Department of Clinical Epidemiology

Regional Differences in Treatment of Patients with Inflammatory Bowel Disease in Denmark

Report no. 116

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Preface

This report has been prepared by the Department of Clinical Epidemiology, Aarhus University Hospital, Denmark, based on a Collaborating Agreement dated 10 July 2015 between AbbVie A/S and Aarhus University, Institute of Clinical Medicine, Department of Clinical Epidemiology.

The report was prepared by Rune Erichsen, MD, PhD; Trine Frøslev, MSc; and Henrik Toft Sørensen, MD, PhD, DMSc.

The report was requested in the scope of work.

The aim of the report is to highlight potential differences in quality of care in patients with inflammatory bowel disease by comparing treatment utilization among the five Danish Regions within three predefined treatment areas:

1. Glucocorticoid treatment
2. Biological therapy
3. Surgery

Regional Differences in Treatment of Patients with Inflammatory Bowel Disease in Denmark

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1. Background

Differences in treatment of patients with inflammatory bowel disease (IBD) across hospitals, regions, or countries may be a sign of suboptimal quality of care. In Denmark, we have no nationwide registry to monitor the clinical management of IBD patients; thus, evidence is quite limited regarding the quality of IBD treatment. However, Denmark has a variety of high-quality existing databases that facilitate rapid and efficient investigations of treatment patterns on a nationwide scale.[1] These databases are used in the assessment of quality of care, for instance, in patients with chronic obstructive pulmonary disease, and may also be valuable for assessment of IBD treatment. We aim to use existing registries to explore quality of care within three predefined IBD treatment areas: glucocorticoid treatment, biological therapy, and surgery.

Glucocorticoid treatment

A previous publication comparing the use of selected IBD therapeutics (2004–2009) in patients ≥65 years of age among Denmark, USA, Canada, and the UK showed that quarterly prescription rates of glucocorticoids were 20–30% among Danish IBD patients, representing some of the highest use among the included countries.[2] These findings are concerning because glucocorticoids are indicated primarily for IBD flares in the acute setting, whereas continuous and long-term treatment should be avoided. Updated data on the prevalence of glucocorticoid use in Denmark, including exploration of regional differences, are therefore important to guide future efforts in providing optimal treatment on a nationwide scale.

Biological treatment

Very little evidence exists on the use of biological therapy among IBD patients in Denmark. A report based on the National Registry of Medicinal Products and the Crohn's and Colitis Database has estimated that approximately 2,700 Danish IBD patients received biological therapy in Denmark in 2011, with an increase in use over time (2011–2013) and with the highest prescription rate in Region North.[3] Furthermore, a recent Danish publication estimated that the rates of biological therapy in the first year after diagnosis

were 6% and 3% in patients with Crohn's disease (CD) and ulcerative colitis (UC), respectively.[4] In comparison, 2013 data from a Swedish IBD database showed that 27% of all CD patients and 12% of all UC patients had received biological therapy.[5] More detailed Danish data on patterns of biological therapy are important not only to ensure optimal treatment but also to monitor developments in the use of these expensive drugs.

Surgery

Despite advances in medical treatment, 20–30% of patients with UC need surgery at some time while the lifetime risk of surgery for CD is as high as 80%.[6] Although imperfect, surgery (colectomy) can relieve gut-related symptoms and be regarded as a cure for UC. Similarly, surgery (intestinal resections) can be highly effective in CD but is offset by the recurrent nature of the disease. Recent data have revealed high postoperative mortality rates after acute colectomy for both UC (5.2%) and CD (8.1%), whereas elective colectomies are associated with very low postoperative mortality (0.9% and 1.5% for UC and CD, respectively).[7, 8] High rates of acute surgeries should therefore be avoided and may reflect an area of suboptimal quality of care.

2. Aim

As a marker of potential differences in quality of care in patients with IBD, we aim to compare treatment use among the five Danish regions within three predefined treatment areas:

1. Glucocorticoid treatment
2. Biological therapy
3. Surgery

3. Methods

Using existing Danish data sources, we identified all patients with an IBD diagnosis who were alive and living in Denmark from 1 January 2009 through 31 December 2014. We linked data using the unique civil registration number assigned to all Danish residents by the Civil Registration System at birth or upon immigration.[1]

3.1. Data sources

The Danish National Patient Registry (DNPR)[9]: This registry has tracked all non-psychiatric hospitalizations in Denmark since 1977 and outpatient hospital contacts since 1995. The DNPR records the civil registration number, dates of admission and discharge, selected treatments including biological therapy and surgeries (according to the NOMESCO coding system), and up to 20 discharge diagnoses, coded by physicians according to the International Classification of Diseases (ICD) (8th revision until the end of 1993 and 10th revision thereafter).

The Danish National Database of Reimbursed Prescriptions (DNDRP)[10]*:* This registry records reimbursed prescriptions dispensed at Danish pharmacies, with complete coverage from 2004 on. The DNDRP contains information on the prescription redemption date and the type and amount of dispensed medication according to the Anatomical Therapeutic Chemical (ATC) Classification System.

The Danish Civil Registration System (CRS)[11]: This registration system contains data on vital status (dead or alive), date of death, and residence for all Danish citizens and is updated daily.

3.2. Patients with inflammatory bowel disease

Using DNPR data back to 1977, we identified all patients with a discharge diagnosis corresponding to IBD (see Appendix for codes). To be included, patients were required to be alive and living in Denmark in the research period. We categorized patients as UC or CD. Patients with records for both UC and CD were classified as unspecified IBD. We defined IBD duration as time since first recorded diagnosis and also classified hospital contacts as inpatient or outpatient. Patients with both in- and outpatient contacts were counted as inpatients only. For inpatient visits, we computed duration of hospitalization as time from admission to discharge. Admissions at different departments and hospitals that were within 1 day were considered as one hospitalization. Patients with unspecified IBD were included for descriptive purposes but disregarded for comparisons of IBD treatments.

Using CRS data, IBD patients were categorized according to region of residence (Region North, Central Region, Region South, Region Zealand, and Capital Region).

3.3. Glucocorticoid treatment

Using prescription data, we identified redeemed oral glucocorticoid prescriptions among patients with IBD. We included prescriptions of oral prednisolone, prednisone, and budesonide because these drugs represent the vast majority of prescribed glucocorticoids in IBD patients (see Appendix for codes).

Within the relevant periods, glucocorticoid treatment was categorized according to (i) number of prescriptions, (ii) number of pills, and (iii) accumulated dosages. Prescriptions were categorized according to origin (hospital or primary sector).

3.4. Biological treatment

Using DNPR and prescription data, we identified treatment with biological therapy. The biological drugs infliximab, adalimumab, and vedolizumab are approved for the treatment of CD, whereas infliximab, adalimumab, golimumab, and vedolizumab are approved for the treatment of UC. Treatment with these drugs was identified by treatment codes in the DNPR or ATC codes in the prescription registry (there are no data on infliximab and vedolizumab use in the prescription registry because intravenously administered drugs are confined to the hospital setting) (see Appendix for codes). We evaluated biological treatment for both prevalent and incident use. The definition of episodic use was one or two infliximab infusions without any other use of biologicals within 12 weeks before or after therapy start. All other use was defined as continuous. We applied this definition because the indication for treatment start as acute or non-acute has not been recorded in the registries. Nonetheless, episodic use likely represents acute use whereas some patients categorized with continuous use may have been initiated in the acute setting.

3.5. Surgery

Using DNPR data, we identified colectomy for UC and CD patients and other intestinal resections (e.g., ileocecal resections) and anal fistula surgery for CD patients. Surgeries were categorized as acute or elective and according to hospital type (specialized vs. non-specialized hospital). The following hospitals were considered specialized: Aalborg (Region North), Aarhus (Central Region), Odense (Region South), Køge (Region Zealand), and Herlev, Hvidovre, and Rigshospitalet (Capital Region) (see Appendix for codes).

3.6. Covariates

As covariates, we included information on age at IBD diagnosis, age at the beginning of the research period, sex, and comorbidity. We summarized comorbidity (i.e., diseases coexisting with IBD) using the Charlson Comorbidity Index (CCI).[12] Its scoring system assigns between one and six points to a range of diseases (see Appendix) according to their effect on predicting short- and long-term mortality. Each patient's sum of points (score) is used as a measure of comorbidity burden. Information about patients' history of comorbid diseases since 1977 was obtained from the DNPR. We classified patients into three CCI groups as follows: score of 0 ("no comorbidity"), score of 1–2 ("low comorbidity"), and a score of 3 or more ("high comorbidity"). We also included information on anemia and osteoporosis and on prescriptions with azathioprine, 6-mercaptopurine, and methotrexate.

3.7. Statistics

For each of the five Danish regions, we calculated the frequency of IBD patients overall and within sub-groups for the following sub-periods: 2009–2010, 2011–2012, and 2013–2014. Within these periods and according to the regions, we calculated the proportion of IBD patients receiving glucocorticoid treatment, biological therapy, or surgery overall and within subgroups.

4. Results

4.1. Overall characteristics

We identified 37,458 patients with UC; 16,206 patients with CD; and 6,617 patients with unspecified IBD, all alive and living in Denmark between 2009 and 2014. The Capital Region had the highest number of IBD patients, closely followed by Central Region and Region South, whereas Region North had the lowest number of IBD patients (Table 1). Median disease duration at the beginning of the study varied between 4.3 years (Regions North and South) and 5.5 years (Central Region) for UC patients and between 4.4 years (Region Zealand) and 7.0 years (Region North) for CD patients. There were no substantial differences in gender distribution among the regions. Median age at diagnosis was slightly lower for UC patients in the Capital Region (38.8 years) compared to the rest of the country (country median 41.7 years), whereas median age at CD diagnosis was higher in Region Zealand (36.6 years) than in the rest of the country (country median 33.9 years). For UC patients, median age at study start (i.e., 1 January 2009) was lowest in the Capital Region (49.0 years) and highest in Region North (53.3 years), whereas it was lowest in the Central Region (43.6 years) and highest in Region Zealand (46.7 years) for CD patients. Region Zealand had the highest proportions of UC and CD patients with moderate and high comorbidity levels, although no major differences among regions were observed (Table 1). The proportion of UC patients with hospital admissions at any time during the study period was highest in the Capital Region (71.5%) and lowest in Region North (63.6%) (vice versa for outpatient visits), while the proportion of hospital admissions among CD patients was highest in Region Zealand (77.7%) and lowest in Region North (71.8%). The median duration of hospitalizations varied between 9 and 10 days for UC patients and between 10 and 12 days for CD patients.

4.2. Glucocorticoid use

4.2.1. Patients with ulcerative colitis

The proportion of UC patients with at least one prescription of glucocorticoids (prednisone, prednisolone, or budesonide) decreased slightly over the study period for all regions, and the difference in proportions among regions also decreased (Table 2a). In the most recent period (i.e., 2013–2014), the proportion of patients with at least one prescription varied between 17.0% (Capital Region) and 20.0% (Central Region and Regions North and South). The proportion of patients with ≥4 prescriptions also decreased over time and varied between 5.7% (Capital Region) and 7.3% (Region North) in the most recent period.

Among patients with prescriptions of glucocorticoids, the cumulative number of pills and dosages generally did not change over the study period. Use did not vary much among regions, although the Central Region seemed to have a lower overall use than other regions (Table 2a). The Capital Region had a higher proportion of prescriptions that originated from hospitals (as opposed to a primary sector origin) than the other regions. The median number of prescriptions per patient originating from specialized vs. non-specialized hospitals also did not vary much.

For patients with ≥2 glucocorticoid prescriptions, concomitant use of biologicals increased over time for all regions, and the difference in the proportion of patients with concomitant use of biologicals decreased over time. The proportion of patients with ≥2 prescriptions and concomitant biological therapy varied between 11.1% (Capital Region) and 13.4% (Region South) in the most recent period. The proportion of patients with concomitant use of other immunosuppressive drugs did not change much over the study period and varied between 14.3% (Central Region) and 19.4% (Capital Region) in the most recent period.

When evaluating prednisolone and prednisone use only (i.e., excluding budesonide use), the proportion of UC patients with at least one prescription also decreased over time and varied between 14.7% (Capital Region) and 17.2% (Region North) in the most recent period (Table 2b). The pattern of glucocorticoid use

described above did not change when excluding budesonide from the analysis, although the magnitude of the proportions decreased.

4.2.2. Patients with Crohn's disease

The proportion of CD patients with at least one prescription of glucocorticoids (prednisone, prednisolone, or budesonide) decreased slightly over the study period for all regions (Table 2c). In the most recent period, the proportion of patients with at least one prescription varied between 16.7% (Capital Region) and 24.2% (Regions North). The proportion of patients with ≥4 prescriptions also decreased over the study period and varied between 4.9% (Capital Region) and 7.7% (Region South) in the most recent period.

Among patients with prescriptions of glucocorticoids, the cumulative number of pills and dosages generally did not change over the study period. Use did not vary much among regions, although the Capital Region and Region Zealand seemed to have a slightly lower overall use than other regions (Table 2c). Except for the 2009-2010 period, the Capital Region had a higher proportion of prescriptions that originated from hospitals (as opposed to a primary sector origin) than the other regions. The median number of prescriptions per patient originating from specialized vs. non-specialized hospitals did not vary much, either.

For patients with ≥2 glucocorticoid prescriptions, concomitant use of biologicals increased over time for all regions except Region North. The difference in the proportion of patients with concomitant use of biologicals was pronounced among regions, although it decreased slightly over time. Hence, the proportion of patients with ≥2 glucocorticoid prescriptions with concomitant biological therapy varied between 16.8% (Capital Region) and 25.6% (Region Zealand) in the most recent period. The proportion of patients with concomitant use of other immunosuppressive drugs decreased or was stable over the study period and varied between 21.9% (Region Zealand) and 31.8% (Central Region) in the most recent period.

When evaluating prednisolone and prednisone use only (i.e., excluding budesonide use), the proportion of CD patients with at least one prescription decreased over time (stable for Capital Region) and varied between 13.1% (Capital Region) and 19.4% (Region North) in the most recent period (Table 2d). The pattern of glucocorticoid use described above did not change when excluding budesonide from the analysis, although the magnitude of the proportions decreased.

4.3. Biological therapy

4.2.1. Prevalent use: Patients with ulcerative colitis

The proportion of UC patients with recorded treatment codes or prescriptions of biological therapy increased over the study period for all regions and varied between 2.9% (Region North) and 3.9% (Central Region) in the most recent period. Among those who received biological therapy, the proportion receiving continuous treatment increased over time for the Capital Region, Central Region, Region North, and Region South but remained stable for Region Zealand (Table 3a). The majority of patients were treated with infliximab. Roughly between one fourth and one third had received neither glucocorticoids nor other immunosuppressive drugs in the year before the start of biological treatment, with no clear pattern among regions and over time. Generally, the level of comorbidities among patients receiving biological therapy did not change over the study period, although some variation among regions was observed. In the most recent period, the proportion of patients with no comorbidity varied between 69.9% (Region North) and 76.0% (Capital Region).

4.2.2. Prevalent use: Patients with Crohn's disease

The proportion of CD patients with recorded treatment codes or prescriptions of biological therapy increased over the study period for all regions and varied between 8.5% (Capital Region) and 14.8% (Central Region) in the most recent period. Among those receiving biological therapy, the proportion receiving continuous treatment increased over time for the Capital Region, Central Region, Region North, and Region Zealand but remained stable for Region South (Table 3b). Over time, the pattern of episodic and

continuous use became more similar among regions. The proportion of patients receiving neither glucocorticoids nor other immunosuppressive drugs in the year before the start of biological treatment increased over time and varied between 36.5% (Region North) and 48.9% (Region Zealand) in the most recent period. The level of comorbidities among patients receiving biological therapy increased slightly over the study period. The proportion of patients with moderate or severe comorbidity level varied between 24.7% (Central Region) and 29.0% (Region Zealand) in the most recent period.

4.2.2. Incident use: Patients with ulcerative colitis

Table 3c shows UC patients with incident use of biological therapy. Around 80% of patients received biological therapy as continuous treatment, but with substantial variation among regions. This variation, however, decreased over the study period. The disease duration at the start of treatment did not vary much over time or among regions. The proportion of patients receiving neither glucocorticoids nor other immunosuppressive drugs in the year before incident biological treatment did not change substantially.

4.2.2. Incident use: Patients with Crohn's disease

Table 3d shows patients with CD with incident use of biological therapy. An even larger proportion of Crohn's patients received biological therapy as continuous use compared to UC patients. Again, variation among regions was observed, but this variation decreased over time. The disease duration before the start of treatment also decreased over time except for Region Zealand. The proportion of patients receiving neither glucocorticoids nor other immunosuppressive drugs in the year before incident biological treatment did not change substantially (few observations).

4.4. Surgery

4.4.1. Patients with ulcerative colitis

Acute total colectomy

Table 4a describes UC patients undergoing acute total colectomy in the study period. Although the number of acute total colectomies decreased slightly over the study period on a nationwide scale, no clear pattern was observed for number of acute colectomies over time among the regions. In the most recent period, the number of acute colectomies varied between 15 (Region North) and 54 (Capital Region), and median age at colectomy varied between 44.0 years (Capital Region) and 62.0 years (Region Zealand). Slightly more men than women underwent acute total colectomy, although with some variation among regions. The median disease duration before acute colectomy was approximately one year, but with some variation among regions and over time. The proportion of patients with glucocorticoid prescriptions within 30 days of acute colectomy varied a great deal across regions and ranged from 6.7% (Region North) to 52.6% (Region South) in the most recent period. The use of biological treatment within 30 days of colectomy generally increased over time, but again with some variation among regions. In the most recent period, between 12.5% (Region Zealand) and 34.0% (Central Region) had received biological therapy in the 30 days before acute colectomy. Generally, most acute colectomies had been conducted at specialized IBD hospitals with proportions varying from 62.5% (Region Zealand) to 93.3% (Region North) in the most recent period.

Elective total colectomy

Table 4b describes UC patients undergoing elective total colectomy. On a nationwide scale, the number of elective colectomies did not change substantially over time and varied between 17 (Region North) and 42 (Capital Region) in the most recent period. Median age at colectomy varied between 46.1 years (Region North) and 56.1 years (Central Region) in the most recent period. As in the acute setting, slightly more men than women underwent total colectomy, but with variation over time and among regions. No clear pattern was observed for changes in pre-colectomy disease duration, which was generally between 4–5 years, but

with substantial variation. The use of glucocorticoids and biological therapy in the 180 days prior to colectomy increased over time: In the most recent period, between 42.1% (Region Zealand) and 77.3% (Capital Region) received glucocorticoids and between 36.4% (Capital Region) and 57.1% (Central Region) received biological therapy. Among those receiving biological therapy, the majority had two or more treatments. The majority of patients had elective total colectomy at a specialized IBD hospital, but with great variation among regions.

4.4.2. Patients with Crohn's disease

Total colectomy

Few CD patients underwent acute or elective total colectomy in the study period, preventing detailed evaluation over time and by regions (Tables 4c and 4d).

Intestinal resection (excluding total colectomies)

The number of acute intestinal resections other than total colectomies remained stable over the study period (Table 4e). Generally, more women than men underwent intestinal resections. We observed a great variation in median disease duration prior to resection with no clear pattern over time or among regions. In the most recent period, median disease duration varied between 1.4 years (Region North) and 5.9 years (Central Region). The proportion of patients receiving glucocorticoids in the 30 days prior to surgery decreased slightly over time except for Region Zealand and varied from 7.1% (Capital Region) to 13.9% (Region South) in the most recent period. In contrast, the use of biological therapy increased over the study period except for Region South and varied from 3.7% (Region Zealand) to 13.6% (Central Region) in the most recent period. The majority of patients underwent resections at specialized hospitals, except for patients in the Central Region.

Table 4f describes elective intestinal resections other than total colectomies among CD patients. We observed a slight increase in the number of resections over the study period, with no clear pattern of age and gender distribution among regions and over time. Median disease duration prior to surgery also varied

across regions, from 2.4 years (Region South) to 8.1 years (Region North) in the most recent period. The use of glucocorticoids in the 180 days prior to resection decreased over time except for Region Zealand and varied between 14.3% (Capital Region) and 39.7% (Region South) in the most recent period. In contrast, the proportion of patients receiving biological therapy increased over time and varied between 21.4% (Capital Region) and 32% (Central Region) in the most recent period. The majority of patients underwent resections at specialized hospitals in all regions.

Anal fistula/abscess surgery

The number of CD patients undergoing anal fistula/abscess surgery increased over the study period. Table 4g describes the characteristics of these patients. No clear pattern was observed for age and gender distributions among regions and over time. Median disease duration prior to surgery was roughly 4–5 years. Few patients had glucocorticoid or biological therapy in the 30 days prior to surgery, although the use of biological treatment increased over time. The majority of patients underwent surgery at a specialized hospital, although with substantial variation among regions.

5. Methodological considerations

5.1. Patients with inflammatory bowel disease

The research was conducted within the setting of the entire nation with free and uniform access to IBD healthcare in all five regions. We identified patients with IBD through the DNPR. The quality of the coding of IBD diagnoses in the DNPR has previously been validated as high.[13] We categorized IBD patients according to region of residence as recorded in the CRS rather than according to region of hospitals because not all patients had been hospitalized. Thus, for the analysis of specialized vs. non-specialized hospitals, some patients may have been hospitalized outside of their residence region.

Patients were also categorized according to the CCI. The coding of the 19 Charlson Index conditions in the DNPR has high accuracy (i.e., positive predictive values) but is not likely to be complete.[12] Hence, some of the patients categorized in the CCI 0 group may have been misclassified.

5.2. Glucocorticoid treatment

Although data in the DNDRP are complete, some limitations exist. The registry includes no detailed information regarding adherence, and misclassification of nonadherent patients as users is possible. However, co-payment requirements and beneficial effects on serious symptoms increase the likelihood that filled prescriptions reflect actual use. Also, glucocorticoids dispensed during hospitalization and outpatient clinic visits are not logged in the DNDRP, potentially leading to an underestimation of actual use. Nonetheless, our findings reflect that the use of glucocorticoids among Danish IBD patients is high. As mentioned in the Introduction, one study has compared the use of glucocorticoids between Denmark and other countries and found it to be high.[2] The comparison of our findings on prevalence of glucocorticoid use to those of studies from other countries is hampered by differences in study populations and methods for estimating glucocorticoid use.[14-16]

5.3. Biological therapy

To our knowledge, no studies have evaluated the quality of the coding of biological therapy in the DNPR. Nevertheless, we assume the completeness (sensitivity) and accuracy (positive predictive value) of the coding to be high because correct coding at hospitals is necessary to assure reimbursement for this expensive medication. Despite this assumption, we cannot rule out that the low proportion of patients receiving biological therapy in some regions could be related to incomplete coding. In addition, and as mentioned in the Methods, we had no direct information on the use of acute or continuous use of biologicals, limiting our ability to evaluate this use in detail.

5.4. Surgery

We have previously validated the diagnostic coding of acute total colectomy among IBD patients at Aarhus University Hospital.[8,17] Both completeness (sensitivity of 91%) and accuracy (positive predictive value 97%) were high, and we expect the coding of elective colectomy to be equally good. The quality of the coding of other intestinal resections and of anal fistula/abscess surgery is unknown.

6. Conclusions

We were able to use existing Danish registries to evaluate the use of glucocorticoids, biological therapy, and surgery among patients with IBD. In general, there were only minor differences in treatment patterns among regions. To a large extent, these differences decreased over the study period, coinciding with the introduction of treatment guidelines for IBD care in Denmark. As such, our findings did not indicate any substantial difference in quality of care of IBD patients among the Danish regions. Nonetheless, the following findings are noteworthy and may warrant further invesigation:

(i) An overall high use of glucocorticoids in Denmark.

(ii) Substantial differences among regions in the concomitant use of biological therapy together with glucocorticoids, particularly among patients with CD. Hence, there may be the potential for reducing the use of glucocorticoids by applying a clearer strategy for prescribing glucocorticoid-sparing drugs.

(iii) Substantial differences in the use of medical therapy before acute total colectomy (and other surgical procedures). These findings likely reflect the difficult clinical decision of terminating medical therapy because of incomplete response and continuing with surgery, with the risk of complicating the surgical procedures.

(iv) A large proportion of IBD patients undergoing surgery at non-specialized hospitals.

Reference list

(1) Frank L. Epidemiology. When an entire country is a cohort. *Science* 2000 March 31;287(5462):2398-9.

(2) Benchimol EI, Cook SF, Erichsen R et al. International variation in medication prescription rates among elderly patients with inflammatory bowel disease. *J Crohns Colitis* 2013 December;7(11):878-89.

(3) Statens Serum Institut. Report: Salget af biologiske lægemidler til gigtsygdomme, psoriasis og tarmbetændelse stiger fortsat. 2013.

(4) Rungoe C, Langholz E, Andersson M et al. Changes in medical treatment and surgery rates in inflammatory bowel disease: a nationwide cohort study 1979-2011. *Gut* 2014 October;63(10):1607-16.

(5) Årsrapport. http://www.swibreg.se/personal/wp-content/uploads/sites/3/2014/09/SWIBREG_arsrapport_2013_final.pdf. 2015.
Ref Type: Online Source

(6) Sanderson JD, Parkes GC. Timing of surgery for inflammatory bowel disease. *BMJ* 2007 November 17;335(7628):1006.

(7) Singh S, Al-Darmaki A, Frolkis AD et al. Post-operative Mortality Among Patients With Inflammatory Bowel Diseases: A Systematic Review and Meta-Analysis of Population-based Studies. *Gastroenterology* 2015 June 5.

(8) Tottrup A, Erichsen R, Svaerke C, Laurberg S, Srensen HT. Thirty-day mortality after elective and emergency total colectomy in Danish patients with inflammatory bowel disease: a population-based nationwide cohort study. *BMJ Open* 2012;2(2):e000823.

(9) Lynge E, Sandegaard JL, Rebolj M. The Danish National Patient Register. *Scand J Public Health* 2011 July;39(7 Suppl):30-3.

(10) Johannesdottir SA, Horváth-Puhó E, Ehrenstein V, Schmidt M, Pedersen L, Sørensen HT. Existing data sources for clinical epidemiology: The Danish National Database of Reimbursed Prescriptions. *Clin Epidemiol.* 2012;4:303-13.

(11) Pedersen CB, Gotzsche H, Moller JO, Mortensen PB. The Danish Civil Registration System. A cohort of eight million persons. *Dan Med Bull* 2006 November;53(4):441-9.

(12) Thygesen SK, Christiansen CF, Christensen S, Lash TL, Sorensen HT. The predictive value of ICD-10 diagnostic coding used to assess Charlson comorbidity index conditions in the population-based Danish National Registry of Patients. *BMC Med Res Methodol* 2011;11:83.

(13) Fonager K, Sorensen HT, Rasmussen SN, Moller-Petersen J, Vyberg M. Assessment of the diagnoses of Crohn's disease and ulcerative colitis in a Danish hospital information system. *Scand J Gastroenterol* 1996 February;31(2):154-9.

(14) Targownik LE, Nugent Z, Singh H, Bernstein CH. Prevalence of and outcomes associated with corticosteroid prescription in inflammatory bowel disease. *Inflam Bowel Dis* 2014; 20:622-630.

(15) Geisz M, Ha C, Kappelman MD, Martin CF, Chen W, Anton K, Sandler RS, Long MD. Medication Utilization and the impact of continous cortocosteroid use in patient-reported outcomes in older patients with inflammatory bowel disease. *Inflamm Bowel Dis* 2016;22:1435-1441.

(16) Waljee AK, Wiitala WL, Govani S, Stidham R, Saini S, Hou J, Feagins LA, Khan N, Good CB, Vijan S, Higgins PDR. Corticosteroid use and complications in a US inflammatory bowel disease cohort. *PLoS One* 2016;11:e0158017

(17) Erichsen R, Sværke C, Tøttrup A. The coding quality of acute total colectomy in inflammatory bowel disease patients in a nationwide hospital registry. *Pharmacoepidemiol Drug Saf* 2011;20:S165

Tables

Table 1: Characteristics of patients with inflammatory bowel disease (IBD), Denmark 2009–2014

		Ulcerative colitis						Crohn's disease						Unspecified IBD					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of patients	N	9,630	9,067	4,147	5,576	9,038	37,458	5,107	3,477	1,634	2,537	3,451	16,206	2,140	1,457	565	1,107	1,348	6,617
Disease duration[1]	Mean (years)	8.1	8.2	7.7	7.7	7.1	7.8	8.6	8.5	9.7	8.2	9.1	8.7	10.0	10.4	10.2	10.6	9.7	10.1
	Lowest quartile	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	2.8	2.3	2.6	2.1	2.4
	Middle quartile	5.4	5.5	4.3	4.6	4.3	4.9	5.8	5.4	7.0	4.4	6.0	5.7	8.5	9.1	8.6	9.1	7.9	8.6
	Highest quartile	13.0	12.9	13.0	12.1	11.7	12.5	14.2	14.3	16.8	14.2	15.5	14.7	15.1	15.2	16.0	16.5	14.7	15.3
Gender																			
Women	N	5,283	4,861	2,157	2,982	4,853	20,136	2,902	2,005	941	1,476	2,009	9,333	1,150	839	313	613	813	3,728
	%	54.9	53.6	52.0	53.5	53.7	53.8	56.8	57.7	57.6	58.2	58.2	57.6	53.7	57.6	55.4	55.4	60.3	56.3
Men	N	4,347	4,206	1,990	2,594	4,185	17,322	2,205	1,472	693	1,061	1,442	6,873	990	618	252	494	535	2,889
	%	45.1	46.4	48.0	46.5	46.3	46.2	43.2	42.3	42.4	41.8	41.8	42.4	46.3	42.4	44.6	44.6	39.7	43.7
Age at IBD diagnosis	Median (years)	38.8	42.0	43.8	43.3	42.9	41.7	33.9	32.9	32.4	36.3	34.1	33.9	31.4	31.7	33.3	33.7	33.4	32.5
Less than 16 years	N	272	208	99	101	188	868	284	159	79	112	183	817	135	89	42	65	69	400
	%	2.8	2.3	2.4	1.8	2.1	2.3	5.6	4.6	4.8	4.4	5.3	5.0	6.3	6.1	7.4	5.9	5.1	6.0
16–39 years	N	4,754	4,021	1,732	2,384	3,838	16,729	2,820	2,032	970	1,304	1,897	9,023	1,285	859	314	638	756	3,852
	%	49.4	44.3	41.8	42.8	42.5	44.7	55.2	58.4	59.4	51.4	55.0	55.7	60.0	59.0	55.6	57.6	56.1	58.2
40–59 years	N	2,714	2,902	1,305	1,723	2,928	11,572	1,188	821	378	676	828	3,891	487	322	142	285	336	1,572
	%	28.2	32.0	31.5	30.9	32.4	30.9	23.3	23.6	23.1	26.6	24.0	24.0	22.8	22.1	25.1	25.7	24.9	23.8
60+ years	N	1,890	1,936	1,011	1,368	2,084	8,289	815	465	207	445	543	2,475	233	187	67	119	187	793
	%	19.6	21.4	24.4	24.5	23.1	22.1	16.0	13.4	12.7	17.5	15.7	15.3	10.9	12.8	11.9	10.7	13.9	12.0
Age on 1 January 2009	Median (years)	49.0	51.9	53.2	52.5	51.6	51.4	44.5	43.6	45.5	46.7	45.9	45.0	43.2	44.4	45.9	45.8	45.0	44.5
16–39 years	N	3,193	2,503	1,058	1,398	2,465	10,617	2,043	1,461	643	889	1,293	6,329	913	572	221	397	506	2,609
	%	33.2	27.6	25.5	25.1	27.3	28.3	40.0	42.0	39.4	35.0	37.5	39.1	42.7	39.3	39.1	35.9	37.5	39.4

		Ulcerative colitis						Crohn's disease						Unspecified IBD					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
40–59 years	N	3,346	3,475	1,578	2,130	3,456	13,985	1,755	1,222	609	964	1,261	5,811	767	551	197	456	507	2,478
	%	34.7	38.3	38.1	38.2	38.2	37.3	34.4	35.1	37.3	38.0	36.5	35.9	35.8	37.8	34.9	41.2	37.6	37.4
60+ years	N	3,091	3,089	1,511	2,048	3,117	12,856	1,309	794	382	684	897	4,066	460	334	147	254	335	1,530
	%	32.1	34.1	36.4	36.7	34.5	34.3	25.6	22.8	23.4	27.0	26.0	25.1	21.5	22.9	26.0	22.9	24.9	23.1
Comorbidity																			
No (CCI=0)	N	6,697	6,387	2,909	3,731	6,262	25,986	3,507	2,487	1,187	1,715	2,437	11,333	1,473	1,068	387	750	933	4,611
	%	69.5	70.4	70.1	66.9	69.3	69.4	68.7	71.5	72.6	67.6	70.6	69.9	68.8	73.3	68.5	67.8	69.2	69.7
Moderate (CCI=1–2)	N	2,190	2,065	959	1,381	2,110	8,705	1,218	767	369	631	792	3,777	517	299	134	263	332	1,545
	%	22.7	22.8	23.1	24.8	23.3	23.2	23.8	22.1	22.6	24.9	22.9	23.3	24.2	20.5	23.7	23.8	24.6	23.3
High (CCI=3+)	N	743	615	279	464	666	2,767	382	223	78	191	222	1,096	150	90	44	94	83	461
	%	7.7	6.8	6.7	8.3	7.4	7.4	7.5	6.4	4.8	7.5	6.4	6.8	7.0	6.2	7.8	8.5	6.2	7.0
Anemia	N	153	150	71	104	123	601	143	122	56	74	93	488	54	41	16	27	40	178
	%	1.6	1.7	1.7	1.9	1.4	1.6	2.8	3.5	3.4	2.9	2.7	3.0	2.5	2.8	2.8	2.4	3.0	2.7
Osteoporosis	N	183	279	63	108	352	985	91	112	24	40	149	416	40	45	13	28	67	193
	%	1.9	3.1	1.5	1.9	3.9	2.6	1.8	3.2	1.5	1.6	4.3	2.6	1.9	3.1	2.3	2.5	5.0	2.9
Hospital contact																			
Admitted	N	6,889	5,885	2,639	3,890	5,850	25,153	3,875	2,570	1,174	1,971	2,548	12,138	1,760	1,123	418	871	1,072	5,244
	%	71.5	64.9	63.6	69.8	64.7	67.1	75.9	73.9	71.8	77.7	73.8	74.9	82.2	77.1	74.0	78.7	79.5	79.3
Outpatient visit	N	2,333	2,941	1,428	1,438	3,015	11,155	962	811	427	457	818	3,475	346	313	138	218	268	1,283
	%	24.2	32.4	34.4	25.8	33.4	29.8	18.8	23.3	26.1	18.0	23.7	21.4	16.2	21.5	24.4	19.7	19.9	19.4
None	N	408	241	80	248	173	1,150	270	96	33	109	85	593	34	21	9	18	8	90
	%	4.2	2.7	1.9	4.4	1.9	3.1	5.3	2.8	2.0	4.3	2.5	3.7	1.6	1.4	1.6	1.6	0.6	1.4
Hospital contact																			
One admission	N	2,019	1,964	910	1,116	1,929	7,938	943	682	334	465	698	3,122	329	261	98	168	234	1,090
	%	21.0	21.7	21.9	20.0	21.3	21.2	18.5	19.6	20.4	18.3	20.2	19.3	15.4	17.9	17.3	15.2	17.4	16.5
Two or more admissions	N	4,870	3,921	1,729	2,774	3,921	17,215	2,932	1,888	840	1,506	1,850	9,016	1,431	862	320	703	838	4,154

		Ulcerative colitis						Crohn's disease						Unspecified IBD					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
	%	50.6	43.2	41.7	49.7	43.4	46.0	57.4	54.3	51.4	59.4	53.6	55.6	66.9	59.2	56.6	63.5	62.2	62.8
Outpatient visit	N	2,333	2,941	1,428	1,438	3,015	11,155	962	811	427	457	818	3,475	346	313	138	218	268	1,283
	%	24.2	32.4	34.4	25.8	33.4	29.8	18.8	23.3	26.1	18.0	23.7	21.4	16.2	21.5	24.4	19.7	19.9	19.4
None	N	408	241	80	248	173	1,150	270	96	33	109	85	593	34	21	9	18	8	90
	%	4.2	2.7	1.9	4.4	1.9	3.1	5.3	2.8	2.0	4.3	2.5	3.7	1.6	1.4	1.6	1.6	0.6	1.4
Duration of hospitalizations	Median (days)	9	9	9	10	9	9	11	10	11	12	11	11	15	14	16	16	15	15

[1]Measured on 1 January 2009; i.e., patients diagnosed during the research period contributed 0 days.

Table 2a: Use of glucocorticoids (including budesonide) in patients with ulcerative colitis

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of patients	N	7,989	7,628	3,293	4,561	7,414	30,885	8,518	8,158	3,611	4,885	8,033	33,205	9,074	8,470	3,864	5,154	8,389	34,951
Glucocorticoids																			
No	N	6,507	6,016	2,612	3,513	5,752	24,400	7,026	6,420	2,890	3,834	6,460	26,630	7,535	6,772	3,090	4,125	6,822	28,344
	%	81.4	78.9	79.3	77.0	77.6	79.0	82.5	78.7	80.0	78.5	80.4	80.2	83.0	80.0	80.0	80.0	81.3	81.1
Yes	N	1,482	1,612	681	1,048	1,662	6,485	1,492	1,738	721	1,051	1,573	6,575	1,539	1,698	774	1,029	1,567	6,607
	%	18.6	21.1	20.7	23.0	22.4	21.0	17.5	21.3	20.0	21.5	19.6	19.8	17.0	20.0	20.0	20.0	18.7	18.9
Number of prescriptions																			
0	N	6,507	6,016	2,612	3,513	5,752	24,400	7,026	6,420	2,890	3,834	6,460	26,630	7,535	6,772	3,090	4,125	6,822	28,344
	%	81.4	78.9	79.3	77.0	77.6	79.0	82.5	78.7	80.0	78.5	80.4	80.2	83.0	80.0	80.0	80.0	81.3	81.1
1	N	409	496	201	305	528	1,939	424	561	198	332	469	1,984	424	552	236	309	510	2,031
	%	5.1	6.5	6.1	6.7	7.1	6.3	5.0	6.9	5.5	6.8	5.8	6.0	4.7	6.5	6.1	6.0	6.1	5.8
2	N	343	353	127	219	350	1,392	371	365	141	231	344	1,452	347	343	145	248	366	1,449
	%	4.3	4.6	3.9	4.8	4.7	4.5	4.4	4.5	3.9	4.7	4.3	4.4	3.8	4.0	3.8	4.8	4.4	4.1
3	N	241	215	78	137	193	864	196	210	103	143	196	848	247	200	110	128	195	880
	%	3.0	2.8	2.4	3.0	2.6	2.8	2.3	2.6	2.9	2.9	2.4	2.6	2.7	2.4	2.8	2.5	2.3	2.5
4+	N	489	548	275	387	591	2,290	501	602	279	345	564	2,291	521	603	283	344	496	2,247
	%	6.1	7.2	8.4	8.5	8.0	7.4	5.9	7.4	7.7	7.1	7.0	6.9	5.7	7.1	7.3	6.7	5.9	6.4

			2009–10						2011–12						2013–14					
			Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of pills among subjects with prescriptions		Mean	321	309	350	318	325	322	306	287	358	299	331	311	310	311	334	292	299	308
		Median	200	200	200	200	200	200	200	130	202	200	200	200	200	128	200	200	200	200
Overall	**Cumulative dosages**	Number of subjects	1,482	1,612	681	1,048	1,662	6,485	1,492	1,738	721	1,051	1,573	6,575	1,539	1,698	774	1,029	1,567	6,607
		Mean	2,461	2,293	2,442	2,414	2,314	2,372	2,431	2,179	2,550	2,363	2,303	2,336	2,474	2,261	2,562	2,363	2,239	2,357
		Lowest quartile	500	250	250	415	250	300	500	250	500	450	257	300	500	250	300	300	250	300
		Middle quartile	2,000	1,500	1,500	1,750	1,500	1,500	1,775	1,053	1,750	1,500	1,500	1,500	2,000	1,000	1,625	1,500	1,250	1,500
		Highest quartile	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,011	3,520	3,264	3,500	3,450	3,500	3,125	3,510	3,500	3,375	3,500
Admitted	**Cumulative dosages**	Number of subjects	937	908	354	586	860	3,645	920	924	389	596	837	3,666	999	912	402	624	820	3,757
		Mean	2,738	2,922	2,938	2,746	2,854	2,832	2,673	2,760	2,963	2,765	2,774	2,764	2,782	2,904	3,023	2,634	2,822	2,821
		Lowest quartile	625	502	500	500	500	514	521	500	607	500	500	500	690	500	500	500	500	500
		Middle quartile	2,500	2,500	2,500	2,500	2,097	2,500	2,250	2,400	2,500	2,250	1,930	2,128	2,500	2,370	2,525	2,000	2,106	2,400
		Highest quartile	3,500	3,758	4,000	4,000	4,000	3,800	3,500	3,500	4,000	3,750	4,000	3,575	3,500	3,572	4,000	3,500	3,750	3,600
Outpatients	**Cumulative dosages**	Number of subjects	479	598	300	403	723	2,503	504	725	307	370	684	2,590	491	707	348	351	692	2,589
		Mean	2,069	1,589	1,957	2,157	1,752	1,863	2,205	1,604	2,105	2,043	1,793	1,893	1,990	1,488	2,104	2,023	1,652	1,782
		Lowest quartile	500	150	125	300	136	250	500	84	250	250	250	250	480	80	250	250	250	250
		Middle quartile	1,500	600	980	1,260	898	1,000	1,500	600	1,250	1,250	1,000	1,000	1,250	500	1,000	1,250	750	900
		Highest quartile	3,000	2,500	3,000	3,500	3,000	3,000	3,112	2,500	3,500	3,000	3,000	3,000	3,000	2,400	3,197	3,000	2,584	3,000
No hospital contact	**Cumulative dosages**	Number of subjects	66	106	27	59	79	337	68	89	25	85	52	319	49	79	24	54	55	261
		Mean	1,378	881	1,327	872	1,576	1,176	832	834	1,593	938	1,432	1,018	1,061	1,764	1,491	1,441	943	1,367
		Lowest quartile	125	28	21	80	40	42	119	80	125	80	40	80	250	47	40	80	40	80
		Middle quartile	275	275	250	250	250	250	250	250	500	250	438	250	500	300	500	250	250	250
		Highest quartile	1,500	1,000	2,250	1,000	2,196	1,500	950	1,000	2,400	750	1,925	1,200	1,500	2,100	2,300	1,500	1,000	1,650
Prescription origin																				
Primary sector		N	547	879	376	548	786	3,136	518	943	402	513	707	3,083	484	861	401	619	751	3,116

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
	%	36.9	54.5	55.2	52.3	47.3	48.4	34.7	54.3	55.8	48.8	44.9	46.9	31.4	50.7	51.8	60.2	47.9	47.2
Hospital	N	935	733	305	500	876	3,349	974	795	319	538	866	3,492	1,055	837	373	410	816	3,491
	%	63.1	45.5	44.8	47.7	52.7	51.6	65.3	45.7	44.2	51.2	55.1	53.1	68.6	49.3	48.2	39.8	52.1	52.8
Prescriptions from hospitals																			
0	N	547	879	376	548	786	3,136	518	943	402	513	707	3,083	484	861	401	619	751	3,116
	%	36.9	54.5	55.2	52.3	47.3	48.4	34.7	54.3	55.8	48.8	44.9	46.9	31.4	50.7	51.8	60.2	47.9	47.2
1	N	261	294	118	177	301	1,151	302	322	103	193	274	1,194	304	302	115	158	310	1,189
	%	17.6	18.2	17.3	16.9	18.1	17.7	20.2	18.5	14.3	18.4	17.4	18.2	19.8	17.8	14.9	15.4	19.8	18.0
2	N	305	225	85	155	263	1,033	277	236	102	171	253	1,039	299	253	105	126	253	1,036
	%	20.6	14.0	12.5	14.8	15.8	15.9	18.6	13.6	14.1	16.3	16.1	15.8	19.4	14.9	13.6	12.2	16.1	15.7
3	N	174	104	45	72	108	503	156	94	62	62	110	484	182	105	70	56	109	522
	%	11.7	6.5	6.6	6.9	6.5	7.8	10.5	5.4	8.6	5.9	7.0	7.4	11.8	6.2	9.0	5.4	7.0	7.9
4+	N	195	110	57	96	204	662	239	143	52	112	229	775	270	177	83	70	144	744
	%	13.2	6.8	8.4	9.2	12.3	10.2	16.0	8.2	7.2	10.7	14.6	11.8	17.5	10.4	10.7	6.8	9.2	11.3
Number of prescriptions per patient	Number of subjects, specialized IBD hospitals	432	32	139	205	281	1,089	417	164	161	204	278	1,224	506	244	193	132	320	1,395
	Mean, specialized IBD hospitals	3	2	2	3	3	3	3	2	2	3	3	3	3	2	3	2	3	3
	Median, specialized IBD hospitals	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Number of prescriptions per patient	Number of subjects, non-specialized regional hospitals	550	713	171	310	610	2,354	588	672	168	357	605	2,390	590	616	195	295	517	2,213
	Mean, non-specialized regional hospitals	3	2	2	2	2	2	3	2	2	2	3	2	3	3	2	2	2	2
	Median, non-specialized regional hospitals	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
For patients with 2+ prescriptions	N	1,073	1,116	480	743	1,134	4,546	1,068	1,177	523	719	1,104	4,591	1,115	1,146	538	720	1,057	4,576
Concomitant biological treatment	N	66	98	31	68	58	321	106	141	44	71	108	470	124	141	68	94	142	569
	%	6.2	8.8	6.5	9.2	5.1	7.1	9.9	12.0	8.4	9.9	9.8	10.2	11.1	12.3	12.6	13.1	13.4	12.4
Concomitant immunosuppressive medication (AZA/6-MP/MTX)	N	218	148	76	160	214	816	227	160	83	133	198	801	216	164	81	131	164	756
	%	20.3	13.3	15.8	21.5	18.9	17.9	21.3	13.6	15.9	18.5	17.9	17.4	19.4	14.3	15.1	18.2	15.5	16.5
No concomitant biological or immunosuppressive medication	N	789	870	373	515	862	3,409	735	876	396	515	798	3,320	775	841	389	495	751	3,251
	%	73.5	78.0	77.7	69.3	76.0	75.0	68.8	74.4	75.7	71.6	72.3	72.3	69.5	73.4	72.3	68.8	71.1	71.0
Admitted	N	715	691	269	440	635	2,750	672	680	299	439	624	2,714	757	662	307	455	602	2,783
	%	66.6	61.9	56.0	59.2	56.0	60.5	62.9	57.8	57.2	61.1	56.5	59.1	67.9	57.8	57.1	63.2	57.0	60.8
Outpatients	N	325	362	198	275	456	1,616	360	450	210	245	450	1,715	330	440	220	240	429	1,659
	%	30.3	32.4	41.3	37.0	40.2	35.5	33.7	38.2	40.2	34.1	40.8	37.4	29.6	38.4	40.9	33.3	40.6	36.3
No hospital contact	N	33	63	13	28	43	180	36	47	14	35	30	162	28	44	11	25	26	134
	%	3.1	5.6	2.7	3.8	3.8	4.0	3.4	4.0	2.7	4.9	2.7	3.5	2.5	3.8	2.0	3.5	2.5	2.9
Women	N	605	628	262	402	630	2,527	602	670	280	410	618	2,580	647	664	286	402	571	2,570
	%	56.4	56.3	54.6	54.1	55.6	55.6	56.4	56.9	53.5	57.0	56.0	56.2	58.0	57.9	53.2	55.8	54.0	56.2
Men	N	468	488	218	341	504	2,019	466	507	243	309	486	2,011	468	482	252	318	486	2,006
	%	43.6	43.7	45.4	45.9	44.4	44.4	43.6	43.1	46.5	43.0	44.0	43.8	42.0	42.1	46.8	44.2	46.0	43.8
Age at the beginning of the period	Median	53.4	60.5	60.3	58.4	57.4	57.5	53.5	60.4	59.5	60.9	57.0	58.1	52.8	61.1	62.0	60.1	58.4	58.8

Table 2b: Use of oral glucocorticoids (prednisone and prednisolone) in patients with ulcerative colitis

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of patients	N	7,989	7,628	3,293	4,561	7,414	30,885	8,518	8,158	3,611	4,885	8,033	33,205	9,074	8,470	3,864	5,154	8,389	34,951
Glucocorticoids																			
No	N	6,697	6,321	2,705	3,676	5,984	25,383	7,238	6,760	2,992	3,990	6,704	27,684	7,742	7,092	3,199	4,273	7,048	29,354
	%	83.8	82.9	82.1	80.6	80.7	82.2	85.0	82.9	82.9	81.7	83.5	83.4	85.3	83.7	82.8	82.9	84.0	84.0
Yes	N	1,292	1,307	588	885	1,430	5,502	1,280	1,398	619	895	1,329	5,521	1,332	1,378	665	881	1,341	5,597
	%	16.2	17.1	17.9	19.4	19.3	17.8	15.0	17.1	17.1	18.3	16.5	16.6	14.7	16.3	17.2	17.1	16.0	16.0
Number of prescriptions																			
0	N	6,697	6,321	2,705	3,676	5,984	25,383	7,238	6,760	2,992	3,990	6,704	27,684	7,742	7,092	3,199	4,273	7,048	29,354
	%	83.8	82.9	82.1	80.6	80.7	82.2	85.0	82.9	82.9	81.7	83.5	83.4	85.3	83.7	82.8	82.9	84.0	84.0
1	N	387	470	194	291	492	1,834	392	518	201	311	429	1,851	403	535	217	287	484	1,926
	%	4.8	6.2	5.9	6.4	6.6	5.9	4.6	6.3	5.6	6.4	5.3	5.6	4.4	6.3	5.6	5.6	5.8	5.5
2	N	322	305	119	201	314	1,261	339	316	125	221	313	1,314	320	294	141	223	331	1,309
	%	4.0	4.0	3.6	4.4	4.2	4.1	4.0	3.9	3.5	4.5	3.9	4.0	3.5	3.5	3.6	4.3	3.9	3.7
3	N	217	175	69	117	174	752	174	167	94	124	190	749	230	182	98	110	161	781
	%	2.7	2.3	2.1	2.6	2.3	2.4	2.0	2.0	2.6	2.5	2.4	2.3	2.5	2.1	2.5	2.1	1.9	2.2
4+	N	366	357	206	276	450	1,655	375	397	199	239	397	1,607	379	367	209	261	365	1,581
	%	4.6	4.7	6.3	6.1	6.1	5.4	4.4	4.9	5.5	4.9	4.9	4.8	4.2	4.3	5.4	5.1	4.4	4.5

			2009–10						2011–12						2013–14					
			Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of pills among subjects with prescriptions		Mean	288	251	310	272	288	279	284	238	308	258	297	274	286	258	300	265	267	273
		Median	200	102	200	200	200	200	200	100	200	200	200	200	200	100	200	200	200	200
Overall	**Cumulative dosages**	Number of subjects	1,292	1,307	588	885	1,430	5,502	1,280	1,398	619	895	1,329	5,521	1,332	1,378	665	881	1,341	5,597
		Mean	2,583	2,441	2,542	2,544	2,421	2,497	2,617	2,358	2,644	2,499	2,445	2,494	2,642	2,419	2,719	2,536	2,372	2,515
		Lowest quartile	500	250	250	278	250	250	500	250	278	400	250	250	500	250	264	304	250	257
		Middle quartile	2,313	1,750	1,633	2,000	1,500	1,750	2,313	1,500	2,000	1,750	1,500	1,750	2,500	1,175	2,000	2,000	1,500	1,750
		Highest quartile	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	4,000	3,500	3,500	3,500	3,500	3,500	4,000	3,500	3,500	3,500
Admitted	**Cumulative dosages**	Number of subjects	840	765	303	499	745	3,152	807	789	331	505	727	3,159	886	791	349	548	715	3,289
		Mean	2,856	3,097	3,051	2,891	3,003	2,973	2,854	2,953	3,068	2,927	2,908	2,925	2,943	3,073	3,220	2,773	2,982	2,984
		Lowest quartile	750	500	500	500	500	500	625	500	500	500	500	500	1,000	500	500	500	500	500
		Middle quartile	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,000	2,500	2,500	2,500	3,000	2,500	2,500	2,500
		Highest quartile	3,750	4,000	4,000	4,000	4,250	4,000	4,000	3,505	4,125	4,000	4,000	4,000	3,500	3,625	4,155	3,625	4,000	3,750
Outpatients	**Cumulative dosages**	Number of subjects	397	460	260	335	613	2,065	415	535	268	316	559	2,093	407	524	295	282	575	2,083
		Mean	2,174	1,675	2,067	2,290	1,818	1,962	2,421	1,711	2,212	2,205	1,927	2,048	2,152	1,540	2,228	2,292	1,748	1,916
		Lowest quartile	250	80	105	250	80	160	500	80	180	250	250	250	500	80	250	290	250	250
		Middle quartile	1,500	500	1,000	1,500	1,000	1,000	2,000	500	1,438	1,500	1,000	1,250	1,500	500	1,000	1,500	750	1,000
		Highest quartile	3,500	2,750	3,500	3,500	3,000	3,000	3,500	2,500	3,500	3,000	3,000	3,000	3,000	2,500	3,500	3,500	3,000	3,000
No hospital contact	**Cumulative dosages**	Number of subjects	55	82	25	51	72	285	58	74	20	74	43	269	39	63	21	51	51	225
		Mean	1,383	629	1,319	811	1,540	1,098	722	701	1,421	835	1,350	900	943	1,516	1,294	1,347	857	1,208
		Lowest quartile	80	14	21	49	40	40	80	40	51	80	28	80	240	40	40	42	28	56
		Middle quartile	250	80	167	240	250	240	250	245	202	250	250	250	250	250	500	250	250	250
		Highest quartile	1,500	500	2,250	625	1,750	1,000	500	750	1,000	500	1,500	750	1,125	1,750	2,500	1,500	580	1,200
Prescription origin																				
Primary sector		N	476	725	338	483	722	2,744	451	799	342	457	628	2,677	421	746	339	545	671	2,722

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
	%	36.8	55.5	57.5	54.6	50.5	49.9	35.2	57.2	55.3	51.1	47.3	48.5	31.6	54.1	51.0	61.9	50.0	48.6
Hospital	N	816	582	250	402	708	2,758	829	599	277	438	701	2,844	911	632	326	336	670	2,875
	%	63.2	44.5	42.5	45.4	49.5	50.1	64.8	42.8	44.7	48.9	52.7	51.5	68.4	45.9	49.0	38.1	50.0	51.4
Prescriptions from hospitals																			
0	N	476	725	338	483	722	2,744	451	799	342	457	628	2,677	421	746	339	545	671	2,722
	%	36.8	55.5	57.5	54.6	50.5	49.9	35.2	57.2	55.3	51.1	47.3	48.5	31.6	54.1	51.0	61.9	50.0	48.6
1	N	228	234	90	140	232	924	253	238	90	153	215	949	268	238	101	132	262	1,001
	%	17.6	17.9	15.3	15.8	16.2	16.8	19.8	17.0	14.5	17.1	16.2	17.2	20.1	17.3	15.2	15.0	19.5	17.9
2	N	280	182	79	129	226	896	257	199	89	158	217	920	276	209	104	111	215	915
	%	21.7	13.9	13.4	14.6	15.8	16.3	20.1	14.2	14.4	17.7	16.3	16.7	20.7	15.2	15.6	12.6	16.0	16.3
3	N	157	92	33	61	90	433	136	71	56	51	107	421	168	94	58	46	91	457
	%	12.2	7.0	5.6	6.9	6.3	7.9	10.6	5.1	9.0	5.7	8.1	7.6	12.6	6.8	8.7	5.2	6.8	8.2
4+	N	151	74	48	72	160	505	183	91	42	76	162	554	199	91	63	47	102	502
	%	11.7	5.7	8.2	8.1	11.2	9.2	14.3	6.5	6.8	8.5	12.2	10.0	14.9	6.6	9.5	5.3	7.6	9.0
Number of prescriptions per patient	Number of subjects, specialized IBD hospitals	391	24	120	168	243	946	363	134	154	174	234	1,059	445	196	177	109	278	1,205
	Mean, specialized IBD hospitals	2	3	2	3	3	3	3	2	2	3	3	3	3	2	3	2	2	2
	Median, specialized IBD hospitals	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Number of prescriptions per patient	Number of subjects, non-specialized regional hospitals	468	567	134	245	479	1,893	491	496	133	285	482	1,887	499	454	160	241	408	1,762
	Mean, non-specialized regional hospitals	2	2	2	2	2	2	2	2	2	2	3	2	3	2	2	2	2	2
	Median, non-specialized regional hospitals	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
For patients with 2+ prescriptions	N	905	837	394	594	938	3,668	888	880	418	584	900	3,670	929	843	448	594	857	3,671
Concomitant biological treatment	N	65	94	30	68	57	314	102	127	40	66	103	438	120	126	65	88	135	534
	%	7.2	11.2	7.6	11.4	6.1	8.6	11.5	14.4	9.6	11.3	11.4	11.9	12.9	14.9	14.5	14.8	15.8	14.5
Concomitant immunosuppressive medication (AZA/6-MP/MTX)	N	214	141	72	154	205	786	215	151	80	124	187	757	200	144	78	117	153	692
	%	23.6	16.8	18.3	25.9	21.9	21.4	24.2	17.2	19.1	21.2	20.8	20.6	21.5	17.1	17.4	19.7	17.9	18.9
No concomitant biological or immunosuppressive medication	N	626	602	292	372	676	2,568	571	602	298	394	610	2,475	609	573	305	389	569	2,445
	%	69.2	71.9	74.1	62.6	72.1	70.0	64.3	68.4	71.3	67.5	67.8	67.4	65.6	68.0	68.1	65.5	66.4	66.6
Admitted	N	624	554	220	353	538	2,289	574	561	237	358	523	2,253	660	543	261	391	501	2,356
	%	69.0	66.2	55.8	59.4	57.4	62.4	64.6	63.8	56.7	61.3	58.1	61.4	71.0	64.4	58.3	65.8	58.5	64.2
Outpatients	N	255	244	163	218	364	1,244	288	285	172	197	355	1,297	250	269	178	180	333	1,210
	%	28.2	29.2	41.4	36.7	38.8	33.9	32.4	32.4	41.1	33.7	39.4	35.3	26.9	31.9	39.7	30.3	38.9	33.0
No hospital contact	N	26	39	11	23	36	135	26	34	9	29	22	120	19	31	9	23	23	105
	%	2.9	4.7	2.8	3.9	3.8	3.7	2.9	3.9	2.2	5.0	2.4	3.3	2.0	3.7	2.0	3.9	2.7	2.9
Women	N	473	421	194	299	486	1,873	468	451	202	315	465	1,901	512	448	215	314	428	1,917
	%	52.3	50.3	49.2	50.3	51.8	51.1	52.7	51.3	48.3	53.9	51.7	51.8	55.1	53.1	48.0	52.9	49.9	52.2
Men	N	432	416	200	295	452	1,795	420	429	216	269	435	1,769	417	395	233	280	429	1,754
	%	47.7	49.7	50.8	49.7	48.2	48.9	47.3	48.8	51.7	46.1	48.3	48.2	44.9	46.9	52.0	47.1	50.1	47.8
Age at the beginning of the period	Median	48.4	56.5	56.8	52.7	54.2	53.4	49.2	58.3	55.8	57.5	54.3	54.9	49.8	59.8	59.7	58.2	56.6	56.3

Table 2c: Use of glucocorticoids (including budesonide) in patients with Crohn's disease

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of patients	N	4,169	2,851	1,347	1,994	2,801	13,162	4,509	3,107	1,431	2,235	2,999	14,281	4,777	3,266	1,548	2,396	3,209	15,196
Glucocorticoids																			
No	N	3,449	2,145	1,014	1,513	2,131	10,252	3,793	2,380	1,089	1,744	2,345	11,351	3,980	2,547	1,173	1,908	2,505	12,113
	%	82.7	75.2	75.3	75.9	76.1	77.9	84.1	76.6	76.1	78.0	78.2	79.5	83.3	78.0	75.8	79.6	78.1	79.7
Yes	N	720	706	333	481	670	2,910	716	727	342	491	654	2,930	797	719	375	488	704	3,083
	%	17.3	24.8	24.7	24.1	23.9	22.1	15.9	23.4	23.9	22.0	21.8	20.5	16.7	22.0	24.2	20.4	21.9	20.3
Number of prescriptions																			
0	N	3,449	2,145	1,014	1,513	2,131	10,252	3,793	2,380	1,089	1,744	2,345	11,351	3,980	2,547	1,173	1,908	2,505	12,113
	%	82.7	75.2	75.3	75.9	76.1	77.9	84.1	76.6	76.1	78.0	78.2	79.5	83.3	78.0	75.8	79.6	78.1	79.7
1	N	210	224	97	145	204	880	211	220	88	156	194	869	238	231	116	168	218	971
	%	5.0	7.9	7.2	7.3	7.3	6.7	4.7	7.1	6.1	7.0	6.5	6.1	5.0	7.1	7.5	7.0	6.8	6.4
2	N	185	151	63	115	146	660	182	160	84	130	126	682	205	162	89	105	135	696
	%	4.4	5.3	4.7	5.8	5.2	5.0	4.0	5.1	5.9	5.8	4.2	4.8	4.3	5.0	5.7	4.4	4.2	4.6
3	N	106	91	43	62	82	384	90	108	46	63	94	401	120	95	62	87	103	467
	%	2.5	3.2	3.2	3.1	2.9	2.9	2.0	3.5	3.2	2.8	3.1	2.8	2.5	2.9	4.0	3.6	3.2	3.1
4+	N	219	240	130	159	238	986	233	239	124	142	240	978	234	231	108	128	248	949
	%	5.3	8.4	9.7	8.0	8.5	7.5	5.2	7.7	8.7	6.4	8.0	6.8	4.9	7.1	7.0	5.3	7.7	6.2

			2009–10						2011–12						2013–14					
			Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of pills among subjects with prescriptions		Mean	287	320	348	305	351	320	287	339	352	276	346	319	276	339	321	253	344	308
		Median	200	200	202	200	201	200	200	200	200	200	200	200	200	200	200	200	210	200
Overall	**Cumulative dosages**	Number of subjects	720	706	333	481	670	2,910	716	727	342	491	654	2,930	797	719	375	488	704	3,083
		Mean	2,051	2,345	2,339	2,460	2,253	2,269	2,077	2,385	2,322	2,261	2,247	2,251	2,146	2,365	2,419	1,990	2,221	2,223
		Lowest quartile	450	330	360	450	500	450	500	300	500	300	450	450	500	300	330	300	500	450
		Middle quartile	1,000	1,500	1,500	1,250	1,500	1,378	1,200	1,500	1,200	1,000	1,500	1,250	1,200	1,410	1,080	1,000	1,500	1,200
		Highest quartile	3,000	3,500	3,500	3,500	3,300	3,500	3,000	3,500	3,500	3,000	3,250	3,300	3,100	3,500	3,500	3,000	3,500	3,300
Admitted	**Cumulative dosages**	Number of subjects	492	446	194	311	404	1,847	475	454	184	309	420	1,842	512	448	204	314	420	1,898
		Mean	2,252	2,672	2,642	2,676	2,756	2,576	2,327	2,789	2,875	2,670	2,647	2,626	2,506	2,784	2,796	2,351	2,424	2,559
		Lowest quartile	500	500	500	500	638	500	500	500	600	500	600	500	500	500	500	500	500	500
		Middle quartile	1,475	2,250	2,050	1,750	2,200	2,000	1,500	2,500	2,100	1,500	2,000	1,950	1,588	2,500	1,750	1,500	1,750	1,800
		Highest quartile	3,413	3,625	3,600	3,800	3,503	3,500	3,375	3,500	4,000	3,500	3,625	3,500	3,500	3,500	3,754	3,500	3,500	3,500
Outpatients	**Cumulative dosages**	Number of subjects	201	239	129	153	240	962	212	253	145	155	219	984	257	256	165	153	269	1,100
		Mean	1,777	1,845	2,015	2,178	1,558	1,835	1,693	1,780	1,800	1,654	1,565	1,697	1,600	1,676	2,003	1,447	1,946	1,741
		Lowest quartile	300	250	150	300	250	300	300	250	250	264	250	250	500	250	250	250	300	254
		Middle quartile	900	1,000	750	1,000	750	900	750	900	900	600	600	750	800	600	780	600	1,000	750
		Highest quartile	2,700	2,970	3,000	3,000	2,400	2,700	2,475	3,000	3,000	1,800	2,100	2,500	2,400	2,725	3,000	1,500	3,000	2,600
No hospital contact	**Cumulative dosages**	Number of subjects	27	21	10	17	26	101	29	20	13	27	15	104	28	15	6	21	15	85
		Mean	423	1,076	659	1,053	849	798	788	877	321	1,070	989	849	572	1,608	1,061	531	1,477	939
		Lowest quartile	80	20	40	21	14	28	80	14	80	80	80	56	80	28	500	28	250	61
		Middle quartile	160	125	188	80	205	125	500	153	160	250	500	250	250	80	1,053	150	625	250
		Highest quartile	400	1,480	1,750	500	1,000	750	600	625	500	750	1,250	750	390	1,250	1,500	510	2,400	625
Prescription origin																				
Primary sector		N	253	296	163	206	232	1,150	230	313	157	210	233	1,143	244	261	171	284	268	1,228

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
	%	35.1	41.9	48.9	42.8	34.6	39.5	32.1	43.1	45.9	42.8	35.6	39.0	30.6	36.3	45.6	58.2	38.1	39.8
Hospital	N	467	410	170	275	438	1,760	486	414	185	281	421	1,787	553	458	204	204	436	1,855
	%	64.9	58.1	51.1	57.2	65.4	60.5	67.9	56.9	54.1	57.2	64.4	61.0	69.4	63.7	54.4	41.8	61.9	60.2
Prescriptions from hospitals																			
0	N	253	296	163	206	232	1,150	230	313	157	210	233	1,143	244	261	171	284	268	1,228
	%	35.1	41.9	48.9	42.8	34.6	39.5	32.1	43.1	45.9	42.8	35.6	39.0	30.6	36.3	45.6	58.2	38.1	39.8
1	N	132	153	62	106	151	604	150	156	62	106	132	606	165	169	70	87	149	640
	%	18.3	21.7	18.6	22.0	22.5	20.8	20.9	21.5	18.1	21.6	20.2	20.7	20.7	23.5	18.7	17.8	21.2	20.8
2	N	152	123	54	89	128	546	149	105	54	87	116	511	159	135	62	61	113	530
	%	21.1	17.4	16.2	18.5	19.1	18.8	20.8	14.4	15.8	17.7	17.7	17.4	19.9	18.8	16.5	12.5	16.1	17.2
3	N	84	56	23	41	56	260	62	67	32	31	62	254	104	65	33	28	72	302
	%	11.7	7.9	6.9	8.5	8.4	8.9	8.7	9.2	9.4	6.3	9.5	8.7	13.0	9.0	8.8	5.7	10.2	9.8
4+	N	99	78	31	39	103	350	125	86	37	57	111	416	125	89	39	28	102	383
	%	13.8	11.0	9.3	8.1	15.4	12.0	17.5	11.8	10.8	11.6	17.0	14.2	15.7	12.4	10.4	5.7	14.5	12.4
Number of prescriptions per patient	Number of subjects, specialized IBD hospitals	258	14	106	143	158	679	250	72	124	120	177	743	312	138	131	86	244	911
	Mean, specialized IBD hospitals	3	2	2	2	3	3	3	2	2	2	3	3	3	2	2	2	3	3
	Median, specialized IBD hospitals	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2
Number of prescriptions per patient	Number of subjects, non-specialized regional hospitals	233	399	65	142	286	1,125	257	368	66	174	255	1,120	254	333	77	125	213	1,002
	Mean, non-specialized regional hospitals	3	2	2	2	2	2	3	2	3	2	3	3	3	2	2	2	2	2
	Median, non-specialized regional hospitals	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
For patients with 2+ prescriptions	N	510	482	236	336	466	2,030	505	507	254	335	460	2,061	559	488	259	320	486	2,112
Concomitant biological treatment	N	64	90	56	66	83	359	75	104	49	74	96	398	94	109	50	82	109	444
	%	12.5	18.7	23.7	19.6	17.8	17.7	14.9	20.5	19.3	22.1	20.9	19.3	16.8	22.3	19.3	25.6	22.4	21.0
Concomitant immunosuppressive medication (AZA/6-MP/MTX)	N	172	153	61	109	146	641	169	154	73	95	117	608	156	155	67	70	133	581
	%	33.7	31.7	25.8	32.4	31.3	31.6	33.5	30.4	28.7	28.4	25.4	29.5	27.9	31.8	25.9	21.9	27.4	27.5
No concomitant biological or immunosuppressive medication	N	274	239	119	161	237	1,030	261	249	132	166	247	1,055	309	224	142	168	244	1,087
	%	53.7	49.6	50.4	47.9	50.9	50.7	51.7	49.1	52.0	49.6	53.7	51.2	55.3	45.9	54.8	52.5	50.2	51.5
Admitted	N	357	312	151	226	315	1,361	353	327	145	218	311	1,354	375	324	147	217	296	1,359
	%	70.0	64.7	64.0	67.3	67.6	67.0	69.9	64.5	57.1	65.1	67.6	65.7	67.1	66.4	56.8	67.8	60.9	64.3
Outpatients	N	142	160	80	101	142	625	139	168	101	105	141	654	175	154	107	94	182	712
	%	27.8	33.2	33.9	30.1	30.5	30.8	27.5	33.1	39.8	31.3	30.7	31.7	31.3	31.6	41.3	29.4	37.4	33.7
No hospital contact	N	11	10	5	9	9	44	13	12	8	12	8	53	9	10	5	9	8	41
	%	2.2	2.1	2.1	2.7	1.9	2.2	2.6	2.4	3.1	3.6	1.7	2.6	1.6	2.0	1.9	2.8	1.6	1.9
Women	N	293	289	142	203	303	1,230	287	301	147	207	277	1,219	324	277	145	201	294	1,241
	%	57.5	60.0	60.2	60.4	65.0	60.6	56.8	59.4	57.9	61.8	60.2	59.1	58.0	56.8	56.0	62.8	60.5	58.8
Men	N	217	193	94	133	163	800	218	206	107	128	183	842	235	211	114	119	192	871
	%	42.5	40.0	39.8	39.6	35.0	39.4	43.2	40.6	42.1	38.2	39.8	40.9	42.0	43.2	44.0	37.2	39.5	41.2
Age at the beginning of the period	Median	42.7	45.6	46.2	46.2	45.4	45.0	45.8	47.6	45.8	48.1	44.7	46.3	46.7	48.3	48.3	50.1	49.6	48.3

Table 2d: Use of oral glucocorticoids (prednisone and prednisolone) in patients with Crohn's disease

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of patients	N	4,169	2,851	1,347	1,994	2,801	13,162	4,509	3,107	1,431	2,235	2,999	14,281	4,777	3,266	1,548	2,396	3,209	15,196
Glucocorticoids																			
No	N	3,621	2,306	1,069	1,617	2,248	10,861	3,966	2,534	1,160	1,853	2,479	11,992	4,150	2,727	1,247	2,029	2,657	12,810
	%	86.9	80.9	79.4	81.1	80.3	82.5	88.0	81.6	81.1	82.9	82.7	84.0	86.9	83.5	80.6	84.7	82.8	84.3
Yes	N	548	545	278	377	553	2,301	543	573	271	382	520	2,289	627	539	301	367	552	2,386
	%	13.1	19.1	20.6	18.9	19.7	17.5	12.0	18.4	18.9	17.1	17.3	16.0	13.1	16.5	19.4	15.3	17.2	15.7
Number of prescriptions																			
0	N	3,621	2,306	1,069	1,617	2,248	10,861	3,966	2,534	1,160	1,853	2,479	11,992	4,150	2,727	1,247	2,029	2,657	12,810
	%	86.9	80.9	79.4	81.1	80.3	82.5	88.0	81.6	81.1	82.9	82.7	84.0	86.9	83.5	80.6	84.7	82.8	84.3
1	N	181	194	92	121	193	781	178	210	81	139	177	785	221	189	97	144	202	853
	%	4.3	6.8	6.8	6.1	6.9	5.9	3.9	6.8	5.7	6.2	5.9	5.5	4.6	5.8	6.3	6.0	6.3	5.6
2	N	145	120	57	95	133	550	145	126	74	101	111	557	153	130	70	81	119	553
	%	3.5	4.2	4.2	4.8	4.7	4.2	3.2	4.1	5.2	4.5	3.7	3.9	3.2	4.0	4.5	3.4	3.7	3.6
3	N	78	74	37	48	74	311	72	91	42	48	85	338	100	80	59	61	79	379
	%	1.9	2.6	2.7	2.4	2.6	2.4	1.6	2.9	2.9	2.1	2.8	2.4	2.1	2.4	3.8	2.5	2.5	2.5
4+	N	144	157	92	113	153	659	148	146	74	94	147	609	153	140	75	81	152	601
	%	3.5	5.5	6.8	5.7	5.5	5.0	3.3	4.7	5.2	4.2	4.9	4.3	3.2	4.3	4.8	3.4	4.7	4.0

			2009–10						2011–12						2013–14					
			Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of pills among subjects with prescriptions		Mean	246	267	306	264	289	272	248	274	297	229	286	266	241	292	289	219	266	261
		Median	200	200	200	200	200	200	200	120	200	110	200	200	200	150	200	100	200	200
Overall	**Cumulative dosages**	Number of subjects	548	545	278	377	553	2,301	543	573	271	382	520	2,289	627	539	301	367	552	2,386
		Mean	2,301	2,593	2,469	2,764	2,319	2,471	2,348	2,555	2,490	2,530	2,381	2,455	2,400	2,678	2,679	2,294	2,314	2,462
		Lowest quartile	250	250	250	375	500	250	500	250	250	250	330	250	500	250	375	250	438	278
		Middle quartile	1,688	2,500	1,938	1,750	1,500	1,875	1,625	2,500	1,500	1,500	1,500	1,750	1,500	2,500	1,750	1,375	1,588	1,750
		Highest quartile	3,500	3,500	3,500	3,750	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
Admitted	**Cumulative dosages**	Number of subjects	386	357	165	254	349	1,511	362	368	143	257	348	1,478	423	347	162	248	345	1,525
		Mean	2,529	2,951	2,765	2,983	2,867	2,809	2,648	2,981	3,182	2,905	2,806	2,864	2,766	3,134	3,123	2,712	2,471	2,812
		Lowest quartile	500	500	500	500	750	500	500	500	750	500	507	500	500	500	500	500	500	500
		Middle quartile	2,438	2,500	2,500	2,500	2,500	2,500	2,500	2,500	3,000	2,500	2,500	2,500	2,500	2,625	2,500	2,500	2,000	2,500
		Highest quartile	3,500	4,000	3,507	4,000	3,500	3,750	3,500	3,500	4,500	3,500	3,500	3,500	3,500	3,625	4,000	3,660	3,500	3,500
Outpatients	**Cumulative dosages**	Number of subjects	136	169	104	107	181	697	154	186	116	98	159	713	178	178	134	101	196	787
		Mean	2,013	2,009	2,167	2,520	1,494	1,978	1,940	1,881	1,864	1,950	1,570	1,831	1,819	1,883	2,212	1,588	2,100	1,941
		Lowest quartile	250	80	80	250	250	250	250	125	84	125	160	160	250	80	250	125	250	250
		Middle quartile	1,375	1,000	1,000	1,000	750	1,000	1,000	1,000	875	500	500	750	750	500	1,000	500	1,438	750
		Highest quartile	3,000	3,000	3,004	3,000	2,230	3,000	3,000	3,000	3,500	3,000	2,500	3,000	3,000	3,007	3,000	2,000	3,000	3,000
No hospital contact	**Cumulative dosages**	Number of subjects	26	19	9	16	23	93	27	19	12	27	13	98	26	14	5	18	11	74
		Mean	425	1,059	533	924	505	671	666	920	285	1,070	924	814	424	1,483	853	499	1,174	783
		Lowest quartile	80	20	40	19	14	28	40	14	58	80	80	54	80	28	500	20	125	40
		Middle quartile	143	125	125	80	160	125	250	250	143	250	500	250	250	80	605	40	500	250
		Highest quartile	400	1,480	500	500	250	500	500	750	375	750	1,000	580	290	257	1,500	500	2,000	500
Prescription origin																				
Primary sector		N	236	258	150	193	221	1,058	213	297	139	197	220	1,066	230	248	149	239	248	1,114

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
	%	43.1	47.3	54.0	51.2	40.0	46.0	39.2	51.8	51.3	51.6	42.3	46.6	36.7	46.0	49.5	65.1	44.9	46.7
Hospital	N	312	287	128	184	332	1,243	330	276	132	185	300	1,223	397	291	152	128	304	1,272
	%	56.9	52.7	46.0	48.8	60.0	54.0	60.8	48.2	48.7	48.4	57.7	53.4	63.3	54.0	50.5	34.9	55.1	53.3
Prescriptions from hospitals																			
0	N	236	258	150	193	221	1,058	213	297	139	197	220	1,066	230	248	149	239	248	1,114
	%	43.1	47.3	54.0	51.2	40.0	46.0	39.2	51.8	51.3	51.6	42.3	46.6	36.7	46.0	49.5	65.1	44.9	46.7
1	N	85	111	41	69	131	437	104	101	42	69	99	415	135	103	46	56	116	456
	%	15.5	20.4	14.7	18.3	23.7	19.0	19.2	17.6	15.5	18.1	19.0	18.1	21.5	19.1	15.3	15.3	21.0	19.1
2	N	114	102	47	57	102	422	111	81	47	61	103	403	112	108	49	43	81	393
	%	20.8	18.7	16.9	15.1	18.4	18.3	20.4	14.1	17.3	16.0	19.8	17.6	17.9	20.0	16.3	11.7	14.7	16.5
3	N	51	40	19	31	49	190	48	54	24	27	45	198	82	35	31	14	59	221
	%	9.3	7.3	6.8	8.2	8.9	8.3	8.8	9.4	8.9	7.1	8.7	8.7	13.1	6.5	10.3	3.8	10.7	9.3
4+	N	62	34	21	27	50	194	67	40	19	28	53	207	68	45	26	15	48	202
	%	11.3	6.2	7.6	7.2	9.0	8.4	12.3	7.0	7.0	7.3	10.2	9.0	10.8	8.3	8.6	4.1	8.7	8.5
Number of prescriptions per patient	Number of subjects, specialized IBD hospitals	168	11	76	96	111	462	155	52	88	73	126	494	209	88	95	49	160	601
	Mean, specialized IBD hospitals	3	2	2	2	2	2	2	2	2	2	3	2	2	2	3	2	2	2
	Median, specialized IBD hospitals	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Number of prescriptions per patient	Number of subjects, non-specialized regional hospitals	165	278	53	97	226	819	191	242	49	119	182	783	199	210	60	80	155	704
	Mean, non-specialized regional hospitals	3	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2
	Median, non-specialized regional hospitals	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	1	2

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
For patients with 2+ prescriptions	N	367	351	186	256	360	1,520	365	363	190	243	343	1,504	406	350	204	223	350	1,533
Concomitant biological treatment	N	53	66	48	56	70	293	62	80	38	55	88	323	73	86	43	55	86	343
	%	14.4	18.8	25.8	21.9	19.4	19.3	17.0	22.0	20.0	22.6	25.7	21.5	18.0	24.6	21.1	24.7	24.6	22.4
Concomitant immunosuppressive medication (AZA/6-MP/MTX)	N	128	116	53	83	118	498	122	112	59	70	82	445	109	107	59	50	99	424
	%	34.9	33.0	28.5	32.4	32.8	32.8	33.4	30.9	31.1	28.8	23.9	29.6	26.8	30.6	28.9	22.4	28.3	27.7
No concomitant biological or immunosuppressive medication	N	186	169	85	117	172	729	181	171	93	118	173	736	224	157	102	118	165	766
	%	50.7	48.1	45.7	45.7	47.8	48.0	49.6	47.1	48.9	48.6	50.4	48.9	55.2	44.9	50.0	52.9	47.1	50.0
Admitted	N	268	240	123	182	262	1,075	262	247	108	171	248	1,036	298	243	116	167	229	1,053
	%	73.0	68.4	66.1	71.1	72.8	70.7	71.8	68.0	56.8	70.4	72.3	68.9	73.4	69.4	56.9	74.9	65.4	68.7
Outpatients	N	88	102	59	66	92	407	92	105	75	60	89	421	101	98	84	49	116	448
	%	24.0	29.1	31.7	25.8	25.6	26.8	25.2	28.9	39.5	24.7	25.9	28.0	24.9	28.0	41.2	22.0	33.1	29.2
No hospital contact	N	11	9	4	8	6	38	11	11	7	12	6	47	7	9	4	7	5	32
	%	3.0	2.6	2.2	3.1	1.7	2.5	3.0	3.0	3.7	4.9	1.7	3.1	1.7	2.6	2.0	3.1	1.4	2.1
Women	N	199	208	106	152	228	893	195	213	109	150	200	867	228	189	117	141	209	884
	%	54.2	59.3	57.0	59.4	63.3	58.8	53.4	58.7	57.4	61.7	58.3	57.6	56.2	54.0	57.4	63.2	59.7	57.7
Men	N	168	143	80	104	132	627	170	150	81	93	143	637	178	161	87	82	141	649
	%	45.8	40.7	43.0	40.6	36.7	41.3	46.6	41.3	42.6	38.3	41.7	42.4	43.8	46.0	42.6	36.8	40.3	42.3
Age at the beginning of the period	Median	43.5	45.8	46.2	46.3	47.0	45.7	45.9	47.9	45.8	49.1	44.2	46.8	47.0	48.2	48.0	52.2	49.8	49.0

Table 3a: Prevalent use of biological therapy in patients with ulcerative colitis

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of patients	N	7,989	7,628	3,293	4,561	7,414	30,885	8,518	8,158	3,611	4,885	8,033	33,205	9,074	8,470	3,864	5,154	8,389	34,951
Biological therapy																			
No	N	7,853	7,437	3,234	4,450	7,293	30,267	8,311	7,898	3,528	4,744	7,847	32,328	8,778	8,143	3,751	4,972	8,105	33,749
	%	98.3	97.5	98.2	97.6	98.4	98.0	97.6	96.8	97.7	97.1	97.7	97.4	96.7	96.1	97.1	96.5	96.6	96.6
Yes	N	136	191	59	111	121	618	207	260	83	141	186	877	296	327	113	182	284	1,202
	%	1.7	2.5	1.8	2.4	1.6	2.0	2.4	3.2	2.3	2.9	2.3	2.6	3.3	3.9	2.9	3.5	3.4	3.4
Among those with treatment																			
Continuous treatment	N	96	153	50	92	105	496	165	217	73	122	168	745	248	302	102	150	257	1,059
	%	70.6	80.1	84.7	82.9	86.8	80.3	79.7	83.5	88.0	86.5	90.3	84.9	83.8	92.4	90.3	82.4	90.5	88.1
Episodic treatment (one/two infliximab infusions)	N	36	33	9	10	10	98	30	38	9	14	8	99	34	17	7	22	24	104
	%	26.5	17.3	15.3	9.0	8.3	15.9	14.5	14.6	10.8	9.9	4.3	11.3	11.5	5.2	6.2	12.1	8.5	8.7
Continuous and episodic treatment	N	4	5	0	9	6	24	12	5	1	5	10	33	14	8	4	10	3	39
	%	2.9	2.6	0	8.1	5.0	3.9	5.8	1.9	1.2	3.5	5.4	3.8	4.7	2.4	3.5	5.5	1.1	3.2
Type of biological therapy																			
Infliximab	N	111	149	45	78	88	471	145	189	66	90	130	620	184	212	98	119	208	821
	%	81.6	78.0	76.3	70.3	72.7	76.2	70.0	72.7	79.5	63.8	69.9	70.7	62.2	64.8	86.7	65.4	73.2	68.3
Adalimumab	N	18	29	7	20	25	99	28	38	13	24	34	137	53	50	12	36	41	192
	%	13.2	15.2	11.9	18.0	20.7	16.0	13.5	14.6	15.7	17.0	18.3	15.6	17.9	15.3	10.6	19.8	14.4	16.0
Golimumab	N	0	0	0	0	2	2	2	5	1	4	0	12	13	21	1	5	7	47
	%	0	0	0	0	1.7	0.3	1.0	1.9	1.2	2.8	0	1.4	4.4	6.4	0.9	2.7	2.5	3.9
Infliximab and Adalimumab	N	7	13	7	13	6	46	32	27	3	22	21	105	37	27	1	18	12	95
	%	5.1	6.8	11.9	11.7	5.0	7.4	15.5	10.4	3.6	15.6	11.3	12.0	12.5	8.3	0.9	9.9	4.2	7.9
Infliximab and Golimumab	N	0	0	0	0	0	0	0	0	0	0	0	0	6	9	1	2	10	28
	%	0	0	0	0	0	0	0	0	0	0	0	0	2.0	2.8	0.9	1.1	3.5	2.3

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Adalimumab and Golimumab	N	0	0	0	0	0	0	0	1	0	1	1	3	3	4	0	1	5	13
	%	0	0	0	0	0	0	0	0.4	0	0.7	0.5	0.3	1.0	1.2	0	0.5	1.8	1.1
Infliximab, Adalimumab, and Golimumab	N	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	1	6
	%	0	0	0	0	0	0	0	0	0	0	0	0	0	1.2	0	0.5	0.4	0.5
Age at IBD diagnosis	Median (years)	31.2	33.1	31.3	36.5	32.4	32.8	30.6	30.9	30.2	36.5	33.4	32.0	31.8	31.7	29.8	36.2	32.6	32.5
Age at inclusion	Median (years)	35.9	39.9	40.7	43.2	40.3	39.8	36.4	37.8	38.8	45.8	40.5	39.4	39.0	39.1	40.2	46.1	40.8	40.7
Treated within 12 months with																			
No treatment	N	35	57	9	24	26	151	56	71	15	29	45	216	98	94	32	51	76	351
	%	25.7	29.8	15.3	21.6	21.5	24.4	27.1	27.3	18.1	20.6	24.2	24.6	33.1	28.7	28.3	28.0	26.8	29.2
Glucocorticoids	N	40	52	13	30	25	160	66	71	32	44	39	252	78	78	36	58	74	324
	%	29.4	27.2	22.0	27.0	20.7	25.9	31.9	27.3	38.6	31.2	21.0	28.7	26.4	23.9	31.9	31.9	26.1	27.0
Immunosuppressive medication (AZA/6-MP/MTX)	N	19	24	15	12	19	89	26	36	12	21	23	118	40	56	19	24	32	171
	%	14.0	12.6	25.4	10.8	15.7	14.4	12.6	13.8	14.5	14.9	12.4	13.5	13.5	17.1	16.8	13.2	11.3	14.2
Combination	N	42	58	22	45	51	218	59	82	24	47	79	291	80	99	26	49	102	356
	%	30.9	30.4	37.3	40.5	42.1	35.3	28.5	31.5	28.9	33.3	42.5	33.2	27.0	30.3	23.0	26.9	35.9	29.6
Treated within 12 months with																			
No treatment	N	35	57	9	24	26	151	56	71	15	29	45	216	98	94	32	51	76	351
	%	25.7	29.8	15.3	21.6	21.5	24.4	27.1	27.3	18.1	20.6	24.2	24.6	33.1	28.7	28.3	28.0	26.8	29.2
Budesonid	N	2	3	1	7	0	13	9	13	8	6	5	41	8	23	5	11	6	53
	%	1.5	1.6	1.7	6.3	0	2.1	4.3	5.0	9.6	4.3	2.7	4.7	2.7	7.0	4.4	6.0	2.1	4.4
Glucocorticoids without Budesonide	N	38	49	12	23	25	147	57	58	24	38	34	211	70	55	31	47	68	271
	%	27.9	25.7	20.3	20.7	20.7	23.8	27.5	22.3	28.9	27.0	18.3	24.1	23.6	16.8	27.4	25.8	23.9	22.5
Immunosuppressive medication (AZA/6-	N	19	24	15	12	19	89	26	36	12	21	23	118	40	56	19	24	32	171

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
MP/MTX)	%	14.0	12.6	25.4	10.8	15.7	14.4	12.6	13.8	14.5	14.9	12.4	13.5	13.5	17.1	16.8	13.2	11.3	14.2
Combination	N	42	58	22	45	51	218	59	82	24	47	79	291	80	99	26	49	102	356
	%	30.9	30.4	37.3	40.5	42.1	35.3	28.5	31.5	28.9	33.3	42.5	33.2	27.0	30.3	23.0	26.9	35.9	29.6
Comorbidity																			
No (CCI=0)	N	107	155	39	76	85	462	164	202	54	96	134	650	225	245	79	131	199	879
	%	78.7	81.2	66.1	68.5	70.2	74.8	79.2	77.7	65.1	68.1	72.0	74.1	76.0	74.9	69.9	72.0	70.1	73.1
Moderate (CCI=1–2)	N	23	27	15	30	28	123	33	50	23	41	45	192	59	71	28	44	75	277
	%	16.9	14.1	25.4	27.0	23.1	19.9	15.9	19.2	27.7	29.1	24.2	21.9	19.9	21.7	24.8	24.2	26.4	23.0
High (CCI=3+)	N	6	9	5	5	8	33	10	8	6	4	7	35	12	11	6	7	10	46
	%	4.4	4.7	8.5	4.5	6.6	5.3	4.8	3.1	7.2	2.8	3.8	4.0	4.1	3.4	5.3	3.8	3.5	3.8

Table 3b: Prevalent use of biological therapy in patients with Crohn's disease

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of patients	N	4,169	2,851	1,347	1,994	2,801	13,162	4,509	3,107	1,431	2,235	2,999	14,281	4,777	3,266	1,548	2,396	3,209	15,196
Biological therapy																			
No	N	3,912	2,544	1,186	1,826	2,587	12,055	4,175	2,690	1,255	2,016	2,729	12,865	4,369	2,784	1,359	2,134	2,886	13,532
	%	93.8	89.2	88.0	91.6	92.4	91.6	92.6	86.6	87.7	90.2	91.0	90.1	91.5	85.2	87.8	89.1	89.9	89.0
Yes	N	257	307	161	168	214	1,107	334	417	176	219	270	1,416	408	482	189	262	323	1,664
	%	6.2	10.8	12.0	8.4	7.6	8.4	7.4	13.4	12.3	9.8	9.0	9.9	8.5	14.8	12.2	10.9	10.1	11.0
Among those with treatment																			
Continuous treatment	N	203	282	148	141	196	970	282	383	165	186	242	1,258	346	460	175	235	296	1,512
	%	79.0	91.9	91.9	83.9	91.6	87.6	84.4	91.8	93.8	84.9	89.6	88.8	84.8	95.4	92.6	89.7	91.6	90.9
Episodic treatment (one/two infliximab infusions)	N	20	4	5	6	2	37	16	9	5	14	10	54	18	6	6	12	5	47
	%	7.8	1.3	3.1	3.6	0.9	3.3	4.8	2.2	2.8	6.4	3.7	3.8	4.4	1.2	3.2	4.6	1.5	2.8
Continuous and episodic treatment	N	34	21	8	21	16	100	36	25	6	19	18	104	44	16	8	15	22	105
	%	13.2	6.8	5.0	12.5	7.5	9.0	10.8	6.0	3.4	8.7	6.7	7.3	10.8	3.3	4.2	5.7	6.8	6.3
Type of biological therapy																			
Infliximab	N	198	121	109	105	107	640	215	180	113	118	153	779	242	230	129	163	187	951
	%	77.0	39.4	67.7	62.5	50.0	57.8	64.4	43.2	64.2	53.9	56.7	55.0	59.3	47.7	68.3	62.2	57.9	57.2
Adalimumab	N	31	123	22	26	68	270	79	164	42	55	76	416	103	191	39	62	84	479
	%	12.1	40.1	13.7	15.5	31.8	24.4	23.7	39.3	23.9	25.1	28.1	29.4	25.2	39.6	20.6	23.7	26.0	28.8
Golimumab	N	0	0	0	0	0	0	0	3	0	1	0	4	7	0	1	1	3	12
	%	0	0	0	0	0	0	0	0.7	0	0.5	0	0.3	1.7	0	0.5	0.4	0.9	0.7
Infliximab and Adalimumab	N	28	63	30	36	39	196	38	69	20	42	41	210	48	55	18	33	48	202
	%	10.9	20.5	18.6	21.4	18.2	17.7	11.4	16.5	11.4	19.2	15.2	14.8	11.8	11.4	9.5	12.6	14.9	12.1
Infliximab and Golimumab	N	0	0	0	0	0	0	0	0	1	1	0	2	1	1	1	0	0	3
	%	0	0	0	0	0	0	0	0	0.6	0.5	0	0.1	0.2	0.2	0.5	0	0	0.2

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Adalimumab and Golimumab	N	0	0	0	1	0	1	1	0	0	1	0	2	4	4	1	3	1	13
	%	0	0	0	0.6	0	0.1	0.3	0	0	0.5	0	0.1	1.0	0.8	0.5	1.1	0.3	0.8
Infliximab, Adalimumab, and Golimumab	N	0	0	0	0	0	0	1	1	0	1	0	3	3	1	0	0	0	4
	%	0	0	0	0	0	0	0.3	0.2	0	0.5	0	0.2	0.7	0.2	0	0	0	0.2
Age at IBD diagnosis	Median (years)	24.1	25.6	25.5	29.1	24.6	25.4	25.1	25.6	26.3	28.6	26.2	26.0	26.2	26.8	25.1	29.7	26.5	26.7
Age at inclusion	Median (years)	32.3	32.6	32.1	38.3	34.6	33.4	34.3	33.4	34.1	39.8	36.3	35.2	35.0	35.2	35.1	42.4	36.6	36.5
Treated within 12 months with																			
No treatment	N	92	86	41	51	55	325	166	158	56	84	83	547	189	199	69	128	129	714
	%	35.8	28.0	25.5	30.4	25.7	29.4	49.7	37.9	31.8	38.4	30.7	38.6	46.3	41.3	36.5	48.9	39.9	42.9
Glucocorticoids	N	32	45	37	35	25	174	36	58	34	36	44	208	45	50	35	44	57	231
	%	12.5	14.7	23.0	20.8	11.7	15.7	10.8	13.9	19.3	16.4	16.3	14.7	11.0	10.4	18.5	16.8	17.6	13.9
Immunosuppressive medication (AZA/6-MP/MTX)	N	68	79	46	35	69	297	76	119	50	46	66	357	104	129	56	44	65	398
	%	26.5	25.7	28.6	20.8	32.2	26.8	22.8	28.5	28.4	21.0	24.4	25.2	25.5	26.8	29.6	16.8	20.1	23.9
Combination	N	65	97	37	47	65	311	56	82	36	53	77	304	70	104	29	46	72	321
	%	25.3	31.6	23.0	28.0	30.4	28.1	16.8	19.7	20.5	24.2	28.5	21.5	17.2	21.6	15.3	17.6	22.3	19.3
Treated within 12 months with																			
No treatment	N	92	86	41	51	55	325	166	158	56	84	83	547	189	199	69	128	129	714
	%	35.8	28.0	25.5	30.4	25.7	29.4	49.7	37.9	31.8	38.4	30.7	38.6	46.3	41.3	36.5	48.9	39.9	42.9
Budesonide	N	10	17	12	15	7	61	11	19	14	13	14	71	13	18	5	19	17	72
	%	3.9	5.5	7.5	8.9	3.3	5.5	3.3	4.6	8.0	5.9	5.2	5.0	3.2	3.7	2.6	7.3	5.3	4.3
Glucocorticoids without Budesonide	N	22	28	25	20	18	113	25	39	20	23	30	137	32	32	30	25	40	159
	%	8.6	9.1	15.5	11.9	8.4	10.2	7.5	9.4	11.4	10.5	11.1	9.7	7.8	6.6	15.9	9.5	12.4	9.6
Immunosuppressive medication (AZA/6-	N	68	79	46	35	69	297	76	119	50	46	66	357	104	129	56	44	65	398

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
MP/MTX)	%	26.5	25.7	28.6	20.8	32.2	26.8	22.8	28.5	28.4	21.0	24.4	25.2	25.5	26.8	29.6	16.8	20.1	23.9
Combination	N	65	97	37	47	65	311	56	82	36	53	77	304	70	104	29	46	72	321
	%	25.3	31.6	23.0	28.0	30.4	28.1	16.8	19.7	20.5	24.2	28.5	21.5	17.2	21.6	15.3	17.6	22.3	19.3
Comorbidity																			
No (CCI=0)	N	191	252	117	118	177	855	249	330	128	155	209	1,071	300	363	139	186	240	1,228
	%	74.3	82.1	72.7	70.2	82.7	77.2	74.6	79.1	72.7	70.8	77.4	75.6	73.5	75.3	73.5	71.0	74.3	73.8
Moderate (CCI=1–2)	N	64	48	41	45	35	233	78	79	42	57	56	312	98	107	45	65	75	390
	%	24.9	15.6	25.5	26.8	16.4	21.0	23.4	18.9	23.9	26.0	20.7	22.0	24.0	22.2	23.8	24.8	23.2	23.4
High (CCI=3+)	N	2	7	3	5	2	19	7	8	6	7	5	33	10	12	5	11	8	46
	%	0.8	2.3	1.9	3.0	0.9	1.7	2.1	1.9	3.4	3.2	1.9	2.3	2.5	2.5	2.6	4.2	2.5	2.8

Table 3c: Incident use of biological therapy in patients with ulcerative colitis

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of patients	N	104	148	37	86	80	455	131	166	50	89	111	547	157	182	61	91	150	641
Among those with treatment																			
Continuous treatment	N	67	114	32	72	68	353	97	130	41	74	96	438	118	152	54	71	119	514
	%	64.4	77.0	86.5	83.7	85.0	77.6	74.0	78.3	82.0	83.1	86.5	80.1	75.2	83.5	88.5	78.0	79.3	80.2
Episodic treatment	N	34	31	5	9	9	88	25	33	8	12	7	85	33	24	7	16	28	108
	%	32.7	20.9	13.5	10.5	11.3	19.3	19.1	19.9	16.0	13.5	6.3	15.5	21.0	13.2	11.5	17.6	18.7	16.8
Continuous and episodic treatment	N	3	3	0	5	3	14	9	3	1	3	8	24	6	6	0	4	3	19
	%	2.9	2.0	0	5.8	3.8	3.1	6.9	1.8	2.0	3.4	7.2	4.4	3.8	3.3	0	4.4	2.0	3.0
Infliximab																			
No	N	12	22	3	10	13	60	13	19	6	11	13	62	28	26	3	10	13	80
	%	11.5	14.9	8.1	11.6	16.3	13.2	9.9	11.4	12.0	12.4	11.7	11.3	17.8	14.3	4.9	11.0	8.7	12.5
Yes	N	92	126	34	76	67	395	118	147	44	78	98	485	129	156	58	81	137	561
	%	88.5	85.1	91.9	88.4	83.8	86.8	90.1	88.6	88.0	87.6	88.3	88.7	82.2	85.7	95.1	89.0	91.3	87.5
Adalimumab																			
No	N	87	119	33	65	65	369	100	133	44	66	83	426	118	159	58	75	129	539
	%	83.7	80.4	89.2	75.6	81.3	81.1	76.3	80.1	88.0	74.2	74.8	77.9	75.2	87.4	95.1	82.4	86.0	84.1
Yes	N	17	29	4	21	15	86	31	33	6	23	28	121	39	23	3	16	21	102
	%	16.3	19.6	10.8	24.4	18.8	18.9	23.7	19.9	12.0	25.8	25.2	22.1	24.8	12.6	4.9	17.6	14.0	15.9
Golimumab																			
No	N	104	148	37	86	78	453	129	163	50	87	111	540	146	158	61	89	134	588
	%	100.0	100.0	100.0	100.0	97.5	99.6	98.5	98.2	100.0	97.8	100.0	98.7	93.0	86.8	100.0	97.8	89.3	91.7
Yes	N	0	0	0	0	2	2	2	3	0	2	0	7	11	24	0	2	16	53
	%	0	0	0	0	2.5	0.4	1.5	1.8	0	2.2	0	1.3	7.0	13.2	0	2.2	10.7	8.3
Vedolizumab		104	148	37	86	80	455	131	166	50	89	111	547	157	182	61	91	150	641

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
No	N																		
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Disease duration at 1st biological therapy (years)	Median (years)	2.0	3.2	3.2	3.2	4.1	3.2	4.1	1.8	3.2	4.2	3.5	3.3	2.8	2.8	3.1	3.0	3.3	2.9
Age at IBD diagnosis	Median (years)	31.3	33.0	31.1	34.9	32.2	32.6	31.4	29.6	28.8	39.8	35.0	32.0	33.3	34.2	30.3	36.2	32.7	33.8
Age at inclusion	Median (years)	36.5	39.2	40.7	42.3	39.4	39.4	34.7	34.7	36.6	48.2	40.3	38.2	39.4	39.1	37.9	44.8	40.8	39.9
Treated within 12 months with																			
No treatment	N	26	48	3	15	14	106	29	41	5	10	16	101	37	48	12	13	27	137
	%	25.0	32.4	8.1	17.4	17.5	23.3	22.1	24.7	10.0	11.2	14.4	18.5	23.6	26.4	19.7	14.3	18.0	21.4
Glucocorticoids	N	36	47	11	25	22	141	51	53	27	36	28	195	53	62	33	38	48	234
	%	34.6	31.8	29.7	29.1	27.5	31.0	38.9	31.9	54.0	40.4	25.2	35.6	33.8	34.1	54.1	41.8	32.0	36.5
Immunosuppressive medication (AZA/6-MP/MTX)	N	11	13	4	6	8	42	9	12	3	7	10	41	8	17	0	5	10	40
	%	10.6	8.8	10.8	7.0	10.0	9.2	6.9	7.2	6.0	7.9	9.0	7.5	5.1	9.3	0	5.5	6.7	6.2
Combination	N	31	40	19	40	36	166	42	60	15	36	57	210	59	55	16	35	65	230
	%	29.8	27.0	51.4	46.5	45.0	36.5	32.1	36.1	30.0	40.4	51.4	38.4	37.6	30.2	26.2	38.5	43.3	35.9
Treated within 12 months with																			
No treatment	N	26	48	3	15	14	106	29	41	5	10	16	101	37	48	12	13	27	137
	%	25.0	32.4	8.1	17.4	17.5	23.3	22.1	24.7	10.0	11.2	14.4	18.5	23.6	26.4	19.7	14.3	18.0	21.4
Budesonide	N	2	1	1	6	0	10	9	12	7	6	5	39	6	21	4	8	3	42
	%	1.9	0.7	2.7	7.0	0	2.2	6.9	7.2	14.0	6.7	4.5	7.1	3.8	11.5	6.6	8.8	2.0	6.6
Glucocorticoids without Budesonide	N	34	46	10	19	22	131	42	41	20	30	23	156	47	41	29	30	45	192
	%	32.7	31.1	27.0	22.1	27.5	28.8	32.1	24.7	40.0	33.7	20.7	28.5	29.9	22.5	47.5	33.0	30.0	30.0
Immunosuppressive medication (AZA/6-	N	11	13	4	6	8	42	9	12	3	7	10	41	8	17	0	5	10	40

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
MP/MTX)	%	10.6	8.8	10.8	7.0	10.0	9.2	6.9	7.2	6.0	7.9	9.0	7.5	5.1	9.3	0	5.5	6.7	6.2
Combination	N	31	40	19	40	36	166	42	60	15	36	57	210	59	55	16	35	65	230
	%	29.8	27.0	51.4	46.5	45.0	36.5	32.1	36.1	30.0	40.4	51.4	38.4	37.6	30.2	26.2	38.5	43.3	35.9
Comorbidity																			
No (CCI=0)	N	79	127	25	64	64	359	106	138	35	65	85	429	121	144	50	71	115	501
	%	76.0	85.8	67.6	74.4	80.0	78.9	80.9	83.1	70.0	73.0	76.6	78.4	77.1	79.1	82.0	78.0	76.7	78.2
Moderate (CCI=1–2)	N	19	18	9	20	14	80	20	24	14	23	24	105	32	33	11	17	32	125
	%	18.3	12.2	24.3	23.3	17.5	17.6	15.3	14.5	28.0	25.8	21.6	19.2	20.4	18.1	18.0	18.7	21.3	19.5
High (CCI=3+)	N	6	3	3	2	2	16	5	4	1	1	2	13	4	5	0	3	3	15
	%	5.8	2.0	8.1	2.3	2.5	3.5	3.8	2.4	2.0	1.1	1.8	2.4	2.5	2.7	0	3.3	2.0	2.3

Table 3d: Incident use of biological therapy in patients with Crohn's disease

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of patients	N	123	154	71	96	122	566	140	149	45	88	100	522	134	142	42	91	101	510
Among those with treatment																			
No continuous treatment	N	16	3	2	3	2	26	10	8	2	9	6	35	19	10	4	14	8	55
	%	13.0	1.9	2.8	3.1	1.6	4.6	7.1	5.4	4.4	10.2	6.0	6.7	14.2	7.0	9.5	15.4	7.9	10.8
Continuous treatment	N	107	151	69	93	120	540	130	141	43	79	94	487	115	132	38	77	93	455
	%	87.0	98.1	97.2	96.9	98.4	95.4	92.9	94.6	95.6	89.8	94.0	93.3	85.8	93.0	90.5	84.6	92.1	89.2
Among those with treatment																			
No episodic treatment (one/two infliximab infusions)	N	91	142	65	82	114	494	123	134	42	73	90	462	108	126	38	75	91	438
	%	74.0	92.2	91.5	85.4	93.4	87.3	87.9	89.9	93.3	83.0	90.0	88.5	80.6	88.7	90.5	82.4	90.1	85.9
Episodic treatment (one/two infliximab infusions)	N	32	12	6	14	8	72	17	15	3	15	10	60	26	16	4	16	10	72
	%	26.0	7.8	8.5	14.6	6.6	12.7	12.1	10.1	6.7	17.0	10.0	11.5	19.4	11.3	9.5	17.6	9.9	14.1
Among those with treatment																			
Continuous treatment	N	91	142	65	82	114	494	123	134	42	73	90	462	108	126	38	75	91	438
	%	74.0	92.2	91.5	85.4	93.4	87.3	87.9	89.9	93.3	83.0	90.0	88.5	80.6	88.7	90.5	82.4	90.1	85.9
Episodic treatment (one/two infliximab infusions)	N	16	3	2	3	2	26	10	8	2	9	6	35	19	10	4	14	8	55
	%	13.0	1.9	2.8	3.1	1.6	4.6	7.1	5.4	4.4	10.2	6.0	6.7	14.2	7.0	9.5	15.4	7.9	10.8
Continuous and episodic treatment	N	16	9	4	11	6	46	7	7	1	6	4	25	7	6	0	2	2	17
	%	13.0	5.8	5.6	11.5	4.9	8.1	5.0	4.7	2.2	6.8	4.0	4.8	5.2	4.2	0	2.2	2.0	3.3
Infliximab																			
No	N	18	55	6	17	30	126	32	40	4	21	22	119	29	25	1	10	16	81
	%	14.6	35.7	8.5	17.7	24.6	22.3	22.9	26.8	8.9	23.9	22.0	22.8	21.6	17.6	2.4	11.0	15.8	15.9
Yes	N	105	99	65	79	92	440	108	109	41	67	78	403	105	117	41	81	85	429
	%	85.4	64.3	91.5	82.3	75.4	77.7	77.1	73.2	91.1	76.1	78.0	77.2	78.4	82.4	97.6	89.0	84.2	84.1
Adalimumab		95	71	52	58	69	345	96	87	38	51	66	338	92	100	38	73	77	380

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
No	N																		
	%	77.2	46.1	73.2	60.4	56.6	61.0	68.6	58.4	84.4	58.0	66.0	64.8	68.7	70.4	90.5	80.2	76.2	74.5
Yes	N	28	83	19	38	53	221	44	62	7	37	34	184	42	42	4	18	24	130
	%	22.8	53.9	26.8	39.6	43.4	39.0	31.4	41.6	15.6	42.0	34.0	35.2	31.3	29.6	9.5	19.8	23.8	25.5
Golimumab																			
No	N	123	154	71	96	122	566	140	149	45	87	100	521	123	142	42	90	98	495
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.9	100.0	99.8	91.8	100.0	100.0	98.9	97.0	97.1
Yes	N	0	0	0	0	0	0	0	0	0	1	0	1	11	0	0	1	3	15
	%	0	0	0	0	0	0	0	0	0	1.1	0	0.2	8.2	0	0	1.1	3.0	2.9
Vedolizumab																			
No	N	123	154	71	96	122	566	140	149	45	88	100	522	134	142	42	91	101	510
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Disease duration at 1st biological therapy (years)	Median (years)	5.8	2.6	4.0	2.7	4.6	3.8	4.4	2.4	1.8	2.0	2.9	3.2	3.8	1.5	1.3	4.5	2.3	2.4
Age at IBD diagnosis	Median (years)	24.5	27.0	25.6	30.2	25.0	25.9	25.8	28.4	29.2	28.3	29.3	28.0	29.9	29.3	29.1	33.2	29.2	30.1
Age at inclusion	Median (years)	33.0	33.5	32.9	36.9	34.7	34.4	34.4	34.1	34.1	36.2	34.7	34.7	34.5	34.7	33.0	44.8	36.6	35.8
Treated within 12 months with																			
No treatment	N	37	37	18	18	28	138	47	36	8	17	16	124	39	33	6	26	21	125
	%	30.1	24.0	25.4	18.8	23.0	24.4	33.6	24.2	17.8	19.3	16.0	23.8	29.1	23.2	14.3	28.6	20.8	24.5
Glucocorticoids	N	20	34	25	29	17	125	22	35	16	16	19	108	26	26	15	24	24	115
	%	16.3	22.1	35.2	30.2	13.9	22.1	15.7	23.5	35.6	18.2	19.0	20.7	19.4	18.3	35.7	26.4	23.8	22.5
Immunosuppressive medication (AZA/6-MP/MTX)	N	28	25	7	11	29	100	33	25	5	20	16	99	26	21	2	11	15	75
	%	22.8	16.2	9.9	11.5	23.8	17.7	23.6	16.8	11.1	22.7	16.0	19.0	19.4	14.8	4.8	12.1	14.9	14.7

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Combination	N	38	58	21	38	48	203	38	53	16	35	49	191	43	62	19	30	41	195
	%	30.9	37.7	29.6	39.6	39.3	35.9	27.1	35.6	35.6	39.8	49.0	36.6	32.1	43.7	45.2	33.0	40.6	38.2
Treated within 12 months with																			
No treatment	N	37	37	18	18	28	138	47	36	8	17	16	124	39	33	6	26	21	125
	%	30.1	24.0	25.4	18.8	23.0	24.4	33.6	24.2	17.8	19.3	16.0	23.8	29.1	23.2	14.3	28.6	20.8	24.5
Budesonide	N	7	14	8	13	6	48	8	10	9	4	9	40	9	9	3	14	11	46
	%	5.7	9.1	11.3	13.5	4.9	8.5	5.7	6.7	20.0	4.5	9.0	7.7	6.7	6.3	7.1	15.4	10.9	9.0
Glucocorticoids without Budesonide	N	13	20	17	16	11	77	14	25	7	12	10	68	17	17	12	10	13	69
	%	10.6	13.0	23.9	16.7	9.0	13.6	10.0	16.8	15.6	13.6	10.0	13.0	12.7	12.0	28.6	11.0	12.9	13.5
Immunosuppressive medication (AZA/6-MP/MTX)	N	28	25	7	11	29	100	33	25	5	20	16	99	26	21	2	11	15	75
	%	22.8	16.2	9.9	11.5	23.8	17.7	23.6	16.8	11.1	22.7	16.0	19.0	19.4	14.8	4.8	12.1	14.9	14.7
Combination	N	38	58	21	38	48	203	38	53	16	35	49	191	43	62	19	30	41	195
	%	30.9	37.7	29.6	39.6	39.3	35.9	27.1	35.6	35.6	39.8	49.0	36.6	32.1	43.7	45.2	33.0	40.6	38.2
Comorbidity																			
No (CCI=0)	N	95	125	57	64	105	446	110	119	31	63	76	399	108	110	35	66	74	393
	%	77.2	81.2	80.3	66.7	86.1	78.8	78.6	79.9	68.9	71.6	76.0	76.4	80.6	77.5	83.3	72.5	73.3	77.1
Moderate (CCI=1–2)	N	27	26	13	28	16	110	27	29	11	23	21	111	24	31	7	19	23	104
	%	22.0	16.9	18.3	29.2	13.1	19.4	19.3	19.5	24.4	26.1	21.0	21.3	17.9	21.8	16.7	20.9	22.8	20.4
High (CCI=3+)	N	1	3	1	4	1	10	3	1	3	2	3	12	2	1	0	6	4	13
	%	0.8	1.9	1.4	4.2	0.8	1.8	2.1	0.7	6.7	2.3	3.0	2.3	1.5	0.7	0	6.6	4.0	2.5

Table 4a: Acute total colectomy in patients with ulcerative colitis

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of patients	N	53	41	17	25	29	165	40	45	20	26	32	163	54	47	15	16	19	151
Age at surgery	Median (years)	35.5	58.6	53.2	57.8	43.9	46.0	42.0	48.7	45.7	47.8	54.2	47.3	44.0	56.5	55.8	62.0	51.4	54.8
Gender																			
Women	N	29	18	12	9	12	80	18	19	5	12	14	68	32	24	5	5	6	72
	%	54.7	43.9	70.6	36.0	41.4	48.5	45.0	42.2	25.0	46.2	43.8	41.7	59.3	51.1	33.3	31.3	31.6	47.7
Men	N	24	23	5	16	17	85	22	26	15	14	18	95	22	23	10	11	13	79
	%	45.3	56.1	29.4	64.0	58.6	51.5	55.0	57.8	75.0	53.8	56.3	58.3	40.7	48.9	66.7	68.8	68.4	52.3
IBD disease duration at colectomy	Median (years)	0.6	1.6	2.9	0.9	2.0	1.3	0.5	1.5	0.9	0.4	4.4	1.1	0.8	1.3	0.3	0.8	4.7	1.1
Prior glucocorticoid use within 30 days	N	16	7	5	6	4	38	10	7	11	5	11	44	6	11	1	2	10	30
	%	30.2	17.1	29.4	24.0	13.8	23.0	25.0	15.6	55.0	19.2	34.4	27.0	11.1	23.4	6.7	12.5	52.6	19.9
Prior biological therapy within 30 days	N	15	9	5	3	3	35	17	19	5	4	4	49	15	16	5	2	6	44
	%	28.3	22.0	29.4	12.0	10.3	21.2	42.5	42.2	25.0	15.4	12.5	30.1	27.8	34.0	33.3	12.5	31.6	29.1
Operating hospital																			
Non-specialized regional hospitals	N	10	16	1	3	15	45	10	18	1	7	11	47	11	14	1	6	2	34
	%	18.9	39.0	5.9	12.0	51.7	27.3	25.0	40.0	5.0	26.9	34.4	28.8	20.4	29.8	6.7	37.5	10.5	22.5
Specialized IBD hospitals	N	43	25	16	22	14	120	30	27	19	19	21	116	43	33	14	10	17	117
	%	81.1	61.0	94.1	88.0	48.3	72.7	75.0	60.0	95.0	73.1	65.6	71.2	79.6	70.2	93.3	62.5	89.5	77.5

Table 4b: Elective total colectomy in patients with ulcerative colitis

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of patients	N	30	46	26	16	24	142	22	35	19	14	27	117	22	42	17	19	40	140
Age at surgery	Median (years)	40.4	50.8	41.5	40.9	46.0	47.0	46.5	40.2	36.1	57.3	48.4	44.8	50.2	56.1	46.1	51.5	50.5	50.8
Gender																			
Women	N	17	20	13	9	13	72	11	13	8	8	10	50	8	20	6	13	20	67
	%	56.7	43.5	50.0	56.3	54.2	50.7	50.0	37.1	42.1	57.1	37.0	42.7	36.4	47.6	35.3	68.4	50.0	47.9
Men	N	13	26	13	7	11	70	11	22	11	6	17	67	14	22	11	6	20	73
	%	43.3	56.5	50.0	43.8	45.8	49.3	50.0	62.9	57.9	42.9	63.0	57.3	63.6	52.4	64.7	31.6	50.0	52.1
Disease duration at colectomy	Median (years)	2.7	6.4	5.0	2.7	2.1	4.0	8.2	4.7	5.1	7.3	4.3	5.1	4.6	3.4	7.4	3.8	3.8	4.1
Prior glucocorticoid use within 180 days	N	18	13	8	9	14	62	10	23	6	10	17	66	17	22	8	8	26	81
	%	60.0	28.3	30.8	56.3	58.3	43.7	45.5	65.7	31.6	71.4	63.0	56.4	77.3	52.4	47.1	42.1	65.0	57.9
Prior biological therapy within 180 days	N	6	18	8	7	7	46	9	26	8	6	8	57	8	24	8	8	18	66
	%	20.0	39.1	30.8	43.8	29.2	32.4	40.9	74.3	42.1	42.9	29.6	48.7	36.4	57.1	47.1	42.1	45.0	47.1
Prior biological therapy within 180 days																			
None	N	24	28	18	9	17	96	13	9	11	8	19	60	14	18	9	11	22	74
	%	80.0	60.9	69.2	56.3	70.8	67.6	59.1	25.7	57.9	57.1	70.4	51.3	63.6	42.9	52.9	57.9	55.0	52.9
1 treatment	N	0	6	3	2	1	12	2	4	1	2	2	11	3	2	4	1	5	15
	%	0	13.0	11.5	12.5	4.2	8.5	9.1	11.4	5.3	14.3	7.4	9.4	13.6	4.8	23.5	5.3	12.5	10.7
≥2 treatments	N	6	12	5	5	6	34	7	22	7	4	6	46	5	22	4	7	13	51
	%	20.0	26.1	19.2	31.3	25.0	23.9	31.8	62.9	36.8	28.6	22.2	39.3	22.7	52.4	23.5	36.8	32.5	36.4
Operating hospital																			
Non-specialized regional hospitals	N	6	23	0	5	5	39	5	19	0	5	15	44	4	13	0	11	19	47
	%	20.0	50.0	0	31.3	20.8	27.5	22.7	54.3	0	35.7	55.6	37.6	18.2	31.0	0	57.9	47.5	33.6

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Specialized IBD hospitals	N	24	23	26	11	19	103	17	16	19	9	12	73	18	29	17	8	21	93
	%	80.0	50.0	100.0	68.8	79.2	72.5	77.3	45.7	100.0	64.3	44.4	62.4	81.8	69.0	100.0	42.1	52.5	66.4

Table 4c: Acute total colectomy in patients with Crohn's disease

		2009–10					2011–12						2013–14					
		Capital Region	Central Region	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
CD, Number of patients	N	6	3	4	5	18	6	6	1	7	5	25	11	3	3	1	2	20
Age at surgery	Median (years)	34.9	56.2	51.4	59.0	51.4	45.4	44.1	38.6	34.1	56.0	40.2	32.7	39.8	75.5	28.8	58.7	40.0
Gender																		
Women	N	1	3	0	1	5	1	3	0	6	2	12	5	3	2	1	1	12
	%	16.7	100.0	0	20.0	27.8	16.7	50.0	0	85.7	40.0	48.0	45.5	100.0	66.7	100.0	50.0	60.0
Men	N	5	0	4	4	13	5	3	1	1	3	13	6	0	1	0	1	8
	%	83.3	0	100.0	80.0	72.2	83.3	50.0	100.0	14.3	60.0	52.0	54.5	0	33.3	0	50.0	40.0
IBD disease duration at colectomy	Median (years)	5.8	3.6	0.2	0.0	0.7	1.2	0.2	0.0	1.9	4.7	0.4	10.9	5.9	1.3	2.9	18.0	8.3
Prior glucocorticoid use within 30 days	N	1	1	0	1	3	1	1	0	3	0	5	2	0	0	1	1	4
	%	16.7	33.3	0	20.0	16.7	16.7	16.7	0	42.9	0	20.0	18.2	0	0	100.0	50.0	20.0
Prior biological therapy within 30 days	N	2	0	0	0	2	1	0	0	0	1	2	2	0	0	0	1	3
	%	33.3	0	0	0	11.1	16.7	0	0	0	20.0	8.0	18.2	0	0	0	50.0	15.0
Operating hospital																		
Non-specialized regional hospitals	N	2	1	0	4	7	0	2	0	0	2	4	1	0	1	0	0	2
	%	33.3	33.3	0	80.0	38.9	0	33.3	0	0	40.0	16.0	9.1	0	33.3	0	0	10.0
Specialized IBD hospitals	N	4	2	4	1	11	6	4	1	7	3	21	10	3	2	1	2	18
	%	66.7	66.7	100.0	20.0	61.1	100.0	66.7	100.0	100.0	60.0	84.0	90.9	100.0	66.7	100.0	100.0	90.0

Table 4d: Elective total colectomy in patients with Crohn's disease

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
CD, Number of patients	N	7	8	4	2	4	25	3	4	2	6	1	16	4	2	3	8	3	20
Age at surgery	Median (years)	48.6	33.6	39.8	59.4	61.7	45.9	31.1	54.3	37.2	45.7	64.1	50.4	48.9	48.7	57.9	61.5	63.7	55.6
Gender																			
Women	N	4	4	2	2	1	13	1	2	2	5	1	11	2	1	2	6	3	14
	%	57.1	50.0	50.0	100.0	25.0	52.0	33.3	50.0	100.0	83.3	100.0	68.8	50.0	50.0	66.7	75.0	100.0	70.0
Men	N	3	4	2	0	3	12	2	2	0	1	0	5	2	1	1	2	0	6
	%	42.9	50.0	50.0	0	75.0	48.0	66.7	50.0	0	16.7	0	31.3	50.0	50.0	33.3	25.0	0	30.0
Disease duration at colectomy	Median (years)	2.4	8.0	9.8	3.2	5.2	5.5	8.5	3.2	12.4	6.9	0.8	6.3	5.5	5.4	17.4	6.3	5.9	6.6
Prior glucocorticoid use within 180 days	N	3	0	2	0	1	6	0	2	1	2	1	6	1	0	2	2	3	8
	%	42.9	0	50.0	0	25.0	24.0	0	50.0	50.0	33.3	100.0	37.5	25.0	0	66.7	25.0	100.0	40.0
Prior biological therapy within 180 days	N	1	3	3	2	1	10	2	0	0	0	0	2	1	1	1	3	1	7
	%	14.3	37.5	75.0	100.0	25.0	40.0	66.7	0	0	0	0	12.5	25.0	50.0	33.3	37.5	33.3	35.0
Prior biological therapy within 180 days																			
None	N	6	5	1	0	3	15	1	4	2	6	1	14	3	1	2	5	2	13
	%	85.7	62.5	25.0	0	75.0	60.0	33.3	100.0	100.0	100.0	100.0	87.5	75.0	50.0	66.7	62.5	66.7	65.0
1 treatment	N	1	0	0	0	0	1	2	0	0	0	0	2	0	0	0	1	0	1
	%	14.3	0	0	0	0	4.0	66.7	0	0	0	0	12.5	0	0	0	12.5	0	5.0
≥2 treatments	N	0	3	3	2	1	9	0	0	0	0	0	0	1	1	1	2	1	6
	%	0	37.5	75.0	100.0	25.0	36.0	0	0	0	0	0	0	25.0	50.0	33.3	25.0	33.3	30.0
Operating hospital																			
Non-specialized regional hospitals	N	2	0	0	0	3	5	0	2	0	1	0	3	1	0	0	2	1	4
	%	28.6	0	0	0	75.0	20.0	0	50.0	0	16.7	0	18.8	25.0	0	0	25.0	33.3	20.0

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Specialized IBD hospitals	N	5	8	4	2	1	20	3	2	2	5	1	13	3	2	3	6	2	16
	%	71.4	100.0	100.0	100.0	25.0	80.0	100.0	50.0	100.0	83.3	100.0	81.3	75.0	100.0	100.0	75.0	66.7	80.0

Table 4e: Acute intestinal resections other than total colectomies in patients with Crohn's disease

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of patients	N	56	45	35	41	47	224	73	38	26	38	55	230	84	44	22	27	36	213
Age at surgery	Median (years)	50.9	44.2	38.4	47.2	47.0	47.1	45.3	52.7	46.6	48.5	48.9	48.2	47.1	48.0	42.4	59.1	53.3	49.3
Gender																			
Women	N	32	25	21	22	25	125	43	22	11	15	28	119	45	26	14	15	24	124
	%	57.1	55.6	60.0	53.7	53.2	55.8	58.9	57.9	42.3	39.5	50.9	51.7	53.6	59.1	63.6	55.6	66.7	58.2
Men	N	24	20	14	19	22	99	30	16	15	23	27	111	39	18	8	12	12	89
	%	42.9	44.4	40.0	46.3	46.8	44.2	41.1	42.1	57.7	60.5	49.1	48.3	46.4	40.9	36.4	44.4	33.3	41.8
Disease duration at 1st surgery	Median (years)	5.3	0.4	6.1	0.6	0.5	2.3	0.6	1.8	6.5	0.8	0.2	1.0	4.5	5.9	1.4	5.1	5.3	4.5
Prior glucocorticoid use within 30 days	N	7	8	6	2	7	30	8	3	1	6	10	28	6	6	3	2	5	22
	%	12.5	17.8	17.1	4.9	14.9	13.4	11.0	7.9	3.8	15.8	18.2	12.2	7.1	13.6	13.6	7.4	13.9	10.3
Prior biological therapy within 30 days	N	1	3	3	1	3	11	2	5	2	3	3	15	4	6	2	1	2	15
	%	1.8	6.7	8.6	2.4	6.4	4.9	2.7	13.2	7.7	7.9	5.5	6.5	4.8	13.6	9.1	3.7	5.6	7.0
Operating hospital																			
Non-specialized regional hospitals	N	17	30	11	11	25	94	22	29	5	17	30	103	24	24	6	8	10	72
	%	30.4	66.7	31.4	26.8	53.2	42.0	30.1	76.3	19.2	44.7	54.5	44.8	28.6	54.5	27.3	29.6	27.8	33.8
Specialized IBD hospitals	N	39	15	24	30	22	130	51	9	21	21	25	127	60	20	16	19	26	141
	%	69.6	33.3	68.6	73.2	46.8	58.0	69.9	23.7	80.8	55.3	45.5	55.2	71.4	45.5	72.7	70.4	72.2	66.2

Table 4f: Elective intestinal resections other than total colectomy in patients with Crohn's disease

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of patients	N	53	68	22	27	66	236	68	73	25	37	45	248	70	97	22	36	58	283
Age at surgery	Median (years)	44.3	42.8	49.5	50.2	43.6	44.2	46.7	42.3	43.1	44.5	39.0	43.3	40.5	42.8	41.3	49.1	47.6	42.8
Gender																			
Women	N	24	36	11	14	32	117	38	46	13	20	26	143	33	54	11	19	30	147
	%	45.3	52.9	50.0	51.9	48.5	49.6	55.9	63.0	52.0	54.1	57.8	57.7	47.1	55.7	50.0	52.8	51.7	51.9
Men	N	29	32	11	13	34	119	30	27	12	17	19	105	37	43	11	17	28	136
	%	54.7	47.1	50.0	48.1	51.5	50.4	44.1	37.0	48.0	45.9	42.2	42.3	52.9	44.3	50.0	47.2	48.3	48.1
Disease duration at 1st surgery	Median (years)	3.2	7.2	0.7	2.4	6.5	5.2	5.8	4.8	1.2	2.4	5.2	5.0	7.9	5.9	8.1	7.9	2.4	6.7
Prior glucocorticoid use within 180 days	N	25	29	8	4	30	96	14	19	9	12	20	74	10	27	7	11	23	78
	%	47.2	42.6	36.4	14.8	45.5	40.7	20.6	26.0	36.0	32.4	44.4	29.8	14.3	27.8	31.8	30.6	39.7	27.6
Prior biological therapy within 180 days	N	9	16	6	2	13	46	6	23	9	8	16	62	15	31	7	11	16	80
	%	17.0	23.5	27.3	7.4	19.7	19.5	8.8	31.5	36.0	21.6	35.6	25.0	21.4	32.0	31.8	30.6	27.6	28.3
Prior biological therapy within 180 days																			
None	N	44	52	16	25	53	190	62	50	16	29	29	186	55	66	15	25	42	203
	%	83.0	76.5	72.7	92.6	80.3	80.5	91.2	68.5	64.0	78.4	64.4	75.0	78.6	68.0	68.2	69.4	72.4	71.7
1 treatment	N	2	1	2	1	3	9	0	5	1	2	1	9	3	2	3	1	2	11
	%	3.8	1.5	9.1	3.7	4.5	3.8	0	6.8	4.0	5.4	2.2	3.6	4.3	2.1	13.6	2.8	3.4	3.9
≥2 treatments	N	7	15	4	1	10	37	6	18	8	6	15	53	12	29	4	10	14	69
	%	13.2	22.1	18.2	3.7	15.2	15.7	8.8	24.7	32.0	16.2	33.3	21.4	17.1	29.9	18.2	27.8	24.1	24.4
Operating hospital																			
Non-specialized regional hospitals	N	13	25	2	10	30	80	12	30	3	8	18	71	14	17	3	7	20	61
	%	24.5	36.8	9.1	37.0	45.5	33.9	17.6	41.1	12.0	21.6	40.0	28.6	20.0	17.5	13.6	19.4	34.5	21.6

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Specialized IBD hospitals	N	40	43	20	17	36	156	56	43	22	29	27	177	56	80	19	29	38	222
	%	75.5	63.2	90.9	63.0	54.5	66.1	82.4	58.9	88.0	78.4	60.0	71.4	80.0	82.5	86.4	80.6	65.5	78.4

Table 4g: Anal fistula/abscess surgery in patients with Crohn's disease

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
Number of patients	N	57	35	22	22	27	163	81	51	27	29	42	230	86	61	35	28	57	267
Age at surgery	Median (years)	37.9	37.0	41.4	44.8	46.4	39.1	35.0	35.8	32.7	38.6	37.1	35.8	34.7	34.1	37.6	43.3	36.9	36.5
Gender																			
Women	N	30	13	14	5	16	78	41	22	15	16	24	118	38	32	15	14	30	129
	%	52.6	37.1	63.6	22.7	59.3	47.9	50.6	43.1	55.6	55.2	57.1	51.3	44.2	52.5	42.9	50.0	52.6	48.3
Men	N	27	22	8	17	11	85	40	29	12	13	18	112	48	29	20	14	27	138
	%	47.4	62.9	36.4	77.3	40.7	52.1	49.4	56.9	44.4	44.8	42.9	48.7	55.8	47.5	57.1	50.0	47.4	51.7
Disease duration at 1st surgery	Median (years)	4.8	3.5	6.2	4.7	4.6	4.6	5.3	5.3	4.8	2.6	7.6	5.3	4.7	6.1	5.2	4.1	4.9	5.0
Prior glucocorticoid use within 30 days	N	1	2	1	0	3	7	3	4	1	0	1	9	5	1	3	2	1	12
	%	1.8	5.7	4.5	0	11.1	4.3	3.7	7.8	3.7	0	2.4	3.9	5.8	1.6	8.6	7.1	1.8	4.5
Prior biological therapy within 30 days	N	2	4	1	0	3	10	8	4	4	4	5	25	10	12	8	4	5	39
	%	3.5	11.4	4.5	0	11.1	6.1	9.9	7.8	14.8	13.8	11.9	10.9	11.6	19.7	22.9	14.3	8.8	14.6
Prior biological therapy within 30 days																			
None	N	55	31	21	22	24	153	73	47	23	25	37	205	76	49	27	24	52	228
	%	96.5	88.6	95.5	100.0	88.9	93.9	90.1	92.2	85.2	86.2	88.1	89.1	88.4	80.3	77.1	85.7	91.2	85.4
1 treatment	N	1	3	1	0	1	6	5	4	3	4	4	20	9	11	8	4	3	35
	%	1.8	8.6	4.5	0	3.7	3.7	6.2	7.8	11.1	13.8	9.5	8.7	10.5	18.0	22.9	14.3	5.3	13.1
≥2 treatments	N	1	1	0	0	2	4	3	0	1	0	1	5	1	1	0	0	2	4
	%	1.8	2.9	0	0	7.4	2.5	3.7	0	3.7	0	2.4	2.2	1.2	1.6	0	0	3.5	1.5
Operating hospital																			
Non-specialized regional hospitals	N	17	20	3	10	10	60	24	16	4	13	23	80	34	22	7	11	26	100
	%	29.8	57.1	13.6	45.5	37.0	36.8	29.6	31.4	14.8	44.8	54.8	34.8	39.5	36.1	20.0	39.3	45.6	37.5
Specialized IBD hospitals	N	40	15	19	12	17	103	57	35	23	16	19	150	52	39	28	17	31	167

		2009–10						2011–12						2013–14					
		Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions	Capital Region	Central Region	Region North	Region Zealand	Region South	All regions
	%	70.2	42.9	86.4	54.5	63.0	63.2	70.4	68.6	85.2	55.2	45.2	65.2	60.5	63.9	80.0	60.7	54.4	62.5

Appendix

Appendix table A1: Codes used to define inflammatory bowel diseases, glucocorticoids, biological therapy, and surgery

	Danish National Patient Registry	Prescription Database (ATC codes)
Inflammatory bowel disease		
Crohn's disease	ICD-8: 563.00-563.02 and 563.08-563.09 ICD-10: K50.0–K50.9	N/A
Ulcerative colitis	ICD-8: 563.19, 569.04 ICD-10: K51.0–K51.9	N/A
Glucocorticoids, overall	N/A	H02AB
Prednisone	N/A	H02AB07
Prednisolone	N/A	H02AB06
Budesonide	N/A	A07EA06
Biological therapy		
Infliximab	BOHJ18A1	N/A
Adalimumab	BOHJ18A3	ML04AB04
Golimumab	BOHJ18A4	ML04AB06

Vedolizumab	BOHJ19H4	ML04AA33
Surgery (NOMESCO codes)		
Total colectomy	KJFH	N/A
Other intestinal resections	KJFB	N/A
Anal fistula/abscess surgery	NOMESCO: KJG, KJH *AND* ICD-10: DK603-605, DK61	
Covariates (except the Charlson Index)		
Osteoporosis	ICD-8: 723.09 ICD-10: M80-M82	N/A
Anemia	ICD-8: 280.**, 281.** ICD-10: D50-D53	N/A
Azathioprine	N/A	ML04AX01
6-mercaptopurine	N/A	ML01BB02
Methotrexate	N/A	ML04AX03

Appendix table A2: Codes from the Danish National Patient Registry used to define the diseases included in the Charlson Comorbidity Index

	Diseases	ICD-8	ICD-10	Score
1	Myocardial infarction	410	I21;I22;I23	1
2	Congestive heart failure	427.09; 427.10; 427.11; 427.19; 428.99; 782.49	I50; I11.0; I13.0; I13.2	1
3	Peripheral vascular disease	440; 441; 442; 443; 444; 445	I70; I71; I72; I73; I74; I77	1
4	Cerebrovascular disease	430-438	I60-I69; G45; G46	1
5	Dementia	290.09-290.19; 293.09	F00-F03; F05.1; G30	1
6	Chronic pulmonary disease	490-493; 515-518	J40-J47; J60-J67; J68.4; J70.1; J70.3; J84.1; J92.0; J96.1; J98.2; J98.3	1
7	Connective tissue disease	712; 716; 734; 446; 135.99	M05; M06; M08; M09;M30;M31; M32; M33; M34; M35; M36; D86	1
8	Ulcer disease	530.91; 530.98; 531-534	K22.1; K25-K28	1
9	Mild liver disease	571; 573.01; 573.04	B18; K70.0-K70.3; K70.9; K71; K73; K74; K76.0; DB18	1
10	Diabetes type 1 Diabetes type 2	249.00; 249.06; 249.07; 249.09 250.00; 250.06; 250.07; 250.09	E10.0, E10.1; E10.9 E11.0; E11.1; E11.9	1
11	Hemiplegia	344	G81; G82	2
12	Moderate to severe renal disease	403; 404; 580-583; 584; 590.09; 593.19; 753.10-753.19; 792	I12; I13; N00-N05; N07; N11; N14; N17-N19; Q61	2
13	Diabetes with end-organ damage type 1 Type 2	249.01-249.05; 249.08 250.01-250.05; 250.08	E10.2-E10.8 E11.2-E11.8	2

14	Any tumor	140-194	C00-C75	2
15	Leukemia	204-207	C91-C95	2
16	Lymphoma	200-203; 275.59	C81-C85; C88; C90; C96	2
17	Moderate to severe liver disease	070.00; 070.02; 070.04; 070.06; 070.08; 573.00; 456.00-456.09	B15.0; B16.0; B16.2; B19.0; K70.4; K72; K76.6; I85	3
18	Metastatic solid tumor	195-198; 199	C76-C80	6
19	AIDS	079.83	B21-B24	6

Appendix table A3: Hospitals codes

	Hospital	Codes
Specialized IBD hospital:	Aalborg	8001
	Aarhus	6620, 7004
	Odense	4202
	Køge	2502, 3800D, 3800E
	Herlev	1516
	Hvidovre	1330
	Rigshospitalet	1301
Non-specialized IBD hospitals	All other hospitals than those above	All other hospital codes than those above