 8. Rising time trends were observed during the years from 2003 to 2007 in both sexes in all age groups except in those aged from 40 to 64 years (Table 3). Similarly to CD, the highest increase in hospitalization rates was observed in those aged from 17 to 29 years. As a general rule, the older the subgroup was, the higher the hospitalization rate was observed. The highest hospitalization rates were observed in the elderly population.

Figure 1c presents the trends in hospitalization rates for UC from 1991 to 1996 and from 2003 to 2007 in men.

Figure 2c presents the trends in hospitalization rates for UC from 1991 to 1996 and from 2003 to 2007 in women.

Length of hospital stay

The length of hospital stay was reported in the years from 2003 to 2007. Both for CD and UC, the mean length of stay was progressively shorter each year: during each consecutive year, the mean length of stay was 10.2, 9.7, 8.8, 8.2, and 7.9 days, respectively, for

### Table 6: Age-specific hospitalization rates for Crohn's disease in men and women in Poland, 1991–1996 and 2003–2007

| Year | Men (age, y) | Women (age, y) | Women/men ratio | 95% CI | P value |
|------|--------------|----------------|-----------------|-------|--------|
|      | 0–16 | 17–29 | 30–39 | 40–64 | ≥65 | 0–16 | 17–29 | 30–39 | 40–64 | ≥65 | 0–16 | 17–29 | 30–39 | 40–64 |
| 1991 | 5.34 | 2.34 | 0.96 | 0.90–1.02 | >0.1 |
| 1992 | 4.85 | 2.85 | 0.96 | 0.90–1.02 | >0.1 |
| 1993 | 4.36 | 2.36 | 0.96 | 0.90–1.02 | >0.1 |
| 1994 | 3.87 | 2.87 | 0.96 | 0.90–1.02 | >0.1 |
| 1995 | 3.38 | 2.38 | 0.96 | 0.90–1.02 | >0.1 |

### Table 7: Hospitalization rates for ulcerative colitis in men and women in Poland, 1991–1996 and 2003–2007

| Year | Men | Women | Women/men ratio | 95% CI | P value |
|------|-----|-------|-----------------|-------|--------|
| 1991 | 18,633.5 | 1710 | 9.18 | 19,611.0 | 1720 | 8.77 | 0.96 | 0.89–1.02 | >0.1 |
| 1992 | 18,685.9 | 2070 | 11.08 | 19,678.9 | 1980 | 10.06 | 0.91 | 0.85–0.97 | <0.002 |
| 1993 | 18,726.1 | 1890 | 10.09 | 19,733.0 | 2090 | 10.59 | 1.05 | 0.99–1.12 | >0.1 |
| 1994 | 18,763.1 | 1860 | 9.91 | 19,780.4 | 2270 | 11.48 | 1.16 | 1.09–1.23 | <0.0001 |
| 1995 | 18,779.3 | 1830 | 9.74 | 19,808.3 | 2340 | 11.81 | 1.12 | 1.14–1.29 | <0.0001 |
| 1996 | 18,789.2 | 2180 | 11.60 | 19,828.8 | 2210 | 11.15 | 0.96 | 0.91–1.02 | >0.1 |
| 2003 | 18,493.0 | 3280 | 17.74 | 19,702.2 | 3007 | 15.26 | 0.86 | 0.82–0.90 | <0.0001 |
| 2004 | 18,478.4 | 3699 | 20.02 | 19,701.9 | 3484 | 17.68 | 0.88 | 0.84–0.93 | <0.0001 |
| 2005 | 18,460.7 | 4214 | 22.83 | 19,700.6 | 3925 | 19.92 | 0.87 | 0.84–0.91 | <0.0001 |
| 2006 | 18,436.1 | 4186 | 22.71 | 19,696.2 | 3806 | 19.32 | 0.85 | 0.81–0.89 | <0.0001 |
| 2007 | 18,417.1 | 4290 | 23.29 | 19,689.8 | 3815 | 19.37 | 0.83 | 0.80–0.87 | <0.0001 |

Abbreviations: see Tables 1 and 5

1991 and 1996, decreasing time trends were observed in the age group of 17 to 29 years in women and 60 to 64 years in men (Table 3). The greatest increase in the hospitalization rate was observed in those aged from 17 to 29 years.

During the first analyzed period (1991–1996), the older the subgroup was, the higher the observed hospitalization rate. During the latter period (2003–2007), the hospitalization rate for CD peaked in the third decade of life in men and in the fourth decade of life in women.

Figure 1b presents trends in hospitalization rates for CD from 1991 to 1996 and from 2003 to 2007 in men.

Figure 2b presents trends in hospitalization rates for CD from 1991 to 1996 and from 2003 to 2007 in women.

Hospitalization rates for ulcerative colitis

Sex

Men were considerably more likely to be hospitalized with UC than women (Table 7). The hospitalization rate during the analyzed period ranged from 9.18 to 23.29 per 100,000 for men and from 8.97 to 19.37 per 100,000 for women.

Age

Age-specific rates of hospitalization for UC in men and women are presented in Table 8. Rising time trends were observed during the years from 2003 to 2007 in both sexes in all age groups except in those aged from 40 to 64 years (Table 3). Similarly to CD, the highest increase in hospitalization rates was observed in those aged from 17 to 29 years. As a general rule, the older the subgroup was, the higher the hospitalization rate was observed. The highest hospitalization rates were observed in the elderly population.

Figure 1c presents the trends in hospitalization rates for UC from 1991 to 1996 and from 2003 to 2007 in men. Figure 2c presents the trends in hospitalization rates for UC from 1991 to 1996 and from 2003 to 2007 in women.

Length of hospital stay

The length of hospital stay was reported in the years from 2003 to 2007. Both for CD and UC, the mean length of stay was progressively shorter each year: during each consecutive year, the mean length of stay was 10.2, 9.7, 8.8, 8.2, and 7.9 days, respectively, for
100,000 population, and that for UC increased from 8.97 to 21.26 per 100,000 population. It is possible that this increase reflects the growing awareness of the disease and its pathophysiology as well as improved diagnostic skills and tools, including wider access to colonoscopy and, more recently, implementation of capsule endoscopy and enterography using computed tomography or magnetic resonance.

Another (and likely more important) reason for the observed rise in IBD hospitalization rates is CD, and 8.5, 7.0, 6.7, 6.8, and 6.5 days, respectively, for UC.

**DISCUSSION** Using nationwide hospital discharge data, we showed that the rate of hospitalization for IBD in Poland rose significantly between 1991 and 2007 in all age groups. Our study indicates that the rate of hospitalization for IBD increased approximately 2.4-fold within less than 2 decades. The overall hospitalization rate for CD in Poland increased from 3.53 to 9.35 per 100,000 population, and that for UC increased from 8.97 to 21.26 per 100,000 population.

It is possible that this increase reflects the growing awareness of the disease and its pathophysiology as well as improved diagnostic skills and tools, including wider access to colonoscopy and, more recently, implementation of capsule endoscopy and enterography using computed tomography or magnetic resonance.

Another (and likely more important) reason for the observed rise in IBD hospitalization rates is...
| Year | Men (age, y) | Women (age, y) |
|------|-------------|----------------|
|      | 0–16 | 17–29 | 30–39 | 40–64 | ≥65 | 0–16 | 17–29 | 30–39 | 40–64 | ≥65 |
| 1991 | 2.74 | 6.63 | 10.78 | 14.88 | 16.39 | 2.67 | 5.41 | 11.89 | 13.89 | 11.01 |
| 1992 | 4.42 | 7.72 | 11.60 | 16.55 | 23.47 | 1.93 | 5.36 | 14.65 | 15.46 | 15.60 |
| 1993 | 4.29 | 8.75 | 10.24 | 15.07 | 16.39 | 2.54 | 7.06 | 11.07 | 19.12 | 12.16 |
| 1994 | 3.41 | 4.17 | 9.18 | 18.41 | 17.88 | 2.38 | 5.79 | 13.67 | 19.51 | 16.52 |
| 1995 | 4.64 | 5.46 | 11.13 | 14.72 | 16.76 | 4.66 | 8.25 | 13.39 | 19.03 | 12.40 |
| 1996 | 4.35 | 7.76 | 12.19 | 15.00 | 30.22 | 5.80 | 5.29 | 12.07 | 17.18 | 14.35 |
| 2003 | 5.73 | 13.63 | 16.84 | 25.33 | 29.91 | 5.71 | 11.72 | 14.31 | 20.16 | 22.54 |
| 2004 | 5.05 | 16.02 | 21.91 | 27.41 | 33.92 | 6.19 | 13.96 | 18.33 | 23.43 | 23.99 |
| 2005 | 7.62 | 18.33 | 25.61 | 29.70 | 37.46 | 6.84 | 17.33 | 22.58 | 24.99 | 25.81 |
| 2006 | 12.80 | 19.81 | 22.27 | 26.80 | 35.65 | 10.71 | 17.78 | 18.25 | 22.82 | 24.57 |
| 2007 | 12.45 | 21.37 | 22.77 | 27.30 | 35.68 | 10.34 | 17.81 | 19.59 | 22.18 | 25.07 |

The increasing prevalence of IBD in Poland. As mentioned above, there have been no prospective population studies on the incidence of IBD in Poland. We believe that many of the reported hospitalizations may have been incident cases. Because of limited access to specialist care in Poland, many symptomatic (but not severely ill) patients are referred to hospitals for diagnostic purposes. This approach appears to be a faster and easier way to get proper care than obtaining a referral to a specialist outpatient clinic. Moreover, in the pediatric population, colonoscopy (which is essential for IBD diagnosis) is almost always performed under sedation, which is available only in the hospital setting. In the present study, there was a peak rise in hospitalizations for IBD in the age group of 17 to 29 years. This data is consistent with the age of the peak incidence of IBD. In a recent meta-analysis, most CD and UC studies exhibited the highest incidence in the second to fourth decade, with 78.0% of CD studies and 51.1% of UC studies reporting the highest incidence among 20- to 29-year-olds. Therefore, it seems justified to assume that the growing hospitalization rates in Poland correlate with rising prevalence and incidence of IBD.

The most recent hospitalization rate for UC in our study was 21.60 per 100,000 individuals. In other European countries, the hospitalization rate for UC varies greatly, ranging from 8.4 per 100,000 in Switzerland to 46.8 per 100,000 in Scotland. In North America, the rates are lower compared with those reported in our study and in most European countries (10.8 per 100,000 in the United States and 13.3 per 100,000 in Canada). Relatively high rates in Poland might have several explanations. Some primary differences among countries regarding the mode of utilization of health care resources may have contributed to these results. It is possible that admissions with less severe disease (i.e., a lower threshold for hospital admissions) occur more often in Poland. Alternatively, as mentioned above, because of limited access to outpatient specialist care, patients in Poland are more often admitted to the hospital for a diagnostic purpose and not because of severe deterioration. Finally, the reason might be the recent rapid growth of UC incidence in Poland, which occurred a few decades later in Eastern Europe than in Western countries.

In the present study, hospitalization rates were a few times lower for CD than for UC. This finding is in contrast to the results from the majority of the European countries, Canada, and the United States, and most likely reflects a much lower prevalence of CD in Poland. However, during the study period, the hospitalization rates increased more rapidly for CD than for UC, suggesting that the prevalence of CD is currently growing faster, in agreement with the results of population studies from North America and Europe. It is believed that in a defined region, the rise in CD incidence occurs approximately a decade later than the rise in UC incidence, and now CD is outstripping UC regarding incidence and prevalence in countries such as Canada, France, and Belgium. A steeper increase in hospitalizations that we observed for CD compared with UC in the younger age groups may reflect current burst in the incidence of CD that has been observed elsewhere.

We observed that men were considerably more likely to be hospitalized for UC than women. As for CD, we observed a predominance of women in 3 of 11 analyzed years, and no sex differences in the remaining years. In a recent systematic review, the female-to-male incidence ratio varied from 0.51 to 1.58 for UC studies and 0.34 to 1.65 for CD studies, suggesting that the diagnosis of IBD was not sex-specific. However, in high-incidence areas, it might be that UC occurs more often in men and CD occurs more often in women. A recent study of hospitalization rates in 9 European countries reported that women were more often hospitalized for CD than men in 7 of those countries, while there was a slight male predominance regarding UC in 6 countries. The highest CD hospitalization rate per 100,000 individuals was observed in the age group of 17 to 29 years followed by that of 30 to
39 years. This finding is consistent with published results. However, we did not observe a peak in the rate of hospital readmissions in the older population, although this peak has occurred in Western European countries and is partly related to the aging of the general population. It is possible that there are not enough older patients with CD in Poland to establish this rise, or that the late peak in CD incidence does not occur in Poland. Another reason for this difference might be that CD presenting in older age most often affects the colon, which might cause diagnostic difficulties and incorrect classification of the disorder as UC.

In contrast, the peak hospitalization rates for UC were observed in the elderly, in agreement with the results from other countries. One reason for this finding may be the second late peak of UC incidence. In addition, older patients with exacerbation of UC might be referred to hospitals more often than younger patients owing to comitant diseases. It is also possible that some individuals with ischemic, iatrogenic, nonsteroidal anti-inflammatory drug-induced, or Clostridium difficile-induced colitis, which are conditions that primarily affect the elderly, were incorrectly coded as having UC.

One limitation of our analysis is the lack of data on readmissions. If readmission rates remained steady throughout the study period, one might more confidently assume that the observed increase in IBD hospitalization rates is related to a rising incidence and/or prevalence rather than to the administrative reorganization of health care. On the other hand, the rising readmission rate might suggest a more serious course of the disease in the population, but this has not been observed elsewhere. Another reason for the rising hospitalization rates might be the contribution of one-day hospitalizations, such as those related to biological treatment. We had no data on one-day hospitalization rates, and we were unable to extract those rates from the total hospitalization rates. Notably, biologicals have not yet been registered for UC treatment in the period covered by our analysis. Regarding CD, because of the lack of clear reimbursement rules in Poland at the beginning of the millennium, infliximab was in common use only in tertiary centers. We believe that it is unlikely that readmissions for biological therapy have significantly affected the hospitalization rates.

In conclusion, using NIPH data, we calculated that hospitalization rates for IBD in Poland increased overall during the years from 1991 to 2007, with rising time trends observed in both sexes. The hospitalization rate for UC was significantly higher among men than among women. We believe that these data reflect the growing incidence of IBD in Poland; however, a population study is warranted to confirm this hypothesis. The awareness of the growing burden of IBD should be fostered both in society and throughout the national health care system authorities in Poland.

Acknowledgments and funding Aspects of this study are part of the MD thesis of A.J. This study was supported by the Medical Centre for Postgraduate Education, Warsaw, Poland (grant number, 502-1-09-26-09; granted to W.B.) and by the Polish Foundation for Gastroenterology. The sponsors had no role in the study design, collection, analysis, and interpretation of the data, or in the writing of the manuscript.

REFERENCES
1 Xavier RJ, Podolsky DK. Unraveling the pathogenesis of inflammatory bowel disease. Nature. 2007; 448: 427-434.
2 Cho JH. The genetics and immunopathogenesis of inflammatory bowel disease. Nat Rev Immunol. 2008; 8: 458-466.
3 Loftus EV, Jr. Clinical epidemiology of inflammatory bowel disease: Incidence, prevalence, and environmental influences. Gastroenterology. 2004; 126: 1504-1517.
4 Molodecky NA, Sooan IS, Rabi DM, et al. Increasing incidence and prevalence of the inflammatory bowel diseases with time, based on systematic review. Gastroenterology. 2012; 142: 46-54.
5 Port C, Anderson MP, Deshpande A, et al. Trends in hospitalizations of Children With Inflammatory Bowel Disease Within the United States From 2000 to 2009. J Investig Med. 2013; 61: 1036-1038.
6 Sewell JL, Yue HE, Jr, Inadomi JM. Hospitalizations are increasing among minority patients with Crohn’s disease and ulcerative colitis. Inflamm Bowel Dis. 2010; 16: 204-207.
7 Nguyen GC, Sam J, Murthy SK, et al. Hospitalizations for inflammatory bowel disease: profile of the uninsured in the United States. Inflamm Bowel Dis. 2006; 12: 726-733.
8 Bevtra M, Su C, Lewis JD. Trends in hospitalization rates for inflammatory bowel disease in the United States. Clin Gastroenterol Hepatol. 2007; 5: 597-601.
9 Nguyen GC, Tuskey A, Dassopoulos T, et al. Rising hospitalization rates for inflammatory bowel disease in the United States between 1998 and 2004. Inflamm Bowel Dis. 2007; 13: 1529-1535.
10 Smyth CM, Picha SB, Rathore O, et al. Increasing rates and changing patterns of hospital admissions for patients with inflammatory bowel disease in Ireland. 1996–2001. Ir J Med Sci. 2005; 174: 28-32.
11 Bernstein CN, Nababamba A. Hospitalization, surgery, and readmission rates of IBD in Canada: a population-based study. Am J Gastroenterol. 2006; 101: 110-118.
12 Sinicic BM, Vucevic B, Persic M, et al. Incidence of inflammatory bowel disease in Primorsko-goranska County, Croatia, 2000–2004: a prospective population-based study. Scand J Gastroenterol. 2006; 41: 437-444.
13 Lakatos L, Mester G, Erdelyi Z, et al. Striking elevation in incidence and prevalence of inflammatory bowel disease in a province of western Hungary between 1977–2001. World J Gastroenterol. 2004; 10: 404-409.
14 Lakatos L, Kiss LS, David G, et al. Incidence, disease phenotype at diagnosis, and early disease course in inflammatory bowel diseases in Western Hungary, 2002-2006. Inflamm Bowel Dis. 2011; 17: 2558-2565.
15 Kandievskaya-Bochenek K, Lazowska-Przerocka I, Albrecht P, et al. Epidemiology of inflammatory bowel disease among children in Poland. A prospective, population-based, 2-year study. 2002-2004. Digestion. 2009; 79: 121-129.
16 Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death. Vol. 1, 9th revision. Geneva, Switzerland: World Health Organization. 1975.
17 Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death. Vol. 1, 10th revision. Geneva, Switzerland: World Health Organization. 1992.
18 Ovczarek D, Cibor D, Salapa K, et al. Anti-inflammatory and anticoagulant properties of the protein C system in inflammatory bowel disease. Pol Arch Med Wewn. 2012; 122: 209-216.
19 Regula J, Zagorowicz E, Butruk E. Implementation of a national colorectal cancer screening program. Current Colorectal Cancer Reports. 2006; 2: 25-29.
20 Zagorowicz ES, Pietrzak AM, Wronska E, et al. Small bowel tumors detected and missed during capsule endoscopy: Single center experience. World J Gastroenterol. 2013; 19: 9043-9048.
21 Eder P, Katulska K, Lykowicz-Snubor L, et al. Simple Endoscopic Activity Score for Crohn’s Disease: comparison with endoscopic, biochemical, and clinical findings. Pol Arch Med Wewn. 2013; 123: 378-385.
Sonnenberg A. Age distribution of IBD hospitalization. Inflamm Bowel Dis. 2010; 16: 452-457.

Loftus CG, Loftus EV, Jr., Harmsen WS, et al. Update on the incidence and prevalence of Crohn’s disease and ulcerative colitis in Olmsted County, Minnesota, 1940-2000. Inflamm Bowel Dis. 2007; 13: 254-261.

Gower-Rousseau C, Vassequ F, Fumery M, et al. Epidemiology of inflammatory bowel diseases: new insights from a French population-based registry (EPIMAD). Dig Liver Dis. 2013; 45: 89-94.

Cosnes J, Gower-Rousseau C, Sekask P, et al. Epidemiology and natural history of inflammatory bowel diseases. Gastroenterology. 2011; 140: 1785-1794.

Bernstein CN, Wajda A, Svenson LW, et al. The epidemiology of inflammatory bowel disease in Canada: a population-based study. Am J Gastroenterol. 2006; 101: 1559-1568.

Geary RB, Richardson A, Frampton CM, et al. High incidence of Crohn’s disease in Canterbury, New Zealand: results of an epidemiologic study. Inflamm Bowel Dis. 2006; 12: 936-943.

Zagórowicz E. [Has treatment changed the natural history of inflammatory bowel disease?] Gastroenterologia Kliniczna. Postępy i Standardy. 2013; 5: 176-183. Polish.
Zwiększenie częstości hospitalizacji z powodu nieswoistych chorób zapalnych jelit w Polsce

Arkadiusz Jakubowski1*, Edyta Zagórowicz1,2*, Ewa Kraszewska2, Witold Bartnik1,2

1 Klinika Gastroenterologii Onkologicznej, Centrum Onkologii – Instytut im. Marii Skłodowskiej-Curie, Warszawa
2 Klinika Gastroenterologii, Hepatologii i Onkologii Klinicznej, Centrum Medyczne Kształcenia Podyplomowego, Warszawa

SŁOWA KLUCZOWE
choroba Leśniowskiego i Crohna, częstość hospitalizacji, epidemiologia, nieswoiste choroby zapalne jelit, wrzodziejące zapalenie jelita grubego

STRESZCZENIE
Zapadalność na nieswoiste choroby zapalne jelit (NChZJ) i częstość ich występowania w Polsce nie są znane.

CELE
Celem badania było określenie częstości hospitalizacji z powodu NChZJ oraz trendów czasowych w ostatnich dwóch dekadach.

PACJENCI I METODY
Dane pochodzą z bazy Narodowego Instytutu Zdrowia Publicznego (1991–1996 i 2003–2007). Uzyskano dane na temat hospitalizacji z powodu choroby Leśniowskiego i Crohna (ChLC) oraz wrzodziejącego zapalenia jelita grubego (WZJG). Obliczono częstość hospitalizacji na 100 000 osób w zależności od wieku, płci i rodzaju choroby.

WYNIKI
W latach 1991–1996 i 2003–2007 każdego roku częstość hospitalizacji z powodu NChZJ była większa niż w roku poprzednim i wzrosła od 12,50 do 30,61 na 100 000 osób. U obu płci stwierdzono trend rosnący. Częstość hospitalizacji z powodu ChLC zwiększyła się od 3,53 do 9,35 na 100 000, a z powodu WZJG od 8,97 do 21,26 na 100 000. Trend rosnący w częstości hospitalizacji z powodu ChLC stwierdzono u mężczyzn od 0 do 39. r. U kobiet trend rosnący w ChLC obserwowano w latach 2003–2007. Częstość hospitalizacji z powodu WZJG była większa u mężczyzn (9,18 do 23,29 na 100 000) niż u kobiet (8,77 do 19,37 na 100 000). W przypadku WZJG trend rosnący obserwowano w latach 2003–2007 u mężczyzn i kobiet we wszystkich grupach wiekowych z wyjątkiem osób między 40. a 64. r. W Zwiększenie częstości hospitalizacji z powodu NChZJ w Polsce w latach 1991–1996 i 2003–2007 zwiększyła się, wykazując rosnący trend u obu płci. W ChLC u mężczyzn trend rosnący występował jedynie w młodszych grupach wiekowych. Częstość hospitalizacji z powodu WZJG była istotnie większa u mężczyzn niż u kobiet.

1* A.J. i E.Z. w równym stopniu przyczynili się do powstania tej publikacji.