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individualized Comparative Effectiveness
of Models Optimizing
Patient Safety and Resident Education

iCOMPARE

Limited Access Database Documentation

April 2019 Version

iCOMPARE
Limited Access Database Documentation
(April 2019 version)

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iCOMPARE
Limited Access Database Documentation
(April 2019 version)

Dataset Specifications

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1. These are the Limited Access Database (LAD) files for the individualized Comparative Effectiveness of Models Optimizing Patient Safety and Resident Education (iCOMPARE) cluster-randomized clinical trial as of April 2019.

2. Data files are provided as .sas7bdat files (SAS 9.4).

3. Data files included are:

   eoytraineesanon.sas7bdat
   iteanon.sas7bdat
   jit1anon.sas7bdat
   jit2anon.sas7bdat
   sa_censusanon.sas7bdat
   sa_sumdatanon.sas7bdat
   sa_timeseriesanon.sas7bdat
   tim_epochsanon.sas7bdat
   tim_preshiftsurvanon.sas7bdat
   tim_postshiftsurvanon.sas7bdat

Note: iCOMPARE is registered at clinicaltrials.gov: NCT02274818.

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iCOMPARE
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General Comments on Database

Introduction

The individualized Comparative Effectiveness of Models Optimizing Patient Safety and Resident Education (iCOMPARE) trial was a cluster-randomized trial conducted in 63 U.S. internal medicine residency programs during the 2015-2016 academic year. Residency programs were randomized to either maintain standard duty hours as adopted by the Accreditation Council for Graduate Medical Education (ACGME) in July 2011, or permit more flexible duty hours, principally removing the 16-hour shift length restriction for interns. The trial was motivated by decades of debate about the effects of the long duty hours of resident physicians on the safety of patients cared for by those residents, the education received by residents, and residents' sleep and well-being. The trial was funded by the National Heart, Lung, and Blood Institute and the ACGME, and is registered on clinicaltrials.gov (NCT02274818).

The iCOMPARE intervention was in effect during the 2015-2016 academic year (July 1, 2015 through June 30, 2016). The trial had 3 main data collection areas: patient safety, trainee education, and intern sleep and alertness. The plan for the iCOMPARE Limited Access Database (LAD) was approved by the iCOMPARE Data and Safety Monitoring Board (DSMB) prior to implementation. Due to restrictions on sharing specified in the data use agreements under which some iCOMPARE data were obtained and concerns about breaches of participant confidentiality, the LAD includes only a portion of the data collected and/or used in iCOMPARE.

Protocol history

The protocol for the trial was approved by the trial's DSMB on 15 Dec 2015 and no changes were made to the protocol subsequent to that approval. A copy of that protocol is included with this documentation.

Data collected in iCOMPARE and decisions regarding inclusion in the LAD

Patient safety was measured using Medicare claims data; per the data use agreement with the Centers for Medicare and Medicaid Services, these data may not be shared.

Education data comprised several types: trainee responses to surveys administered by iCOMPARE investigators (end-of-year surveys, just-in-time q2 weeks surveys during the academic year), program director responses to surveys administered by iCOMPARE investigators (end-of-year surveys), program director and faculty responses to end-of-year surveys administered by the ACGME, trainee scores on the internal medicine in-training exam (ITE score) administered by the American College of Physicians (ACP), program director responses to annual surveys administered by the Association of Program Directors in Internal Medicine (APDIM), and time-motion observations collected on the subset of interns who volunteered for the Time-Motion Substudy conducted by iCOMPARE investigators at 6 programs (3 flexible and 3 standard); written consent was obtained and a copy of the consent statement is included with this documentation.

Education data included in the LAD are limited to data from the surveys administered to trainees by iCOMPARE investigators, Time-Motion Substudy data, and grouped ITE score. The ACGME did not share data with iCOMPARE; the ACGME provided results of analyses completed by them. Data from the iCOMPARE and APDIM program director surveys are not included in the LAD due to concerns about ease of identifying a particular program director respondent.

Sleep and alertness data were collected on the subset of interns who volunteered for the Sleep and Alertness Substudy conducted by iCOMPARE investigators at 12 programs (6 flexible and 6 standard); written consent was obtained and a copy of the consent statement is included with this documentation.

iCOMPARE
Limited Access Database Documentation
(April 2019 version)

General Comments on Database (cont'd)

Data on respondent characteristics are extremely limited due to concerns about ease of identification of a particular respondent given that the participating programs have been named in publicly available documents. All site identification and cluster membership information has been eliminated out of considerations of respondent confidentiality; dates have been deleted.

This database is a limited data set; the iCOMPARE investigators were very concerned with the possibility of the confidentiality of respondents being broken and were also constrained by the data use agreements that provided iCOMPARE with access to data collected by other groups. Because of these limitations, users of the iCOMPARE LAD will not be able to replicate the trial's primary outcome analyses, nor be able to complete analyses accounting for clustering of trainees at programs.

Note about consent

Surveys were administered by email; respondents to surveys were assumed to provide consent if they returned responses to the survey. The ACP provided ITE scores only for trainees that indicated that their score could be shared for research. Interns participating in the Time-Motion Substudy provided written consent; a copy of the consent form is included in this documentation book. Interns participating in the Sleep and Alertness Substudy provided written consent; a copy of the consent form is included in this documentation book.

Note about cross file linkage

Linkage of records across types of data and within types of data was generally not planned for, even for iCOMPARE investigators, because of concerns about participant confidentiality. Exceptions to this policy of non linkage are:

- linkage between the two types of just-in-time survey types and across cycles of each just-in-time survey
- linkage across the 3 types of sleep and alertness substudy files
- linkage across the 3 types of time and motion substudy files

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iCOMPARE Publications (as of 18 April 2019)

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1. **Desai SV, Asch DA, Bellini LM, Chaiyachati KH, Liu M, Sternberg AL, Tonascia J, Yeager AM, Asch JM, Katz JT, Basner M, Bates DW, Bilimoria KY, Dinges DF, Even-Shoshan O, Shade DM, Silber JH, Small DS, Volpp KG, Shea JA for the iCOMPARE Research Group**: Education outcomes in a duty-hour flexibility trial in internal medicine. N Engl J Med **2018**;378:1494-508. (PMC6101652)

2. **Shea JA, Silber JH, Desai SV, Dinges DF, Bellini LM, Tonascia J, Sternberg AL, Small DS, Shade DM, Katz JT, Basner M, Chaiyachati KH, Even-Shoshan O, Bates DW, Volpp KG, Asch DA, the iCOMPARE Research Group**: Development of the individualised Comparative Effectiveness of Models Optimizing Patient Safety and Resident Education (iCOMPARE) trial: a protocol summary of a national cluster-randomised trial of resident duty hour policies in internal medicine. BMJ Open **2018**;8:e021711. (PMC6157525)

3. **Chaiyachati KH, Roy J, Asch DA, Dine CJ, Desai S, Bellini LM, Shea JA**: Improving longitudinal survey participation among internal medicine residents: Incorporating behavioral economic techniques and avoiding Friday or Saturday invitations. J Gen Intern Med doi: 10.1007/s11606-019-04836-8

4. **Silber JH, Bellini LM, Shea JA, Desai SV, Dinges DF, Basner M, Even-Shoshan O, Hill AS, Hochman LL, Katz JT, Ross RN, Shade DM, Small DS, Sternberg AL, Tonascia J, Volpp KG, Asch DA for the iCOMPARE Research Group**: Patient safety outcomes under flexible and standard resident duty-hour rules. N Engl J Med 2019;380:905-914. (PMC in progress)

5. **Basner M, Asch DA, Shea JA, Bellini LM, Carlin M, Ecker AJ, Malone SK, Desai SV, Sternberg AL, Tonascia J, Shade DM, Katz JT, Bates DW, Even-Shoshan O, Silber JH, Small DS, Volpp KG, Mott CG, Coats S, Mollicone DJ, Dinges SD on behalf of the iCOMPARE Research Group**: Sleep and alertness in a duty-hour flexibility trial in internal medicine. N Engl J Med 2019;380:915-923. (PMC in progress)

6. **Chaiyachati KH, Shea JA, Asch DA, Liu M, Bellini LM, Dine J, Sternberg AL, Gitelman Y, Yeager A, Asch J, Desai SV**: Assessment of inpatient time allocation among first-year internal medicine residents using time-motion observations. JAMA Intern Med doi:10.1001/jamainternmed.2019.0095

UNIVERSITY OF PENNSYLVANIA
RESEARCH SUBJECT
INFORMED CONSENT FORM

Protocol Title: The iCOMPARE Sleep and Alertness Study

Protocol Number: 821156

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215-898-9949

The iCOMPARE Sleep and Alertness Study

1. What you should know about this study:

- You are being asked to join a research study.
- This consent form explains the research study and your part in the study.
- Please read it carefully and take as much time as you need.
- Please contact us at 215-898-9665 with questions about the study or procedures.
- You are a volunteer. If you join the study, you can change your mind later. You can decide not to take part or you can quit at any time. There will be no penalty or loss of benefits if you decide to quit the study.
- During the study, we will tell you if we learn any new information that might affect whether you wish to continue to be in the study.
- Ask the study team to explain any words or information in this informed consent that you do not understand.
- For clinical trials, a description of the research will be available at www.ClinicalTrials.gov. This website will not include information that can identify you. You can search the website at any time.

2. Why is this research being done?

The purpose of this research study is to compare the sleep and alertness of interns working under different duty hour systems. You are being invited to take part in this research study because you are an intern on rotation in an internal medicine residency program that is participating in this study. This study has been approved by the University of Pennsylvania Institutional Review Board. Your institution's review board has also approved this study, either by reviewing it themselves or by authorizing the Institutional Review Board of the University of Pennsylvania to act in their place.

We are comparing interns' daily sleep and alertness outcomes under the current resident duty hour system versus their outcomes under an alternative more flexible resident duty hour system. During this study, we will assess sleep and alertness of approximately 400 interns. Your program has already been randomized to a duty hour system so your schedule will not change based on your participation in this study. Based on the duty hour system randomly assigned to your program, you are either in the group that has the current duty hour schedule or the alternative duty hour schedule. In fact, nothing about your participation in the Sleep and Alertness study will alter your role or schedule as a resident.

3. What will happen if you participate in this study?

You will be enrolled for a 2-week period of data acquisition during the 2015-16 academic year. During the 2-week period, you will wear a wristwatch-like device (Actigraph), continuously throughout each day. The Actigraph will record sleep and wake activity levels via body movement. You are asked to wear the watch 24 hours a day (i.e., day and night), with few exceptions. The watch should not be submerged under water for a prolonged time (i.e., during swimming or while taking a bath). The watch should also be taken off during impact sports (e.g., boxing, volleyball). However, you should continue to wear the watch when showering or engaging in physical activity such as jogging. You will also receive a Smartphone to use each morning of the 14 days to answer brief questions about your current shift, and your sleep and

sleepiness. You will then perform a 3-minute reaction time test (the PVT) on the Smartphone to assess your alertness. You will not be able to make calls on the Smartphone.

If you enroll, we will ask you to provide your age, sex, ethnicity, race, and contact information. Before your 14-day measurement period starts, we will mail the Smartphone and Actigraph either to your site coordinator or directly to you. You will then be asked to wear the Actigraph for 14 consecutive days. Each morning of the 14 days you will be asked to do the following actions on the Smartphone sometime between 6 AM and 9 AM (as your schedule allows). These actions will require no more than 5 minutes in total. Using the Smartphone, you will be asked to do the following: (1) indicate your current work shift; (2) indicate your sleep time and quality the day before; (3) indicate your sleepiness the day before and at the current time; and (4) perform the 3-minute reaction-time Psychomotor Vigilance Test (PVT).

Wearing the Actigraph and completing the sleep and sleepiness questions as well as the PVT are essential for measuring your sleep and alertness. You will receive up to a $140 gift card for wearing the Actigraph and completing the daily assessments for 14 consecutive days ($10/day x 14 days) that will be activated after the Smartphone and Actigraph have been returned to the study team. We ask you to either return the Smartphone and Actigraph back to your site coordinator, or mail them back to the study team in a prepaid package that we will provide at the end of the 14-day measurement period. If you lose or damage the Actigraph or other equipment from this study, you will not be held responsible for the damage or loss, but we ask that you inform the study team as soon as convenient.

Participation in the study is voluntary. You may choose to join the study or you may choose not to join the study. There is no penalty if you choose not to join the research study. You will lose no benefits or advantages that are now coming to you, or would come to you in the future.

You may withdraw from this study at any time you wish, meaning that you will not need to wear an Actigraph or provide sleep and alertness data. If you withdraw from the study, we will continue to use the data provided by you prior to your withdrawal, but you will not need to provide any additional data.

4. What are the risks or discomforts of the study?

There are no known risks or discomforts associated with wearing the Actigraph or performing the brief assessments on the Smartphone.

If you join this study, you will be assigned a unique identification number that will be used to identify your study data; your name will not be used to identify your study data. The link between your identification number and your name will be known only to your site coordinator and the study team.

If you participate in the iCOMPARE Time and Motion Study as well as this Sleep and Alertness Study, the data gathered in both studies may be linked.

While iCOMPARE has protections against loss of privacy, a loss of privacy is the greatest risk to participants in this study.

5. What are the benefits to being in the study?

You may not benefit from participating in this research study. The information you provide in aggregate with other participants' information may help program staff design duty hour schedules that keep future residents better rested, healthier, and better able to help patients.

6. What are your options if you do not want to be in the study?

You do not have to join this study. If you do not join, neither your training assignments nor your evaluations will be affected. You will still follow the duty schedules established by your program. Those schedules are the same whether or not you join this study. If you elect not to join this study, your sleep, sleepiness, and PVT performance will not be measured.

7. Will it cost you anything to be in this study?

No.

8. Will you be paid if you join this study?

Yes. You will receive a gift card worth up to $140 ($10/day x 14 days) if you wear the Actigraph and complete the Smartphone daily assessments of sleep, sleepiness and PVT performance during the entire 14-day measurement period.

9. Can you leave the study early?

You can agree to be in the study now and change your mind later. You have the right to drop out of the research study at any time during your participation. There is no penalty or loss of benefits to which you are otherwise entitled if you decide to do so. If you wish to stop, please tell us and return the Smartphone and Actigraph to your site coordinator (or their designee) or mail it back to us in the prepaid package as soon as possible. Leaving this study early will not affect your residency.

Any significant new findings developed during the course of the study which may relate to your willingness to continue participation will be provided to you.

10. Can we end your participation in the study early?

The study may be stopped without your consent for the following reasons:
- The Principal Investigator feels it is best for your safety and/or health. You will be informed of the reasons why.
- You have not followed the study instructions.
- The Principal Investigator, the funder or the Office of Regulatory Affairs at the University of Pennsylvania can stop the study any time.

11. How will your privacy be protected?

The iCOMPARE study has rules to protect information about you. Federal and state laws also protect your privacy. This part of the consent form tells you what information about you may be collected in this study and who might see or use it.

The investigator of the study team who consents you and issues you your identification number and follows up with you to retrieve the equipment and to provide you with the giftcard will know your identity. However the link between your name and the identification number used to identify your data will be stored separately from the analytic files in a locked file accessible only to the study team. Please notice that because you will be continuously wearing an actiwatch during one 14-day period, you can be identified as study participant during this period.

The results of this study may be published; however, you will not be identified by name or other personal identifiers. The administration of the Internal Medicine Residency Program where you train will not have access to your individual level data.

Records relating to your consent, enrollment and assignment of ID number will be maintained in locked files at the University of Pennsylvania. Your Actigraphy, questionnaire and PVT data will be stored on secure data platforms at the University of Pennsylvania and Johns

Hopkins University. Research data will be stored indefinitely. Individual-level data will be kept confidential. Only authorized project personnel will have access to the data. Internal monitors from the host (University of Pennsylvania, Johns Hopkins University) or funding organization (the National Institutes of Health) may inspect study records for quality assurance.

At the end of the study, a data set will be created and provided to the National Institutes of Health (NIH), the funder of this study. The NIH will make this data set available to other researchers. This data set will include your study data, but it will not include your name or program identity.

The use and disclosure of your information has no time limit. You can cancel your permission to use and disclose your information at any time by contacting the Principal Investigators of this study. The Principal Investigators can be reached by phone or mail at the numbers and addresses listed above.

If you do cancel your permission to use and disclose your information, your part in this study will end and no further information about you will be collected. Your cancellation would not affect information already collected in this study.

If you join this study:

- You will not own the data given by you to the investigators for this research.
- Any funder of this research may study the data collected from you.
- If data are in a form that identifies you, iCOMPARE investigators may use them for future research only with your consent or IRB approval.
- You will not own any product or idea created by the researchers working on this study.
- You will not receive any financial benefit from the creation, use or sale of such a product or idea.

12. What should you do if you have concerns or complaints about the research study?

- You may contact the research staff involved with this study at 215-898-9665.
- You may contact the Office of Regulatory Affairs with any question, concerns or complaints at the University of Pennsylvania by calling 215-898-2614.

13. What does your signature on this consent form mean?

Your signature on this form means that:

- you understand the information given to you in this form
- you accept the provisions in the form
- you agree to join the study

You will not give up any legal rights by signing this consent form.

Principal Investigators: David A Asch, MD
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Philadelphia, PA 19104
215-746-2705

David F. Dinges, PhD
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215-898-9949

WE WILL GIVE YOU A COPY OF THIS SIGNED AND DATED CONSENT FORM

I voluntarily consent to participate in this study. I confirm that I have read this consent and authorization document, or it has been read to me and that it explains what this research project is about and how and why it is being done. I will receive a signed and dated copy of this consent form upon my signature.

Intern's Signature	**Date (by Intern)**
Signature of Person Obtaining Consent	**Date**

The iCOMPARE Time and Motion Study

1. What you should know about this study:

- You are being asked to join a research study.
- This consent form explains the research study and your part in it.
- Please read it carefully and take as much time as you need to understand it.
- Please ask questions at any time about anything you do not understand.
- You are a volunteer. If you join the study, you can change your mind at any time. You can decide not to take part or you can quit at any time. There will be no penalty or loss of benefits if you decide to no longer participate.
- During the study, we will tell you if we learn any new information that might affect whether you wish to continue to be in the study.
- Ask the study team to explain any words or information in this informed consent that you do not understand.
- For clinical trials, a description of the research will be available at www.ClinicalTrials.gov. This website will not include information that can identify you. You can search the website at any time.

2. Why is this research being done?

This research is being done to learn about the effects of changes in duty hours on time spent with patients and other activities you typically participate in while in the hospital.

There will be about 60 participants in all. Participants will be from 6 different ACGME-accredited internal medicine training programs across the United States.

This study has been approved by the University of Pennsylvania Institutional Review Board. Your institution's review board has also approved this study, either by reviewing it themselves or by authorizing the Institutional Review Board of the University of Pennsylvania to act in their place.

3. What will happen if you join this study?

If you agree to be in this study, we will ask you to do the following things:

- Answer a few questions about your demographics.
- You will have a trained observer follow you on 2-4 shifts in the hospital on dates you agree upon. These observers are trained in privacy protection and research. They will be recording the amount of time you spend in various activities, such as seeing patients and writing notes.
- Observers will be trained to not interfere with your activities, to not enter patient rooms or view patient data, and to stay out of your way if you are sleeping, eating, socializing, or engaged in any other activity you do not want the observers to watch. You may stop the observation at any point.
- We will use a study number to identify your information, not your name, whenever possible. The link between the study number and your name will be kept confidential.
- No information from this study will impact your performance evaluation and/or employment. Your program director will not have access to individual level data.

4. What are the risks or discomforts of the study?

You may get tired of having the observer record how you are spending your time. You may be embarrassed by having the observer present. You can stop the observation at any time.

If you join this study, you will be assigned a unique identification number that will be used to identify your study data; your name will not be used to identify your study data. The link between your identification number and your name will be known only to the study coordinator who enrolls you.

If you participate in the iCOMPARE Time and Motion Study as well as this Sleep and Alertness Study, the data gathered in both studies may be linked.

While iCOMPARE has protections against loss of privacy, a loss of privacy is the greatest risk to participants in this study.

5. What are the benefits to being in the study?

There is no immediate benefit to you from being in the study. If you take part in this study, the information you provide may help program staff design residency schedules to allow for more time with patients and educational activities

6. What are your options if you do not want to be in the study?

You do not have to join this study. If you do not join, your training will not be affected.

7. Will it cost you anything to be in this study?

No.

8. Will you be paid if you join this study?

Yes. You will receive a gift card worth $50 after you complete the study.

9. Can you leave the study early?

- You can agree to be in the study now and change your mind later.
- If you wish to stop, please tell us right away.
- Leaving this study early will not affect your residency.
- If you leave the study, we will continue to use the data previously collected form you but will not collect any additional data from you.
- Any significant new findings developed during the course of the study which may relate to your willingness to continue participation will be provided to you.

10. Can we end your participation in the study early?

The study may be stopped without your consent for the following reasons:

- The Principal Investigator feels it is best for your safety and/or health. If this is the case, you will be informed of the reasons why.
- You have not followed the study instructions.
- The Principal Investigator, the funder or the Office of Regulatory Affairs at the University of Pennsylvania can stop the study any time.

11. How will your privacy be protected?

The iCOMPARE study has rules to protect information about you. Federal and state laws also protect your privacy. This part of the consent form tells you what information about you may be collected in this study and who might see or use it.

An administrative person (local admin) in your institution will enroll you in this part of the study. This local admin will have you complete this consent form and a demographics form. These forms will be returned to the study team. The study team will assign you a unique ID number. The observation data will be collected by an observer and will not be shared with the local admin or others in your program. However, because the observer will be following you it will be apparent to your program leadership and colleagues that you are in the study. The data collected by the observer will be shared only with the iCOMPARE study team. The iCOMPARE study team will view the data only with the unique ID and not linked to any personal information including your name or demographics.

We cannot do this study without your permission. You do not have to give us this permission. If you do not, then you may not join this study.

The results of this study may be published; however, you will not be identified by name or other personal identifiers. The administration of the Internal Medicine Residency Program other than the local admin will know if you participate, but they will not have access to individual level data.

All research data will be stored in secure data platforms at the University of Pennsylvania and Johns Hopkins University. Research data will be stored indefinitely. Individual-level data for interns will be kept confidential. Only authorized study team personnel will have access to the data. All data will be reported at units of aggregation which make impossible the identification of individual residents. Because each intern will be assigned an identification number that will be linked with their data, the database, therefore, will include a means of identification, which is the greatest risk to participants in this study. However the link between actual name and ID number will be stored separately from the analytic files in a locked file accessible only to authorized study team members. Internal monitors from the host (Johns Hopkins, University of Pennsylvania) or sponsoring organization (the National Institutes of Health) may inspect study records for quality assurance.

The use and disclosure of your information has no time limit. You can cancel your permission to use and disclose your information at any time by contacting the Principal Investigator of this study. The Principal Investigator, David Asch, MD, can be reached by phone at 215-746-2705 or by sending a letter to the address provided at the top of the page.

At the end of the study, a data set will be created and provided to the National Institutes of Health (NIH), the sponsor of this study. The NIH will make this data set available to other researchers. This data set will include your study data, but it will not include your name or program identity.

If you do cancel your permission to use and disclose your information, your part in this study will end and no further information about you will be collected. Your cancellation would not affect information already collected in this study.

If you join this study:

- You will not own the data given by you to the investigators for this research.
- Any sponsor of this research may study your data collected from you.
- If data are in a form that identifies you, iCOMPARE investigators may use them for future research only with your consent or IRB approval.
- You will not own any product or idea created by the researchers working on this study.
- You will not receive any financial benefit from the creation, use or sale of such a product or idea.

12. What should you do If you have concerns or complaints about the research study?

- You may contact the research staff involved with this study at 215-XXX-XXXX.
- You may contact the Office of Regulatory Affairs with any question, concerns or complaints at the University of Pennsylvania by calling 215-898-2614

13. What does your signature on this consent form mean?

Your signature on this form means that:

- you understand the information given to you in this form
- you accept the provisions in the form
- you agree to join the study

You will not give up any legal rights by signing this consent form.

WE WILL GIVE YOU A COPY OF THIS SIGNED AND DATED CONSENT FORM

I voluntarily consent to participate in this study. I confirm that I have read this consent and authorization document, or it has been read to me and that it explains what this research project is about and how and why it is being done. I will receive a signed and dated copy of this consent form upon my signature.

_____	_____
Intern's Signature	**Date (by Intern)**
_____	_____
Signature of Person Obtaining Consent	**Date**

eoytraineesanon.sas7bdat

This file contains trainee responses to the iCOMPARE-administered end-of-year survey of trainee experiences and perceptions. This survey was administered to all trainees at programs in iCOMPARE during April-June 2015 and again in April-June 2016, provided the program had IRB approval for the activity. Trainees were assumed to provide consent for use of their data if they submitted responses to the survey. Not all programs had IRB approval in time for the 2015 administration. Each record in this file corresponds to a trainee's response during one of those years. Year when the survey was completed is specified in the YRTAKEN variable. Some of the 2015 respondents are very likely 2016 respondents also, but linkage between repeat responses of individual respondents was not collected. Trainee respondent characteristics are limited to duty-hour policy (treatment) group, gender (1=female, 2=male), PGY year (1, 2, or 3 or higher), and specialty (1=internal medicine, 2=med-peds, 3=other) to preserve respondent confidentiality. Linkage of a respondent to a particular program has been broken.

Interns and post intern residents completed different but overlapping and similar sets of questions. There are slight changes in wording in some questions related to year of training or duty-hour rules applicable to the year of training. Both interns and post intern residents completed the Maslach Burnout Inventory - Human Services Form (MBI) as part of this survey. The MBI is a copyrighted questionnaire; use is administered by Mind Garden, Inc (www.mindgarden.com). iCOMPARE obtained permission from Mind Garden, Inc for its use in iCOMPARE; any usage outside the context of iCOMPARE requires permission from Mind Garden, Inc for that use. All respondents answered survey items 1[1]1 (SAS variable Q01), 2[2]2 (SAS variable Q02), and the 22 MBI items (SAS variables MBI1–MBI22). Interns and post intern respondents answered survey questions as indicated below:

Interns		Post Interns	
Survey Section Identifier	**SAS Variable Names**	**Survey Section Identifier**	**SAS Variable Names**
3[3] a-f	q03a–q03f	12[11]3 (2 additional questions for post interns compared to interns)	q11a–q11h
4[3a]3a	q03aa–q03ah	13[11a]3a	q11aa–q11ah
5[4]4	q04a–q04m	14[12]4	q12a–q12m
6[5]5	q05a–q05j	15[13]5	q13a–q13j
7[6]6	q06a–q06f	16[14]6	q14a–q14f
8[7]7	q07a–q07k	17[15]7	q15a–q15k
9 9[8]8	q08a–q08b	18[16]8	q16a–q16b
10[9]9	q09a–q09d	19[17]9	q17a–q17d
11[10]10	q10a–q10d	20[18]10	q18a–q18d

The MBI consists of 22 items; each item is scored 0 (never), 1 (a few times a year), 2 (once a month or less), 3 (a few times a month), 4 (once a week), 5 (a few times a week), or 6 (every day). Three subscale scores are calculated for the MBI - Human Services Form:

Emotional Exhaustion (score 0 to 54; sum of items 1, 2, 3, 6, 8, 13, 14, 16, 20)
Depersonalization (score 0 to 30; sum of items 5, 10, 11, 15, 22)
Personal Accomplishment (score 0 to 48; sum of items 4, 7, 9, 12, 17, 18, 19, 21)

Responses to individual MBI items and calculated subscale scores are included in this file.

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Variable Name	Variable Label	Type	Variable Length
gender	Gender: 1=female, 2=male	Num	8
mbi1	MBI #1: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi2	MBI #2: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi3	MBI #3: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi4	MBI #4: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi5	MBI #5: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi6	MBI #6: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi7	MBI #7: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi8	MBI #8: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi9	MBI #9: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi10	MBI #10: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi11	MBI #11: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi12	MBI #12: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi13	MBI #13: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi14	MBI #14: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi15	MBI #15: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi16	MBI #16: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi17	MBI #17: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi18	MBI #18: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi19	MBI #19: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi20	MBI #20: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi21	MBI #21: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi22	MBI #22: Onevr,1few/yr,2<=1/mo,3few/mo,41/wk,5few/wk,6evryday	Num	8
mbi_depers	MBI depersonalizaiton (0-30; lo=0-6,mod=7-12,hi=>=13)	Num	8
mbi_emoexh	MBI emotional exhaustion (0-54; lo=0-16,mod=17-26,hi=>=27)	Num	8
mbi_persacc	MBI personal accomplshmnt (0-48; lo=0-31,mod=32-38,hi=>=39)	Num	8
q01	Year of residency: 1=PGY1, 2=PGY2, 3=PGY3 or higher	Num	8
q02	Residency specialty: 1=Internal med, 2=Med-peds, 3=Other	Num	8
q03a	Q 3[3] a: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q03aa	Q 4[3a]3a a: 1=Yes, 2=No	Num	8
q03ab	Q 4[3a]3a b: 1=Yes, 2=No	Num	8
q03ac	Q 4[3a]3a c: 1=Yes, 2=No	Num	8
q03ad	Q 4[3a]3a d: 1=Yes, 2=No	Num	8
q03ae	Q 4[3a]3a e: 1=Yes, 2=No	Num	8
q03af	Q 4[3a]3a f: 1=Yes, 2=No	Num	8
q03ag	Q 4[3a]3a g: 1=Yes, 2=No	Num	8
q03ah	Q 4[3a]3a h: 1=Yes, 2=No	Num	8
q03b	Q 3[3] b: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q03c	Q 3[3] c: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q03d	Q 3[3] d: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q03e	Q 3[3] e: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q03f	Q 3[3] f: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q04a	Q 5[4]4 a: 1=Pos effect, 2=No effect, 3=Nege effect	Num	8
q04b	Q 5[4]4 b: 1=Pos effect, 2=No effect, 3=Nege effect	Num	8
q04c	Q 5[4]4 c: 1=Pos effect, 2=No effect, 3=Nege effect	Num	8
q04d	Q 5[4]4 d: 1=Pos effect, 2=No effect, 3=Nege effect	Num	8
q04e	Q 5[4]4 e: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q04f	Q 5[4]4 f: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q04g	Q 5[4]4 g: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8

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Variable Name	Variable Label	Type	Variable Length
q04h	Q 5[4]4 h: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q04i	Q 5[4]4 i: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q04j	Q 5[4]4 j: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q04k	Q 5[4]4 k: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q04l	Q 5[4]4 l: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q04m	Q 5[4]4 m: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q05a	Q 6[5]5 a: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q05b	Q 6[5]5 b: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q05c	Q 6[5]5 c: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q05d	Q 6[5]5 d: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q05e	Q 6[5]5 e: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q05f	Q 6[5]5 f: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q05g	Q 6[5]5 g: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q05h	Q 6[5]5 h: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q05i	Q 6[5]5 i: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q05j	Q 6[5]5 j: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q06a	Q 7[6]6 a: 1StrongAgr, 2Agr, 3Neut, 4Disagr, 5StrongDisagr	Num	8
q06b	Q 7[6]6 b: 1StrongAgr, 2Agr, 3Neut, 4Disagr, 5StrongDisagr	Num	8
q06c	Q 7[6]6 c: 1StrongAgr, 2Agr, 3Neut, 4Disagr, 5StrongDisagr	Num	8
q06d	Q 7[6]6 d: 1StrongAgr, 2Agr, 3Neut, 4Disagr, 5StrongDisagr	Num	8
q06e	Q 7[6]6 e: 1StrongAgr, 2Agr, 3Neut, 4Disagr, 5StrongDisagr	Num	8
q06f	Q 7[6]6 f: 1StrongAgr, 2Agr, 3Neut, 4Disagr, 5StrongDisagr	Num	8
q07a	Q 8[7]7 a: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q07b	Q 8[7]7 b: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q07c	Q 8[7]7 c: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q07d	Q 8[7]7 d: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q07e	Q 8[7]7 e: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q07f	Q 8[7]7 f: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q07g	Q 8[7]7 g: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q07h	Q 8[7]7 h: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q07i	Q 8[7]7 i: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q07j	Q 8[7]7 j: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q07k	Q 8[7]7 k: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q08a	Q 9[8]8 a: 1AlmostAlways,2Often,3Sometimes,4Rarely,5Never	Num	8
q08b	Q 9[8]8 b: 1AlmostAlways,2Often,3Sometimes,4Rarely,5Never	Num	8
q09a	Q10[9]9 a: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q09b	Q10[9]9 b: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q09c	Q10[9]9 c: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q09d	Q10[9]9 d: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q10a	Q11[10] a: 1=Pos effect, 2=No effect, 3=Nege effect	Num	8
q10b	Q11[10] b: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q10c	Q11[10] c: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q10d	Q11[10] d: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q11a	Q12[11]3 a: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q11aa	Q13[11a]3a a: 1=Yes, 2=No	Num	8
q11ab	Q13[11a]3a b: 1=Yes, 2=No	Num	8
q11ac	Q13[11a]3a c: 1=Yes, 2=No	Num	8
q11ad	Q13[11a]3a d: 1=Yes, 2=No	Num	8
q11ae	Q13[11a]3a e: 1=Yes, 2=No	Num	8

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Variable Name	Variable Label	Type	Variable Length
q11af	Q13[11a]3a f: 1=Yes, 2=No	Num	8
q11ag	Q13[11a]3a g: 1=Yes, 2=No	Num	8
q11ah	Q13[11a]3a h: 1=Yes, 2=No	Num	8
q11b	Q12[11]3 b: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q11c	Q12[11]3 c: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q11d	Q12[11]3 d: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q11e	Q12[11]3 e: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q11f	Q12[11]3 f: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q11g	Q12[11]3 g: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q11h	Q12[11]3 h: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q12a	Q14[12]4 a: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q12b	Q14[12]4 b: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q12c	Q14[12]4 c: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q12d	Q14[12]4 d: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q12e	Q14[12]4 e: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q12f	Q14[12]4 f: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q12g	Q14[12]4 g: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q12h	Q14[12]4 h: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q12i	Q14[12]4 i: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q12j	Q14[12]4 j: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q12k	Q14[12]4 k: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q12l	Q14[12]4 l: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q12m	Q14[12]4 m: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q13a	Q15[13]5 a: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q13b	Q15[13]5 b: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q13c	Q15[13]5 c: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q13d	Q15[13]5 d: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q13e	Q15[13]5 e: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q13f	Q15[13]5 f: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q13g	Q15[13]5 g: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q13h	Q15[13]5 h: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q13i	Q15[13]5 i: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q13j	Q15[13]5 j: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q14a	Q16[14]6 a: 1StrongAgr,2Agr,3Neut,4Disagr,5StrongDisagr	Num	8
q14b	Q16[14]6 b: 1StrongAgr,2Agr,3Neut,4Disagr,5StrongDisagr	Num	8
q14c	Q16[14]6 c: 1StrongAgr,2Agr,3Neut,4Disagr,5StrongDisagr	Num	8
q14d	Q16[14]6 d: 1StrongAgr,2Agr,3Neut,4Disagr,5StrongDisagr	Num	8
q14e	Q16[14]6 e: 1StrongAgr,2Agr,3Neut,4Disagr,5StrongDisagr	Num	8
q14f	Q16[14]6 f: 1StrongAgr,2Agr,3Neut,4Disagr,5StrongDisagr	Num	8
q15a	Q17[15]7 a: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q15b	Q17[15]7 b: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q15c	Q17[15]7 c: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q15d	Q17[15]7 d: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q15e	Q17[15]7 e: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q15f	Q17[15]7 f: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q15g	Q17[15]7 g: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q15h	Q17[15]7 h: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q15i	Q17[15]7 i: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q15j	Q17[15]7 j: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8

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Variable Name	Variable Label	Type	Variable Length
q15k	Q17[15]7 k: 1VerySatis,2Satis,3Neut,4Dissatis,5VeryDissatis	Num	8
q16a	Q18[16]8 a: 1AlmostAlways,2Often,3Sometimes,4Rarely,5Never	Num	8
q16b	Q18[16]8 b: 1AlmostAlways,2Often,3Sometimes,4Rarely,5Never	Num	8
q17a	Q19[17]9 a: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q17b	Q19[17]9 b: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q17c	Q19[17]9 c: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q17d	Q19[17]9 d: 1=0 times, 2=1-2, 3=3-5, 4=6-10, 5=>10 times	Num	8
q18a	Q20[18] a: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q18b	Q20[18] b: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q18c	Q20[18] c: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
q18d	Q20[18] d: 1=Pos effect, 2=No effect, 3=Neg effect	Num	8
trtgrp	Duty-hour policy group: FLEX or STND	Char	4
yrtaken	Year survey was completed (char): 2015 or 2016	Char	4

End-of-year trainee survey

iCOMPARE Baseline

Baseline End of Year survey to Internal Medicine Interns and Residents

Beginning July 1, 2015, your Internal Medicine Residency program has enrolled in a study about resident duty hours and patient safety, iCOMPARE. This study is intended to inform future national duty hour policies. As part of this work, we are asking all interns and residents to take the following baseline (pre-study) survey. We estimate that it will take about 10-15 minutes to complete. The data will go directly to a secure server. Your program director and chair will never have access to your individual responses. The only identifier attached to individual responses will be the program ID. All data will be aggregated for analyses and reporting.

There are 21 questions in this survey

Opening Questions

1 [1]1. What year residency are you currently enrolled in? *

Please choose **only one** of the following:

- ○PGY1
- ○PGY2
- ○PGY3
- ○PGY4
- ○PGY5
- ○Other

q01

2 [2]2. What specialty is your residency program: *

Please choose **only one** of the following:

- ○Internal medicine (categorical, primary care, research track, etc)
- ○Med-peds
- ○Med-derm
- ○Other

q02

Intern Items

3 [3]During your most recent month on a MEDICINE FLOOR rotation, approximately how many times did you do the following? *

Only answer this question if the following conditions are met:
° Answer was 'PGY1' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

	1 0 times	2 1-2 times	3 3-5 times	4 6-10 times	5 > 10 times
a. leave or miss educational conferences during a scheduled shift because of duty hour limits	○	○	○	○	○
b. handoff an active patient care issue because of duty hour limits	○	○	○	○	○
c. leave during a patient encounter because of duty hour limits	○	○	○	○	○
d. miss a patient encounter (e.g. family meeting) because of duty hour limits	○	○	○	○	○
e. work more than 16 hours continuously in house	○	○	○	○	○
f. have < 8 hours off between shifts	○	○	○	○	○

q03a-q03f

4 [3a]3a. Please indicate the reasons you worked >16 hours or had <8 hours off between shifts (yes/no for each)

Only answer this question if the following conditions are met:
°

-------- Scenario 1 --------

Answer was 'PGY1' at question '1 [1]' (1. What year residency are you currently enrolled in?) *and* Answer was '3-5 times' or '1-2 times' or '6-10 times' or '> 10 times' at question '3 [3]' (During your most recent month on a MEDICINE FLOOR rotation, approximately how many times did you do the following? (e. work more than 16 hours continuously in house))

-------- or Scenario 2 --------

Answer was '1-2 times' or '3-5 times' or '6-10 times' or '> 10 times' at question '3 [3]' (During your most recent month on a MEDICINE FLOOR rotation, approximately how many times did you do the following? (f. have < 8 hours off between shifts))

Please choose the appropriate response for each item:

	1 Yes	2 No
a. to perform routine responsibilities	○	○
b. to facilitate care transitions (e.g. signing out patients, transferring patient to ICU)	○	○
c. to stabilize critically ill patients	○	○
d. to complete an admission	○	○
e. to return to work when off-duty because my patient's condition worsened	○	○
f. to complete documentation (i.e. daily notes, discharge summaries, prescriptions,	○	○

q03aa-q03af

	1 Yes	2 No
etc)		
g. to attend educational conferences or activities	○	○
h. to round with the team	○	○

q03ag-q03ah

5 [4]4. Overall, how do the intern duty hour regulations for this academic year (July 2014-present) at your main hospital affect: *

Only answer this question if the following conditions are met:
° Answer was 'PGY1' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

	1 Positive effect	2 No effect	3 Negative effect
a. Safety of patient care	○	○	○
b. Continuity of care (ability to provide the highest level and extent of clinical care and oversight for your patients without forced interruptions or handoffs)	○	○	○
c. Ability to attend required educational conferences	○	○	○
d. Ability to acquire clinical skills	○	○	○
e. Ability to acquire clinical reasoning skills	○	○	○
f. Intern autonomy	○	○	○

q04a-q04f

q03aa-q03af

	1 Positive effect	2 No effect	3 Negative effect
g. Number of patients interns fully evaluate on admission to the hospital	○	○	○
h. Intern availability for elective patient care encounters(e.g. family meeting)	○	○	○
i. Intern availability for urgent patient care encounters(e.g. RRTs/codes; end of life discussion)	○	○	○
j. Time to teach medical students	○	○	○
k. The relationship between interns and all other residents	○	○	○
l. Professionalism	○	○	○
m. Intern morale	○	○	○

q04g-q04m

6 [5]5. Overall, how do the intern duty hour regulations for this academic year (July 2014-present)at your main hospital affect: *

Only answer this question if the following conditions are met:
° Answer was 'PGY1' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

	1 Positive effect	2 No effect	3 Negative effect
a. Your need to perform patient care related	○	○	○

q05a

	1 Positive effect	2 No effect	3 Negative effect
work outside of the hospital. (e.g., review medical record, read)		**q05b-q05j**	
b. The pace of your work day	○	○	○
c. Your ability to participate in research	○	○	○
d. Your satisfaction with your job	○	○	○
e. Your satisfaction with the decision to become a physician	○	○	○
f. Your time for family and friends	○	○	○
g. Your time for hobbies and outside interests	○	○	○
h. Your health	○	○	○
i. How well-rested you feel	○	○	○
j. Your overall wellbeing	○	○	○

7 [6]6. Please tell us whether you agree or disagree with the following statements about your main hospital: *

Only answer this question if the following conditions are met:
° Answer was 'PGY1' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

q06a	1 Strongly Agree	2 Agree	3 Neutral	4 Disagree	5 Strongly Disagree
a. Interns/residents	○	○	○	○	○

	1 Strongly Agree	2 Agree	3 Neutral	4 Disagree	5 Strongly Disagree
have adequate faculty supervision					
b. Interns/residents are involved in quality improvement initiatives	○	○	○	○	○
c. The culture emphasizes patient safety	○	○	○	○	○
d. Information is exchanged effectively between interns/residents during transitions in care	○	○	○	○	○
e. Interns/residents work well in interdisciplinary teams	○	○	○	○	○
f. Interns/residents are well versed in fatigue management and mitigation strategies	○	○	○	○	○

q06b-q06f

8 [7]7. Thinking back on <u>the last 6 months</u> (December 2014 to present), how satisfied were you with the following? *

Only answer this question if the following conditions are met:
° Answer was 'PGY1' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

q07a-q07k	1 Very Satisfied	2 Satisfied	3 Neutral	4 Dissatisfied	5 Very Dissatisfied
a. Continuity of care	○	○	○	○	○
b. Patient safety	○	○	○	○	○
c. Level of attending supervision	○	○	○	○	○
d. Work hours and scheduling	○	○	○	○	○
e. Quality and ease of handoffs and transitions in care	○	○	○	○	○
f. Quality of overall resident education	○	○	○	○	○
g. Time for rest	○	○	○	○	○
h. Your overall wellbeing	○	○	○	○	○
i. Your program's duty hour regulations	○	○	○	○	○
j. Your ability to follow the clinical care of the patients you admit	○	○	○	○	○
k. Number of patients you got to admit completely (ie, someone else did not start or complete the task of admitting the patient).	○	○	○	○	○

9 [8]8. Thinking back on <u>the last 6 months</u> (December 2014 to present), how often did you feel that your fatigue affected: *

Only answer this question if the following conditions are met:
° Answer was 'PGY1' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

q08a-q08b	1 Almost always	2 Often	3 Sometimes	4 Rarely	5 Never
a. Your personal safety	○	○	○	○	○
b. Patient safety	○	○	○	○	○

10 [9]9. Thinking back to <u>your last two weeks</u> of inpatient medicine, how many time did you personally witness: *

Only answer this question if the following conditions are met:
° Answer was 'PGY1' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

	1 0 times	2 1-2 times	3 3-5 times	4 6-10 times	5 > 10 times
a. A patient error that resulted from intern/resident fatigue	○	○	○	○	○
b. A patient error that resulted from an inadequate handoff?	○	○	○	○	○
c. A patient error that resulted from the responding intern/resident now knowing the patient well enough?	○	○	○	○	○
d. A delay in patient discharge that was due to ineffective communication between team members?	○	○	○	○	○

q09a-q09d

11 [10]

10. The following are the current standard duty hour regulations as put forth by the ACGME:

Regulation 1. 16 hour maximum for interns

Regulation 2.8-10 hours off between shifts

Regulation 3.28 hour maximum shift for residents

Regulation 4.14 hours off after a 24 hour shift

If duty hour rules were simplified to eliminate the duty hour regulations listed above (while maintaining the 80 hour work week, one day off in 7, and, call no more frequently than every third night, all averaged over 4 weeks), what effect do you believe it would have on:

*

Only answer this question if the following conditions are met:
° Answer was 'PGY1' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

	1 Positive effect	2 No effect	3 Negative effect
a. Safety of patient care	○	○	○
b. Continuity of care	○	○	○
c. Quality of resident education	○	○	○
d. Quality of life	○	○	○

q10a-q10d

Post Intern Items

12 [11]3. During your most recent month on a MEDICINE FLOOR rotation, approximately how many times did you do the following? *

Only answer this question if the following conditions are met:
° Answer was 'PGY5' or 'Other' or 'PGY2' or 'PGY3' or 'PGY4' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

q11a-q11h	1 0 times	2 1-2 times	3 3-5 times	4 6-10 times	5 > 10 times
a. leave or miss educational conferences during a scheduled shift because of duty hour limits	○	○	○	○	○
b. handoff an active patient care issue because of duty hour limits	○	○	○	○	○
c. leave during a patient encounter because of duty hour limits	○	○	○	○	○
d. miss a patient encounter (e.g. family meeting) because of duty hour limits	○	○	○	○	○
e. return to the hospital to care for a patient on your service	○	○	○	○	○
f. work more than 28 hours continuously in house	○	○	○	○	○
g. have < 8 hours off between daily shifts	○	○	○	○	○
h. have <14 hours off after being on call	○	○	○	○	○

13 [11a]3a. Please indicate the reasons you worked >28 hours, had <8 hours off between shifts or <14 hours off after being on call (yes/no for each) *

Only answer this question if the following conditions are met:
°

-------- Scenario 1 --------

Answer was '1-2 times' or '> 10 times' or '3-5 times' or '6-10 times' at question '12 [11]' (3. During your most recent month on a MEDICINE FLOOR rotation, approximately how many times did you do the following? (f. work more than 28 hours continuously in house))

-------- or Scenario 2 --------

Answer was '1-2 times' or '3-5 times' or '6-10 times' or '> 10 times' at question '12 [11]' (3. During your most recent month on a MEDICINE FLOOR rotation, approximately how many times did you do the following? (g. have < 8 hours off between daily shifts))

-------- or Scenario 3 --------

Answer was '1-2 times' or '3-5 times' or '6-10 times' or '> 10 times' at question '12 [11]' (3. During your most recent month on a MEDICINE FLOOR rotation, approximately how many times did you do the following? (h. have <14 hours off after being on call))

Please choose the appropriate response for each item:

	1 Yes	2 No
a. to perform routine responsibilities	○	○
b. to facilitate care transitions (e.g. signing out patients, transferring patient to ICU)	○	○
c. to stabilize critically ill patients	○	○
d. to complete an admission	○	○
e. to return to work when off-duty because my patient's condition worsened	○	○
f. to complete documentation (i.e. daily notes, discharge summaries, prescriptions,	○	○

q11aa-q11af

q11ag-q11ah

	1 Yes	2 No
etc)		
g. to attend educational conferences or activities	○	○
h. to round with the team	○	○

14 [12]4. Overall, how do the resident duty hour regulations for this academic year (July 2014-present) at your main hospital affect: *

Only answer this question if the following conditions are met:
° Answer was 'Other' or 'PGY5' or 'PGY4' or 'PGY3' or 'PGY2' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

q12a-q12f

	1 Positive effect	2 No effect	3 Negative effect
a. Safety of patient care	○	○	○
b. Continuity of care (ability to provide the highest level and extent of clinical care and oversight for your patients without forced interruptions or handoffs)	○	○	○
c. Ability to attend required educational conferences	○	○	○
d. Ability to acquire clinical skills	○	○	○
e. Ability to acquire clinical reasoning skills	○	○	○
f. Resident autonomy	○	○	○

	1 Positive effect	2 No effect	3 Negative effect
g. Number of patients interns fully evaluate on admission to the hospital	○	○	○
h. Resident availability for elective patient care encounters(e.g. family meeting)	○	○	○
i. Resident availability for urgent patient care encounters(e.g. RRTs/codes; end of life discussion)	○	○	○
j. Time to teach medical students	○	○	○
k. The relationship between interns and all other residents	○	○	○
l. Professionalism	○	○	○
m. Resident morale	○	○	○

q12g-q12m

15 [13]5. Overall, how do the resident duty hour regulations for this academic year (July 2014-present)at your main hospital affect: *

Only answer this question if the following conditions are met:
° Answer was 'Other' or 'PGY5' or 'PGY4' or 'PGY3' or 'PGY2' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

	1 Positive effect	2 No effect	3 Negative effect
a. Your need to perform patient	○	○	○

q13a

q13b-q13j	1 Positive effect	2 No effect	3 Negative effect
care related work outside of the hospital. (e.g., review medical record, read)			
b. The pace of your work day	○	○	○
c. Your ability to participate in research	○	○	○
d. Your satisfaction with your job	○	○	○
e. Your satisfaction with the decision to become a physician	○	○	○
f. Your time for family and friends	○	○	○
g. Your time for hobbies and outside interests	○	○	○
h. Your health	○	○	○
i. How well-rested you feel	○	○	○
j. Your overall wellbeing	○	○	○

16 [14]6. Please tell us whether you agree or disagree with the following statements about your main hospital: *

Only answer this question if the following conditions are met:
° Answer was 'Other' or 'PGY4' or 'PGY5' or 'PGY3' or 'PGY2' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

q14a-q14f	1 Strongly Agree	2 Agree	3 Neutral	4 Disagree	5 Strongly Disagree
a. Interns/residents have adequate faculty supervision	○	○	○	○	○
b. Interns/residents are involved in quality improvement initiatives	○	○	○	○	○
c. The culture emphasizes patient safety	○	○	○	○	○
d. Information is exchanged effectively between interns/residents during transitions in care	○	○	○	○	○
e. Interns/residents work well in interdisciplinary teams	○	○	○	○	○
f. Interns/residents are well versed in fatigue management and mitigation strategies	○	○	○	○	○

17 [15]7. Thinking back on <u>the last 6 months</u> (December 2014 to present), how satisfied were you with the following? *

Only answer this question if the following conditions are met:
° Answer was 'PGY4' or 'PGY2' or 'PGY3' or 'Other' or 'PGY5' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

q15a-q15k	1 Very Satisfied	2 Satisfied	3 Neutral	4 Dissatisfied	5 Very Dissatisfied
a. Continuity of care	○	○	○	○	○
b. Patient safety	○	○	○	○	○
c. Level of attending supervision	○	○	○	○	○
d. Work hours and scheduling	○	○	○	○	○
e. Quality and ease of handoffs and transitions in care	○	○	○	○	○
f. Quality of overall resident education	○	○	○	○	○
g. Time for rest	○	○	○	○	○
h. Your overall wellbeing	○	○	○	○	○
i. Your program's duty hour regulations	○	○	○	○	○
j. Your ability to follow the clinical care of the patients you admit	○	○	○	○	○
k. Number of patients you got to admit completely (ie, someone else did not start or complete the task of admitting the patient).	○	○	○	○	○

18 [16]8. Thinking back on <u>the last 6 months</u> (December 2014 to present), how often did you feel that your fatigue affected *

Only answer this question if the following conditions are met:
° Answer was 'Other' or 'PGY3' or 'PGY5' or 'PGY2' or 'PGY4' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

q16a-q16b	1 Almost always	2 Often	3 Sometimes	4 Rarely	5 Never
a. Your personal safety	○	○	○	○	○
b. Patient safety	○	○	○	○	○

19 [17]9. Thinking back to your last two weeks of inpatient medicine, how many time did you personally witness: *

Only answer this question if the following conditions are met:
° Answer was 'PGY2' or 'PGY3' or 'PGY4' or 'Other' or 'PGY5' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

	1 0 times	2 1-2 times	3 3-5 times	4 6-10 times	5 > 10 times
a. A patient error that resulted from intern/resident fatigue	○	○	○	○	○
b. A patient error that resulted from an inadequate handoff	○	○	○	○	○
c. A patient error that resulted from the responding intern/resident not knowing the patient well enough	○	○	○	○	○
d. A delay in patient discharge that was due to ineffective	○	○	○	○	○

q17a-q17d

	1	2	3	4	5
	0 times	1-2 times	3-5 times	6-10 times	> 10 times
communication between team members					

20 [18]

10. The following are the current standard duty hour regulations as put forth by the ACGME:

Regulation 1. 16 hour maximum for interns

Regulation 2.8-10 hours off between shifts

Regulation 3. 28 hour maximum shift for residents

Regulation 4.14 hours off after a 24 hour shift

If duty hour rules were simplified to eliminate the duty hour regulations listed above (while maintaining the 80 hour work week, one day off in 7, and, call no more frequently than every third night, all averaged over 4 weeks), what effect do you believe it would have on:

*

Only answer this question if the following conditions are met:
° Answer was 'PGY4' or 'PGY3' or 'PGY2' or 'PGY5' or 'Other' at question '1 [1]' (1. What year residency are you currently enrolled in?)

Please choose the appropriate response for each item:

	1 Positive effect	2 No effect	3 Negative effect
a. Safety of patient care	○	○	○
b. Continuity of care	○	○	○
c. Quality of resident education	○	○	○
d. Quality of life	○	○	○

q18a-q18d

Maslach Burnout Inventory

21 [MBI]Please read each statement carefully and decide if you ever feel this way *about your job*. If you have *never* had this feeling, mark a "0" (zero). If you have had this feeling, indicate *how often* you feel it by marking the number from 1 to 6 that best describes how frequently you feel that way.

How often:

M

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*****

Please choose the appropriate response for each item:

mbi1-mbi6	never (0)	a few times a year (1)	once a month or less (2)	a few times a month (3)	once a week (4)	a few times a week (5)	every day (6)
1. I feel emotionally drained from my work.	○	○	○	○	○	○	○
2. I feel used up at the end of the workday.	○	○	○	○	○	○	○
3. I feel fatigued when I get up in the morning and have to face another day on the job.	○	○	○	○	○	○	○
4. I can easily understand how my patients feel about things.	○	○	○	○	○	○	○
5. I feel as if I treat some patients as if they were impersonal objects.	○	○	○	○	○	○	○
6. Working with people all day is really a strain for	○	○	○	○	○	○	○

mbi7-mbi18	never (0)	a few times a year (1)	once a month or less (2)	a few times a month (3)	once a week (4)	a few times a week (5)	every day (6)
me.							
7. I deal very effectively with the problems of my patients.	○	○	○	○	○	○	○
8. I feel burned out from my work.	○	○	○	○	○	○	○
9. I feel I'm positively influencing other people's lives through my work.	○	○	○	○	○	○	○
10. I've become more callous toward people since I took this job.	○	○	○	○	○	○	○
11. I worry that this job is hardening me emotionally.	○	○	○	○	○	○	○
12. I feel very energetic.	○	○	○	○	○	○	○
13. I feel frustrated by my job.	○	○	○	○	○	○	○
14. I feel I'm working too hard on my job.	○	○	○	○	○	○	○
15. I don't really care what happens to some patients.	○	○	○	○	○	○	○
16. Working with people directly puts too much stress on me.	○	○	○	○	○	○	○
17. I can easily create a relaxed atmosphere with my patients.	○	○	○	○	○	○	○
18. I feel exhilarated after	○	○	○	○	○	○	○

mbi19-mbi22	never (0)	a few times a year (1)	once a month or less (2)	a few times a month (3)	once a week (4)	a few times a week (5)	every day (6)
working closely with my patients.							
19. I have accomplished many worthwhile things in this job.	○	○	○	○	○	○	○
20. I feel like I'm at the end of my rope.	○	○	○	○	○	○	○
21. In my work, I deal with emotional problems very calmly.	○	○	○	○	○	○	○
22. I feel patients blame me for some of their problems.	○	○	○	○	○	○	○

Submit your survey.
Thank you for completing this survey.

iteanon.sas7bdat

This file contains the American College of Physicians (ACP) internal medicine in-training examination score (percent of questions answered correctly) categorized as:

1 = <=60
2 = 61-65
3 = 66-70
4 = 71-75
5 = >=76

The ACP provided scores for trainees at the iCOMPARE programs in 2015 and scores for trainees at the iCOMPARE programs in 2016 if the trainee had indicated consent to use their score for research. The YRTAKEN variable indicates the year the score was obtained. Scores for a trainee who took the exam in both 2015 and 2016 cannot be linked, and the degree of overlap in trainees across years is not known. Linkage of a score to a particular program has been broken. Trainee duty-hour policy (treatment) group is provided. Trainee post graduate year (PGY) level is provided as 1, 2 or 3.

iteanon - American College of Physicians internal medicine ITE score

Date file created: 01 Mar 2019
Observations: 9371
Variables: 4

Variable Name	Variable Label	Type	Variable Length
itegrp	Grouped ITE score: 1=<=60,2=61-65,3=66-70,4=71-75,5=>=76	Num	8
pgy	Post graduate year: 1, 2, or 3	Num	8
trtgrp	Duty-hour policy group: FLEX or STND	Char	4
yrtaken	Year exam was taken (char): 2015 or 2016	Char	4

jit1anon.sas7bdat

This file contains responses to the iCOMPARE administered just-in-time (JIT) survey 1. Trainees were assumed to provide consent for use of their data if they submitted responses to the survey. The JIT surveys had 2 formats, JIT1 and JIT2, and were each administered from August 2015 through May 2016 (16 cycles). Each trainee received the JIT1 survey every 2 weeks. Repeated observations of the JIT1 survey on the same trainee (i.e., responses from the same trainee over the up to 16 cycles) may be linked by the cnewid variable, but the link to a particular program has been broken. The cycle identifier variable is CYCLE. Trainee post graduate year (PGY) level is provided as 1, 2 or 3. Trainee duty-hour policy (treatment) group is provided. Both JIT surveys started with 2 questions querying the nature of the rotation that the trainee was on in the past 24 hours. Rotation (ROTATION variable) is coded as:

1=non-inpatient rotation (main teaching hospital)
2=non-inpatient rotation (a setting other than the main teaching hospital)
3=inpatient (main teaching hospital)
4=inpatient (a setting other than the main teaching hospital)
5=vacation or off day
6=other

Specific inpatient rotation (INP_ROTA variable) is coded as:

1=general medicine
2=CCU
3=MICU
4=cardiology
5=endocrinology
6=gastroenterology
7=geriatrics
8=infectious disease
9=nephrology
10=neurology
11=oncology
12=pulmonary
13=rheumatology
14=other inpatient rotation

JIT1 then asks 3 questions about the past 24 hours: number of new patient evaluations completed, number of handoffs the trainee participated in, and number of patients admitted in the past 24 hours for whom the trainee was the primary provider.

A trainee's responses to the JIT1 survey may be linked to the trainee's responses to the JIT2 survey by the cnewid variable but be careful not to overwrite the CYCLE, PGY, ROTATION, and INP_ROTA variables.

jit1anon - iCOMPARE just-in-time survey 1 for trainees

Date file created: 05 Apr 2019
Observations: 19905
Variables: 9

Variable Name	Variable Label	Type	Variable Length
cnewid	New trainee ID -- Jnnnn, same across both JITs	Char	5
cycle	JIT cycle number (1-16)	Num	8
handoffs	No. of handoffs in past 24 hrs	Num	8
inp_rota	1GM2CCU3MICU4Card5End6Gas7Ger8ID9Neph10Neu11Onc12Pul13Rheu14Oth	Num	8
pgy	Residency year (PGY; numeric) -- 1, 2, or 3	Num	8
primary	Of pts admit by resid in 24hrs, no. resid was primary prvidr for	Num	8
pt_evals	No. of new patient evaluations in past 24 hrs	Num	8
rotation	1=noninpt-mth,2=noninpt-nmth,3=inp-mth,4=inp-nmth,5=vac,6=oth	Num	8
trtgrp	Duty-hour policy group: FLEX or STND	Char	4

iCOMPARE Daily Survey 1

iCOMPARE Daily Survey

Just In Time (JIT) Survey 1

Welcome to the iCOMPARE daily survey. We have 3 or 4 questions about your work during the past 24 hours. The survey is confidential. Your name will not be attached to your answers. If you complete it you will be eligible for a lottery prize. Thanks in advance!

Think back over the past 24 hours. What rotation were you on?

1 ◯ Non-inpatient rotation (main teaching hospital)
2 ◯ Non-inpatient rotation (a setting other than the main teaching hospital)
3 ◯ Inpatient (main teaching hospital)
4 ◯ Inpatient (a setting other than the main teaching hospital)
5 ◯ Vacation/Off day
6 ◯ Other

Inpatient:

1 ◯ General Medicine
2 ◯ CCU
3 ◯ MICU
4 ◯ Cardiology
5 ◯ Endocrinology
6 ◯ Gastroenterology
7 ◯ Geriatrics
8 ◯ Infectious Disease
9 ◯ Nephrology
10 ◯ Neurology
11 ◯ Oncology
12 ◯ Pulmonary
13 ◯ Rheumatology
14 ◯ Other inpatient rotation

1. In the past 24 hours, how many new patient evaluations did you complete? (enter number) _____

2. In the past 24 hours, how many handoffs did you participate in? (enter number) _____

3. Primary providers are responsible for assessing, advancing and documenting the patient's care and plans every day, and own the relationship between the care team and the patient. Of the patients you admitted In the past 24 hours, for how many will you be the primary provider? (enter number) _____

jit2anon.sas7bdat

This file contains responses to the iCOMPARE administered just-in-time (JIT) survey 2. Trainees were assumed to provide consent for use of their data if they submitted responses to the survey. The JIT surveys had 2 formats, JIT1 and JIT2, and were each administered from August 2015 through May 2016 (16 cycles). Each trainee received the JIT2 survey every 2 weeks. Repeated observations of the JIT2 survey on the same trainee (i.e., responses from the same trainee over the up to 16 cycles) may be linked by the cnewid variable, but the link to a particular program has been broken. The cycle identifier variable is CYCLE. Trainee post graduate year (PGY) level is provided as 1, 2 or 3. Trainee duty-hour policy (treatment) group is provided. Both JIT surveys started with 2 questions querying the nature of the rotation that the trainee was on in the past 24 hours. Rotation (ROTATION variable) is coded as:

1=non-inpatient rotation (main teaching hospital)
2=non-inpatient rotation (a setting other than the main teaching hospital)
3=inpatient (main teaching hospital)
4=inpatient (a setting other than the main teaching hospital)
5=vacation or off day
6=other

Specific inpatient rotation (INP_ROTA variable) is coded as:

1=general medicine
2=CCU
3=MICU
4=cardiology
5=endocrinology
6=gastroenterology
7=geriatrics
8=infectious disease
9=nephrology
10=neurology
11=oncology
12=pulmonary
13=rheumatology
14=other inpatient rotation

JIT2 then asks 4 questions about the trainee's perceptions of his/her experience in the past 24 hours: time for education conference and related activities, sense of ownership of patients, work intensity, and continuity of care. Each question is scored:

1 = too little
2 = just right
3 = too much

A trainee's responses to the JIT2 survey may be linked to the trainee's responses to the JIT1 survey by the cnewid variable but be careful not to overwrite the CYCLE, PGY, ROTATION, and INP_ROTA variables.

jit2anon - iCOMPARE just-in-time survey 2 for trainees

Date file created: 05 Apr 2019
Observations: 20000
Variables: 10

Variable Name	Variable Label	Type	Variable Length
cnewid	New trainee ID -- Jnnnn, same across both JITs	Char	5
contcare	Continuity of care: 1=too little,2=just right,3=too much	Num	8
cycle	JIT cycle number (1-16)	Num	8
educonf	Time for educ:1=too little,2=just right,3=too much	Num	8
inp_rota	1GM2CCU3MICU4Card5End6Gas7Ger8ID9Neph10Neu11Onc12Pul13Rheu14Oth	Num	8
intensity	Work intensity: 1=too little,2=just right,3=too much	Num	8
ownership	Sense of ownership of pts: 1=too little,2=just right,3=too much	Num	8
pgy	Residency year (PGY; numeric) -- 1, 2, or 3	Num	8
rotation	1=noninpt-mth,2=noninpt-nmth,3=inp-mth,4=inp-nmth,5=vac,6=oth	Num	8
trtgrp	Duty-hour policy group: FLEX or STND	Char	4

iCOMPARE Daily Survey 2

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Just in time (JIT) survey 2

iCOMPARE Daily Survey

Welcome to the iCOMPARE daily survey. We have 3 or 4 questions about your work during the past 24 hours. The survey is confidential. Your name will not be attached to your answers. If you complete it you will be eligible for a lottery prize. Thanks in advance!

Please complete the survey below.

Think back over the past 24 hours. What rotation were you on?

1 ◯ Non-inpatient rotation (main teaching hospital)
2 ◯ Non-inpatient rotation (a setting other than the main teaching hospital)
3 ◯ Inpatient (main teaching hospital)
4 ◯ Inpatient (a setting other than the main teaching hospital)
5 ◯ Vacation/Off day
6 ◯ Other

Inpatient:

1 ◯ General Medicine
2 ◯ CCU
3 ◯ MICU
4 ◯ Cardiology
5 ◯ Endocrinology
6 ◯ Gastroenterology
7 ◯ Geriatrics
8 ◯ Infectious Disease
9 ◯ Nephrology
10 ◯ Neurology
11 ◯ Oncology
12 ◯ Pulmonary
13 ◯ Rheumatology
14 ◯ Other inpatient rotation

Rate your experience with each of the following items over the past 24 hours:

	1 TOO LITTLE	2 JUST RIGHT	3 TOO MUCH
1. Time for educational conference and related activities	◯	◯	◯
2. Sense of ownership of patients	◯	◯	◯
3. Work intensity	◯	◯	◯
4. Continuity of care	◯	◯	◯

sa_censusanon.sas7bdat

This file contains the Sleep and Alertness Substudy census, 1 record per participating intern. Each intern participant in this Substudy signed a written consent statement indicating consent for use of their data. 398 interns participated in the substudy, 205 at Flexible programs and 193 at Standard programs. During the substudy, each participating intern wore an actigraph and completed a morning survey on the substudy smartphone on each of up to 15 days (summing to 14 periods of 24 hours of sleep/wake observation) during a general medicine, intensive care unit, cardiology or coronary care rotation.

Personal characteristic data are limited to grouped age to preserve participant confidentiality. Links to a particular program or particular calendar day have been broken. Each participant has a unique identifier (NEWPTID) which can be used to link records for a particular intern across the 3 Sleep and Alertness Substudy files (census, summary data, time series data).

This census file provides grouped age of the intern (26 or younger, 27-29, 30 or older) and duty-hour policy group.

sa_censusanon - Sleep and Alertness Substudy census data

Date file created: 24 Apr 2019
Observations: 398
Variables: 3

Variable Name	Variable Label	Type	Variable Length
grpage	Age group: 1=<=26,2=27-29,3=>=30	Num	8
newptid	Subject ID (xxxx, char)	Char	4
trtgrp	Duty-hour policy group: FLEX or STND	Char	4

sa_sumdatanon.sas7bdat

This file contains summary daily Sleep and Alertness Substudy data. Each intern participant in this Substudy signed a written consent statement indicating consent for use of their data. The data are derived from actigraph data and smartphone survey data. 398 interns participated in the substudy, 205 at Flexible programs and 193 at Standard programs. During the substudy, each participating intern wore the actigraph and completed a morning survey on the substudy smartphone on each of up to 15 days during a general medicine, intensive care unit, cardiology or coronary care rotation. On each of those days, the participant completed a brief survey in the morning including the Karolinska Sleepiness Score and a brief Psychomotor Vigilance Test (PVT-B), as well as questions about sleepiness, shift type, and timing.

Each record in this file encompasses summary data for one intern (NEWPTID) and one day (STUDYDAY) and includes the day's survey responses, KSS and PVT-B values, and total numbers of minutes awake, asleep, and unknown based on the STATEFIN data in the sa_timeseriesanon.sas7bdat file. The daily observations for an intern can be linked using the NEWPTID variable, but the link to a particular program or particular calendar day has been broken. Detailed descriptions of variables in this file are:

ADHFLAG: Indicator variable for intern's adherence to PVT-B protocol on this STUDYDAY; determined by sleep experts blinded to duty-hour policy group and coded as:

0 = adherent
1 = possibly non adherent
2 = non adherent (intern heavily distracted by other activities)

COLLMIN: The total number of minutes on this STUDYDAY that the actigraph was collecting data; COLLMIN=ONMIN+OFFMIN

DAYENDTIM: End time of the data collection window for this STUDYDAY. Time is in local time and in format hh:mm:00.000 (resolution to 1 minute). STUDYDAYs 1 to 14 will have a value of 23:59:59.000. STUDYDAY 15 will have a value corresponding to the start time of data collection on STUDYDAY 1 (so that we end with 14 days of data, each covering 24 hours).

DAYSTRTTI: Start time of the data collection window for this STUDYDAY. Time is in local time and in format hh:mm:00.000 (resolution to 1 minute). On STUDYDAY 1, the time is based on the time the intern began wearing the actigraph. STUDYDAYs 2-15 will have a value of 00:00:00.000 (midnight).

EXCSSLPQ1: Intern's self-report rating of excessive sleepiness (1=yes, 0=no) in the past 24 hours between 12 am and 6 am on this STUDYDAY

EXCSSLPQ2: Intern's self-report rating of excessive sleepiness (1=yes, 0=no) in the past 24 hours between 6 am and 12 noon on this STUDYDAY

EXCSSLPQ3: Intern's self-report rating of excessive sleepiness (1=yes, 0=no) in the past 24 hours between 12 noon and 6 pm on this STUDYDAY

EXCSSLPQ4: Intern's self-report rating of excessive sleepiness (1=yes, 0=no) in the past 24 hours between 6 pm and 12 am on this STUDYDAY

NOEXCSSLP: Derived report of excessive sleepiness in past 24 hrs on this STUDYDAY coded as

1 = no excessive sleepiness in past 24 hours (all 4 questions answered as No)
0 = at least 1 of the 4 excessive sleepiness questions answered as Yes

EXPMIN: The number of minutes of actigraphy expected for this STUDYDAY. STUDYDAYs 2 to 14 will each be 1440 minutes, and STUDYDAYs 1 and 15 will combine to a total of 1440 minutes (unless the STUDYDAY included the start of daylight savings time); EXPMIN=COLLMIN+FAILMIN

FAILMIN: The total number of minutes of actigraphy data on this STUDYDAY that were lost due to equipment failure; calculated as (EXPMIN - COLLMIN)

KSS: Karolinkska Sleepiness Score rating on this STUDYDAY; KSS ranges from 1 (extremely alert) to 9 (extremely sleepy – fighting sleep)

OFFMIN: The total number of minutes the actigraph was recording and off-wrist on this STUDYDAY

ONMIN: The total number of minutes that the actigraph was recording and on the wrist on this STUDYDAY

NEWPTID: Intern identifier; use to link to intern records across all Sleep and Alertness files

PVTERRCOM: Number of PVT-B errors of commission (reaction times ≤130 ms, false starts); the number of coincident fall starts (CFS) and false starts (FS) during a PVT-B; CFS = number of responses ≤ 130 ms and FS = number of responses prior to the stimulus being presented

PVTERROM: Number of PVT-B errors of omission (reaction times ≥ 355 ms, lapses); the sum of 355 ms lapses and timeouts during PVT-B; 355 ms lapse = number of responses with reaction times ≥ 355 ms and timeout = number of non-responses (timed out after 30,000 ms)

PVTREVIEW: Classification of comments left by intern regarding circumstances of PVT-B; coded as:

0 = no comments
1 = intern indicated he/she was distracted or engaged in secondary activity while doing the PVT-B
2 = intern reported non fatigue-related impairment while doing the PVT-B (e.g., injury, pain)
3 = intern indicated some other circumstance
Blank = no PVT-B

PVTSPEED: PVT-B response speed (mean reciprocal reaction time, 1/s); mean reciprocal of reaction times for the PVT-B

PVTSTRTTI: Time PVT-B was started on this STUDYDAY (local time; hh:mm:00.000; resolution to 1 minute); blank indicates that PVT-B was not completed on that day

SHIFT: Intern's self report of type of shift working on this STUDYDAY; coded as:

1 = regular day shift
2 = regular night shift
3 = starting extended overnight shift
4 = finishing extended overnight shift
5 = day off
6 = other

SLEEPMIN: total number of minutes scored as sleep per the STATEFIN variable in the sa_timeseriesanon.sas7bdat file for this STUDYDAY

STUDYDAY: sequential study day number (1-15)

UNKMIN: total number of minutes scored as unknown per the STATEFIN variable in the sa_timeseriesanon.sas7bdat file for this STUDYDAY

WAKEMIN: total number of minutes scored as wake per the STATEFIN variable in the sa_timeseriesanon.sas7bdat file for this STUDYDAY

The NEWPTID variable can be used to link records for a particular intern across the 3 Sleep and Alertness Substudy files (census, summary data, time series data).

sa_sumdatanon - Sleep and Alertness Substudy summary data

Date file created: 24 Apr 2019
Observations: 5970
Variables: 25

Variable Name	Variable Label	Type	Variable Length
adhflag	PVT:0=adherent,1=possibly adherent,2=nonadherent(distracted)	Num	8
collmin	Duration (min) of collection	Num	8
dayendtim	Time study day ended (hh:mm:00.000)	Num	8
daystrtti	Time study day ended (hh:mm:00.000)	Num	8
excsslpq1	1=excessive sleepiness 12am-6am,0=notselected	Num	8
excsslpq2	1=excessive sleepiness 6am-12noon,0=notselected	Num	8
excsslpq3	1=excessive sleepiness 12noon-6pm,0=notselected	Num	8
excsslpq4	1=excessive sleepiness 6pm-12am,0=notselected	Num	8
expmin	Duration (min) expected to wear actigraph	Num	8
failmin	Duration (min) device failed	Num	8
kss	KSS: 1=extr alert, 9=fighting sleep	Num	8
newptid	Subject ID (xxxx, char)	Char	4
noexcsslp	1=no excessive sleepiness in past 24 hrs	Num	8
offmin	Duration (min) device off wrist	Num	8
onmin	Duration (min) on wrist	Num	8
pvterrcom	Number of PVT commission errors	Num	8
pvterrom	Number of PVT omission errors	Num	8
pvtreview	PVTcomments:0=none,1=distract,2=nonfatigueImpair,3=other	Num	8
pvtspeed	PVT response speed (reciprocal reaction time 1/s)	Num	8
pvtstrtti	PVT start time (hh:mm:00.000)	Num	8
shift	1regday,2regnite,3strtextovrnite,4endextovrnite,5dayoff,6oth	Num	8
sleepmin	Duration (min) asleep	Num	8
studyday	Day (1-15) in study	Num	8
unkmin	Duration (min) unknown activity	Num	8
wakemin	Duration (min) awake	Num	8

sa_timeseriesanon.sas7bdat

This file contains minute by minute sleep-wake Sleep and Alertness Substudy data. Each intern participant in this Substudy signed a written consent statement indicating consent for use of their data. 398 interns participated in the substudy, 205 at Flexible programs and 193 at Standard programs. During the substudy, each participating intern wore an actigraph and completed a morning survey on the substudy smartphone on each of up to 15 days during a general medicine, intensive care unit, cardiology or coronary care rotation. The daily observations for an intern can be linked (use NEWPTID variable), but the link to a particular program or particular calendar day has been broken. Days are designated as 1, 2, 3, out to day 15 (STUDYDAY variable); local clock time has not been disguised. Data collection for some interns included the date when daylight savings time began; these interns are missing an hour of expected data compared to those observed during a period that did not include the start of daylight savings time. Detailed descriptions of variables in this file are:

EPOCHTIM: epoch start in local time (hh:mm:00.000; resolution to 1 minute)

NEWPTID: Intern identifier; use to link to intern records across all Sleep and Alertness files

STATEAUTO : sleep state as determined by the automatic sleep detection algorithm in the Actilife software supplemented by the Pulsar algorithm to detect continuous periods of low activity counts (off-wrist periods); coded as

S = sleep period determined by Actilife software sleep detection algorithm
W = wake period determined by Actilife software sleep detection algorithm
O = off-wrist period determined by Pulsar off-wrist detection algorithm

STATEFIN: final scored sleep state after review of the STATEMAN and STATESELF values (i.e., based on automated scoring supplemented by intern self-report and expert human review); coded as:

S = sleep
W = awake
U = unknown sleep or wake state due to insufficient data

STATEMAN: sleep state as determined by automated sleep detection algorithm in the Actilife software supplemented with additional adjustments made by manual review by sleep experts blinded to duty-hour group; coded as:

S = sleep period per software with optional adjustment by human review
W = wake period per software with optional adjustment by human review
O = off-wrist period per software with optional adjustment by human review

STATESELF: sleep state based on intern's self-reported diary entries on the daily morning survey on the smartphone app; coded as:

S = sleeping during this time period per intern self-report
W = awake during this time period per intern self-report

STUDYDAY: sequential study day number (1 to 15)

Note that the time periods of data collection for an intern will sum to a maximum of 14 days or 336 hours or 20,160 minutes of sleep/wake data (20,100 minutes for an intern whose observation period included the start of daylight savings time).

Personal characteristic data are limited to preserve participant confidentiality. Links to a particular program or particular calendar day have been broken. Each participant has a unique identifier (NEWPTID) which can be used to link records for a particular intern across the 3 Sleep and Alertness Substudy files (census, summary data, time series data).

sa_timeseriesanon - Sleep and Alertness Substudy time series data

Date file created: 24 Apr 2019
Observations: 8020980
Variables: 7

Variable Name	Variable Label	Type	Variable Length
epochtim	Epoch start time, local time (hh:mm:OO.OOO)	Num	8
newptid	Subject ID (xxxx, char)	Char	4
stateauto	S, W, O, N, auto detect sleep state	Char	1
statefin	S, W, or U, final scored sleep state	Char	1
stateman	S, W, O, auto detect+human sleep state	Char	1
stateself	S or W, self reported sleep state entered on PVT app	Char	1
studyday	Sequential number for study day (1-15)	Num	8

tim_epochsanon.sas7bdat

This file contains intern-shift level summary durations in different activities as collected in the Time-Motion Substudy. Each intern participant in this Substudy signed a written consent statement indicating consent for use of their data. 80 interns participated in the substudy, 44 at Flexible programs and 36 at Standard programs. 96 shifts (1072 hours) were observed at Flexible programs, and 98 shifts (1101 hours) were observed at Standard programs. Some interns were observed over more than 1 shift. Repeated observations for an intern can be linked using the variable NEWOBS_ID, but the link to a particular program or particular calendar day have been broken; the 1st 2 characters of NEWOBS_ID identify the intern and the 2nd 2 characters are a sequential number identifying the shift. This variable can be used to link records across all 3 Time-Motion files.

Intern activity was first categorized into one of 4 'big' buckets, some with subcategories:

- Education
  - Educational conference
  - Reading about medicine
  - Teaching or being taught
- Rounds
  - In patient room
  - In hallway/nurses station
  - In conference room
- Handoff
- Work (including pre-rounds)

Basically, at least one of Education, Rounds, Handoff or Work should have always been checked by the observer. An activity that is not Education, Rounds, or Handoffs is Work.

The activity could be additionally categorized as:

- Direct patient care
  - Direct patient, physical contact (e.g., exam or physical procedure; patient evaluation or management)
  - Patient interaction
  - Family interaction
  - Other direct patient care
- Indirect patient care
  - Interacting with chart
  - Viewing image, EKG, pathology slides, etc
  - Communicating with team
  - Communicating with non team members
- Miscellaneous (any non patient-related or non work-related activity)

Thus the observer's categorizations cover 7 activity groups: the 4 big buckets of Rounds, Education, Handoffs, and Work plus Direct patient care, Indirect patient care and Miscellaneous. Each of these has a variable in the dataset with the total number of minutes observed doing an activity in the category. There are 14 named subcategories: Educational conference; Reading about medicine; Teaching or being taught; In patient room; In hallway/nurses station; In conference room; Direct patient care-physical contact (e.g., exam or procedure); Patient interaction; Family interaction; Other direct patient care; Interacting with chart; Viewing image, EKG, pathology slides, etc; Communicating with team; and Communicating with non team members. Each of these subcategories has a variable in the dataset with the total number of minutes observed doing any activity in the subcategory.

Team members were considered to include the attending, the residents, the interns, and any medical students on the team. Anyone else (e.g., nurse, social worker) was considered to be a non team member. Multi-tasking would be coded as multiple buckets/sub categories checked for a time period. Each record in this file represents an intern-shift. Detailed descriptions of variables in this file are:

G_DIRPTCARE_M:	Number of minutes coded as spent in direct patient care
G_EDUCATION_M:	Number of minutes coded as spent in educational activities
G_HANDOFF_M:	Number of minutes coded as spent in handoff activities
G_INDIRPTCARE_M:	Number of minutes coded as spent in indirect patient care
G_MISC_M:	Number of minutes coded as spent on miscellaneous (non patient-related, non work-related) activities
G_ROUNDS_M:	Number of minutes coded as spent on rounds
G_WORK_M:	Number of minutes coded as spent on work (including pre-rounds)
N_CHARTINTER_M:	Number of minutes coded as interacting with patient chart
N_COMMNONTEAM_M:	Number of minutes coded as spent on communicating with non team members
N_COMMTEAM_M:	Number of minutes coded as spent on communicating with team members
N_DIRPTPHYSCNTAC_M:	Number of minutes coded as spent in direct patient-physician contact
N_EDUCCONF_M:	Number of minutes coded as spent on educational conference
N_FAMILYINTER_M:	Number of minutes coded as spent in interacting with patient family
N_INCONFROOM_M:	Number of minutes coded as spent in rounds in conference room
N_INHALLWAY_M:	Number of minutes coded as spent in rounds in the hallway
N_INPTROOM_M:	Number of minutes coded as spent in rounds in the patient's room
N_OTHRDPC_M:	Number of minutes coded as spent in other form of direct patient care that is not direct physical contact, patient interaction or family interaction
N_PATIENTINTER_M:	Number of minutes coded as patient interaction
N_READABOUTMED_M:	Number of minutes coded as reading about medicine
N_TEACHORTAUGHT_M:	Number of minutes coded as teaching or being taught
N_VIEWIMAGE_M:	Number of minutes coded as viewing images, EKG, pathology slides, etc
NEWOBS_ID:	Intern-shift identifier where intern is a 2 digit ID number and shift is a 2 digit sequential number ranging from 01 to 0X
OBS_TOTAL_M:	Total duration observed in minutes corrected for observer breaks
TRTGRP:	Duty-hour policy group (FLEX or STND)

tim_epochsanon - Time-Motion Substudy epochs data

Date file created: 24 Apr 2019
Observations: 194
Variables: 24

Variable Name	Variable Label	Type	Variable Length
g_dirptcare_m	Time coded as Direct patient care group (min)	Num	8
g_education_m	Time coded as Education group (min)	Num	8
g_handoff_m	Time coded as Handoff group (min)	Num	8
g_indirptcare_m	Time coded as Indirect patient care group (min)	Num	8
g_misc_m	Time coded as Miscellaneous group (min)	Num	8
g_rounds_m	Time coded as Rounds group (min)	Num	8
g_work_m	Time coded as Work group (min)	Num	8
n_chartinter_m	Time coded as Interacting with chart (min)	Num	8
n_commnonteam_m	Time coded as Communicating with non team members (min)	Num	8
n_commteam_m	Time coded as Communicating with team members (min)	Num	8
n_dirptphyscntac_m	Time coded as Direct patient or physician contact (min)	Num	8
n_educconf_m	Time coded as Educational conference (min)	Num	8
n_familyinter_m	Time coded as Family interaction (min)	Num	8
n_inconfroom_m	Time coded as In conference room (min)	Num	8
n_inhallway_m	Time coded as In hallway (min)	Num	8
n_inptroom_m	Time coded as In patient room (min)	Num	8
n_othrdpc_m	Time coded as Other direct patient care (min)	Num	8
n_patientinter_m	Time coded as Patient interaction (min)	Num	8
n_readaboutmed_m	Time coded as Reading about medicine (min)	Num	8
n_teachortaught_m	Time coded as Teaching or being taught (min)	Num	8
n_viewimage_m	Time coded as Viewing images (min)	Num	8
newobs_id	Observation ID (ii-s; ii=intern, s=observed shift seq no.)	Char	4
obs_total_m	Time observed corrected by deleting observer breaks (min)	Num	8
trtgrp	Duty-hour policy group: FLEX or STND	Char	4

tim_preshiftsurvanon.sas7bdat

This file contains responses to a survey administered by the observer to the intern at the start of each shift observed in the Time-Motion Substudy. Each intern participant in this Substudy signed a written consent statement indicating consent for use of their data. 80 interns participated in the substudy, 44 at Flexible programs and 36 at Standard programs. 96 shifts (1072 hours) were observed at Flexible programs, and 98 shifts (1101 hours) were observed at Standard programs. Some interns were observed over more than 1 shift. Repeated observations for an intern can be linked by the first 2 characters of the NEWOBS_ID variable, but the link to a particular program or particular calendar day has been broken; this variable is also used to link records across the 3 Time-Motion data files. Detailed descriptions of variables in this file are:

ADMIT: Intern's response to "are you admitting new patients today", coded as:

1 = yes
0 = no

ARRIVETIME: Intern's response to "what time did you arrive to work", coded as hh:mm:00.000 (resolution to 1 minute) and in local time

FLIPPHONE: 1=using a flip phone as a communication device for patient care, 0=not using

NEWOBS_ID: Intern-shift identifier where intern is a 2 digit ID number and shift is a 2 digit sequential number ranging from 01 to 0X; used in all 3 Time-Motion files

OBSERVER: 2 digit observer id number

OTHRDEV: 1=using a communication device other than flip phone, pager, or smartphone for patient care, 0=not using

OTHRDEVSPE: character description of other device used for communication about patient care

PAGER: 1=using a pager as a communication device for patient care, 0=not using

SHIFTTYP: character description of shift type (long day shift, night shift, overnight call or short day shift)

SMARTPHONE: 1=using a smart phone as a communication device for patient care, 0=not using

TRTGRP: Duty-hour policy group (FLEX or STND)

tim_preshiftsurvanon - Time-Motion Substudy pre shift survey data

Date file created: 24 Apr 2019
Observations: 194
Variables: 11

Variable Name	Variable Label	Type	Variable Length
admit	Are you admitting new patients today?	Char	3
arrivetime	Time intern arrived at work (hh:mm:OO.OOO)	Num	8
flipphone	1=flip phone for pt care, O=not using	Num	8
newobs_id	Observation ID (ii-s; ii=intern, s=observed shift seq no.)	Char	4
observer	observer ID (1-23)	Num	8
othrdev	1=using other device for pt care, O=not using	Num	8
othrdevspe	specify other device for pt care	Char	12
pager	1=pager for pt care, O=not using	Num	8
shifttyp	Type of shift (4 choices)	Char	15
smartphone	1=smart phone for pt care, O=not using	Num	8
trtgrp	Duty-hour policy group: FLEX or STND	Char	4

tim_postshiftsurvanon.sas7bdat

This file contains responses to a survey administered by the observer to the intern at the end of each shift observed in the Time-Motion Substudy. Each intern participant in this Substudy signed a written consent statement indicating consent for use of their data. 80 interns participated in the substudy, 44 at Flexible programs and 36 at Standard programs 96 shifts (1072 hours) were observed at Flexible programs, and 98 shifts (1101 hours) were observed at Standard programs. Some interns were observed over more than 1 shift. Repeated observations for an intern can be linked using the first 2 characters of the NEWOBS_ID variable, but the link to a particular program or particular calendar day has been broken; this variable can also be used to link an intern's records across all Time-Motion data files. Detailed descriptions of variables in this file are:

ENDCENSUS:	Intern response to query "what is your total census at the start of the shift"; this is a number of patients
ENDCENSUSX:	Calculated census based on intern's responses; ENDCENSUSX = STARTCENSUS + NTRNSFDRECV - NTRNSFOFF + NADMITCOMP - NDSCHGCOMP
LEAVETIME:	Intern response to query "what time are you leaving work" (hh:mm:00.000; resolution to 1 minute)
NADMITCOMP:	Intern response to query "how many admissions did you complete"; this is a number of patients
NADMITSTRT:	Intern response to query "how many admissions did you start"; this is a number of patients
NDSCHGCOMP:	Intern response to query "How many patients did you receive during a handoff" (i.e., patients who were temporarily cross-covered by the intern)
NEWOBS_ID:	Intern-shift identifier where intern is a 2 digit ID number and shift is a 2 digit sequential number ranging from 01 to 0X; can be used to link an intern's records across all Time-Motion data files
NHANDGIVE:	Intern response to query "How many patients did you give by handing them off" (i.e., patients who were temporarily given to another intern or provider with the expectation to receive back at a later time point)
NHANDRECV:	Intern response to query "how many transfers did you receive during your shift (i.e., accepting new admissions from overnight team or transfers from another medical team)"; this is a number of patients
NTRNSFOFF:	Intern response to query "How many patients did you transfer off your census"; this is the number of patients given
NTRNSFRECV:	Intern response to query "How many transfers did you receive during your shift (ie, accepting new admissions from overnight team or transfers from another medical team); this is the number of patients received
OBSERVER:	2 digit observer id number
STARTCENSUS:	Intern response to query "what is your total census at the start of the shift"; this is a number of patients
TRTGRP:	Duty-hour policy group (FLEX or STND)

Responses to 2 post shift surveys were lost or never collected.

tim_postshiftsurvanon - Time-Motion Substudy post shift survey data

Date file created: 24 Apr 2019
Observations: 192
Variables: 14

Variable Name	Variable Label	Type	Variable Length
endcensus	What is your total census at the end of your shift?	Num	8
endcensusx	Calculated census based on survey responses	Num	8
leavetime	Time intern left work (hh:mm:OO.OOO)	Num	8
nadmitcomp	How many admissions did you complete?	Num	8
nadmitstrt	How many admissions did you start?	Num	8
ndschgcomp	How many discharges did you complete?	Num	8
newobs_id	Observation ID (ii-s; ii=intern, s=observed shift seq no.)	Char	4
nhandgive	How many patients did you give by handing them off?	Num	8
nhandrecv	How many patients did you receive during a handoff?	Num	8
ntrnsfoff	How many patients did you transfer off your census?	Num	8
ntrnsfrecv	How many patients did you receive during your shift?	Num	8
observer	observer ID (1-23)	Num	8
startcensus	What is your total census at the start of the shift?	Num	8
trtgrp	Duty-hour policy group: FLEX or STND	Char	4