MEMORANDUM FOR 959 CPS/44M1
ATTN: CAPT MICHAEL GONZALES

FROM: 59 MDW/SGVU

SUBJECT: Professional Presentation Approval

1. Your paper, entitled *Incidence of Pulmonary Disease in Inflammatory Bowel Disease* presented at/published to *National ACP, San Diego, CA, 30 March - 1 April 2017* in accordance with MDWI 41-108, has been approved and assigned local file #17133.

2. Pertinent biographic information (name of author(s), title, etc.) has been entered into our computer file. Please advise us (by phone or mail) that your presentation was given. At that time, we will need the date (month, day and year) along with the location of your presentation. It is important to update this information so that we can provide quality support for you, your department, and the Medical Center commander. This information is used to document the scholarly activities of our professional staff and students, which is an essential component of Wilford Hall Ambulatory Surgical Center (WHASC) internship and residency programs.

3. Please know that if you are a Graduate Health Sciences Education student and your department has told you they cannot fund your publication, the 59th Clinical Research Division may pay for your basic journal publishing charges (to include costs for tables and black and white photos). We cannot pay for reprints. If you are a 59 MDW staff member, we can forward your request for funds to the designated Wing POC at the Chief Scientist’s Office, Ms. Alice Houy, office phone: 210-292-8029; email address: alice.houy.civ@mail.mil.

4. Congratulations, and thank you for your efforts and time. Your contributions are vital to the medical mission. We look forward to assisting you in your future publication/presentation efforts.

LINDA STEEL-GOODWIN, Col, USAF, BSC
Director, Clinical Investigations & Research Support

*Warrior Medics — Mission Ready — Patient Focused*
INSTRUCTIONS

USE ONLY THE MOST CURRENT 59 MDW FORM 3039 LOCATED ON AF E-PUBLISHING

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2. Print your name, rank/grade, sign and date the form in the author's signature block or use an electronic signature.

3. Attach a copy of the 59 MDW IRB or IACUC approval letter for the research related study. If this is a technical publication/presentation, state the type (e.g. case report, QA/QI study, program evaluation study, informational report/briefing, etc.) in the "Protocol Title" box.

4. Attach a copy of your abstract, paper, poster and other supporting documentation.

5. Save and forward, via email, the processing form and all supporting documentation to your unit commander, program director or immediate supervisor for review/approval.

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11. The Joint Ethics Regulation (JER) DoD 5500.07-R, Standards of Conduct, provides standards of ethical conduct for all DoD personnel and their interactions with other non-DoD entities, organizations, societies, conferences, etc. Part of the Form 3039 review and approval process includes a legal ethics review to address any potential conflicts related to DoD personnel participating in non-DoD sponsored conferences, professional meetings, publications/presentation disclosures to domestic and foreign audiences, DoD personnel accepting non-DoD contributions, awards, honoraria, gifts, etc. The specific circumstances for your presentation will determine whether a legal review is necessary. If you (as the author) or your supervisor check "NO" in block 17 of the Form 3039, your research or technical documents will not be forwarded to the 502 ISGJAC legal office for an ethics review. To assist you in making this decision about whether to request a legal review, the following examples are provided as a guideline:

   For presentations before professional societies and like organizations, the 59 MDW Public Affairs Office (PAO) will provide the needed review to ensure proper disclaimers are included and the subject matter of the presentation does not create any conflict of interest for DoD concern.

   If the sponsor of a conference or meeting is a DoD entity, an ethics review of your presentation is not required, since the DoD entity is responsible to obtain all approvals for the event.

   If the sponsor of a conference or meeting is a non-DoD commercial entity or an entity seeking to do business with the government, then your presentation should have an ethics review.

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NOTE: All abstracts, papers, posters, etc., should contain the following disclaimer statement:

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"The voluntary, fully informed consent of the subjects used in this research was obtained as required by 32 CFR 219 and DODI 3216.02_AFI 40-402."

"The experiments reported herein were conducted according to the principles set forth in the National Institute of Health Publication No. 80-23, Guide for the Care and Use of Laboratory Animals and the Animal Welfare Act of 1966, as amended."

59 MDW FORM 3039, 20160628
Prescribed by 59 MDWI 41-108
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TO: CLINICAL RESEARCH

FROM: (Author's Name, Rank, Grade, Office Symbol)
Gonzales, Michael, Capt, O-3, 44M1

GME/GHSE STUDENT:

PROTOCOL NUMBER:
C.2016.090d

PROTOCOL TITLE: (NOTE: For each new release of medical research or technical information as a publication/presentation, a new 59 MDW Form 3039 must be submitted for review and approval.)
Frequency of Pulmonary Manifestations in Inflammatory Bowel Disease

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DUTY PHONE/PAGER NUMBER
210-916-3856

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b. McLoughlin, Cameron W., DO O-3/Capt. 959 CSPS
c. Skabelund, Andrew J., MD O-4/Major 959 CSPS
d.
e.

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I CERTIFY ANY HUMAN OR ANIMAL RESEARCH RELATED STUDIES WERE APPROVED AND PERFORMED IN STRICT ACCORDANCE WITH 32 CFR 219, AFMAN 40-401 IP, AND 59 MDW 41-108. I HAVE READ THE FINAL VERSION OF THE ATTACHED MATERIAL AND CERTIFY THAT IT IS AN ACCURATE MANUSCRIPT FOR PUBLICATION AND/OR PRESENTATION.

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APPROVING AUTHORITY'S PRINTED NAME, RANK, TITLE
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DATE
February 28, 2017

DATE
March 02, 2017

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Contact 222-7141 for email instructions.

24. DATE RECEIVED  
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25. ASSIGNED PROCESSING REQUEST FILE NUMBER  
17133

26. DATE REVIEWED  
March 14, 2017

27. DATE FORWARD TO 502 ISG/JAC

28. AUTHOR CONTACTED FOR RECOMMENDED OR NECESSARY CHANGES:  
[ ] NO  [ ] YES  If yes, give date. 

29. COMMENTS:  
[ ] APPROVED  [ ] DISAPPROVED

IRB approved research project presentation with appropriate disclaimers. Approved

30. PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER  
Kevin Kupferer / GS 13 / Human Research Subject Protection Expert

31. REVIEWER SIGNATURE  
KUPFERER KEVIN R 1086667270

32. DATE  
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Kevin Linuma, SSgt/E-5, 59 MDW Public Affairs

43. REVIEWER SIGNATURE  
LINUMA KEVIN MITSUGU 1296227

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49. REVIEWER SIGNATURE

50. DATE
Incidence of Pulmonary Disease in Inflammatory Bowel Disease

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Cameron W. McLaughlin, Capt, USAF, MC
Andrew J. Skabelund, Maj, USAF, MC

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The views expressed are those of the author(s) and do not reflect the official views or policy of the Department of Defense or its Components.
**Introduction** The pulmonary manifestations of the inflammatory bowel disease (IBD) have been recognized for the last 40 years\(^1\). Early studies revealed an incidence of pulmonary manifestations of IBD of only 0.21%\(^2\). More recently, in a study of 36 IBD patients, Songur et al found that 44% of IBD patients have chronic respiratory symptoms; this was after exclusion of asthma, chronic gastroesophageal reflux, chronic bronchitis, and emphysema patients\(^3\). Multiple studies evaluated symptomatic and asymptomatic IBD patients and found abnormal pulmonary function tests (PFTs) in 28.5-58% and abnormal high resolution computed tomography (HRCT) in 22-64% of study participants\(^3\)\(^-\)\(^6\).

**Methods:** This study is a retrospective chart review of patient records in AHLTA. A preliminary search conducted by BAMC Health Care Operations (HCO) has identified approximately 1521 Crohn’s disease (CD) or ulcerative colitis (UC) patients (ICD-9 codes 556.xx and 555.xx) with inpatient and outpatient encounters over the past 5 years within DoD facilities in the San Antonio Multi-Market. This was used as the study group and was cross referenced by the SAMMC HCO for the ICD-9 codes of pulmonary diagnoses (See table 1). The prevalence of the various respiratory symptoms and diseases were then determined based on the results.

**Results:** A total of 1521 cases of IBD were found between 2010-2015. The prevalence of the various diagnoses are presented in table 1. A total of 525 unique patients (34.5%) were found to have ICD-9 codes associated with pulmonary symptoms or disease. Cough and dyspnea were the most common respiratory diagnoses associated with this population.

**Discussion:** The incidence of respiratory symptoms in the IBD population is not insignificant. 34.5% of IBD patients in this population were evaluated for respiratory complaints at some point during the 5 year study period. It is difficult to assess what the burden of chronicity is for the most common complaints of cough and dyspnea without performing a more in depth review of the medical records. Additionally, there was a high incidence of pneumonia, COPD, and venous thromboembolism in this population.

There is a high incidence of pulmonary symptoms in IBD patients. There are multiple potential explanations for this. Treatment of IBD typically requires immune suppression or surgery, both of which can place a patient at risk for pulmonary infections. IBD has been known to involve the large and small airways as well, and there is an apparent increased risk of this following colectomy in UC patients.

Of note, there were no diagnoses of asthma in our patient population, which is inconsistent with previously reported data, which noted that second only to arthritis, asthma was one of the most common chronic diseases in the IBD patient population.

A thorough chart review of our population is currently underway to assess the severity of the pulmonary symptoms in these patients. We hope to answer the question regarding the burden of chronicity of the respiratory diseases in these patients, in addition to answering the question whether asthma is as common in IBD as was previously thought.
<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Patients</th>
<th>ICD-9 Codes</th>
<th>Percentage of total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha-1-antitrypsin def.</td>
<td>0</td>
<td>273.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Asthma</td>
<td>0</td>
<td>493.xx</td>
<td>0.0</td>
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<tr>
<td>Bronchiectasis</td>
<td>9</td>
<td>494.0-1</td>
<td>0.6</td>
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<tr>
<td>Chronic Bronchitis</td>
<td>25</td>
<td>491.xx</td>
<td>1.6</td>
</tr>
<tr>
<td>COPD</td>
<td>63</td>
<td>496.xx</td>
<td>4.1</td>
</tr>
<tr>
<td>Cough</td>
<td>264</td>
<td>786.2</td>
<td>17.4</td>
</tr>
<tr>
<td>Dyspnea</td>
<td>279</td>
<td>786.0</td>
<td>18.3</td>
</tr>
<tr>
<td>Hemoptysis</td>
<td>8</td>
<td>786.30,786.39</td>
<td>0.5</td>
</tr>
<tr>
<td>Interstitial Lung Disease</td>
<td>2</td>
<td>516.xx</td>
<td>0.1</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>136</td>
<td>480-486</td>
<td>8.9</td>
</tr>
<tr>
<td>Pulmonary Hypertension</td>
<td>0</td>
<td>416.0,416.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Pulmonary Nodule</td>
<td>0</td>
<td>793.11,793.19</td>
<td>0.0</td>
</tr>
<tr>
<td>Pulmonary Vasculitis</td>
<td>5</td>
<td>447.6, 417.8</td>
<td>0.3</td>
</tr>
<tr>
<td>Venous Thromboembolism</td>
<td>52</td>
<td>415.1, 453.x</td>
<td>3.4</td>
</tr>
<tr>
<td>Wheezing</td>
<td>27</td>
<td>786.07</td>
<td>1.8</td>
</tr>
<tr>
<td>Sarcoidosis</td>
<td>6</td>
<td>135</td>
<td>0.4</td>
</tr>
<tr>
<td>Total unique patients</td>
<td>525</td>
<td></td>
<td>34.5</td>
</tr>
</tbody>
</table>

Table 1: Results of search for ICD-9 codes
REFERENCES.

Incidence of Pulmonary Disease in Inflammatory Bowel Disease

Michael Gonzales, Capt, USAF, MC1; Cameron McLaughlin, Capt, USAF, MC2; Andrew Skabelund, Maj, USAF, MC2

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Introduction
- The pulmonary manifestations of the inflammatory bowel disease (IBD) have been recognized for the last 40 years.
- Early studies revealed an incidence of pulmonary manifestations of IBD of only 0.21%.
- More recently, in a study of 36 IBD patients, Song et al. found that 44% of IBD patients have chronic respiratory symptoms.
- Multiple studies evaluated symptomatic and asymptomatic IBD patients and found abnormal pulmonary function tests (PFTs) in 28.5-58% and abnormal high resolution computed tomography (HRCT) in 22.64% of study participants.

Methods
- Retrospective chart review of patient records in AILTA (EMR). A preliminary search identified approximately 152 IBD patients.
- Cross referenced for the ICD-9 codes of pulmonary diagnoses.
- The prevalence of the various respiratory symptoms and diseases were then determined based on the results.

Results
- Pulmonary symptoms
  - Over half evaluated for pulmonary symptoms
  - Cough and dyspnea most common
- Pulmonary medications
  - Increased SABA prescription
  - 14% using ICS
- Suggests undiagnosed disease
- Pulmonary function tests
  - Numerous abnormalities
  - Abnormal DLCO and TLC (+40%)
- Mid-flows suggest small airway disease
- CT findings:
  - Pulmonary nodules—high prevalence
  - High prevalence of bronchiectasis and pleural disease

Conclusions
- Large, diverse retrospective chart review
- Preliminary data shows high prevalence of pulmonary disease
- High volume of PFTs and CT scans
- Future treatment of IBD patients

Strengths
- Large data pool for investigation of abnormal PFTs and CT findings
- Chart review only 1/3 complete with 49 PFTs and 60 CTs analyzed

Weaknesses
- Misdiagnosis via ICD-9 code screening (37.7% exclusion rates)
- Electronic searches

Next Steps
- Complete remaining chart review
- Incorporate abdominal CT findings
- Inflammatory markers
- GI medications

Resources
2. Dua S et al. IBD patients with no extraintestinal features have normal lung function. Chest. 1998;114(3):726-730