Cover page

NCT03648853

Effect of Location of Tetanic Stimuli on Photopethysmogram During General Anesthesia

April 18, 2020

Study Application (Version 1.0)

1.0 General Information

***Enter the full title of your study:**

Effect of Location of Tetanic Stimuli on Photopethysmogram During General Anesthesia

***Enter the study number or study alias**

PT1801
* This field allows you to enter an abbreviated version of the Study Title to quickly identify this study.

2.0 Add Department(s)

2.1 List departments and/or research programs associated with this study:

Primary Dept?	Department Name
◉	**UCSF** - *127037* - M_Anesthesia

3.0 Assign key study personnel(KSP) access to the study

3.1 *Please add a Principal Investigator for the study:

Talke, Pekka, MD

Select if applicable

☐ Department Chair ☐ Resident

☐ Fellow

If the Principal Investigator is a Fellow, the name of the Faculty Advisor must be supplied below.

3.2 If applicable, please select the Research Staff personnel:

A) Additional Investigators

B) Research Support Staff

3.3 *Please add a Study Contact:

Talke, Pekka, MD

The Study Contact(s) will receive all important system notifications along with the Principal Investigator. (e.g. The project contact(s) are typically either the Study Coordinator or the Principal Investigator themselves).

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3.4 If applicable, please add a Faculty Advisor/Mentor:

3.5 If applicable, please select the Designated Department Approval(s):

Add the name of the individual authorized to approve and sign off on this protocol from your Department (e.g. the Department Chair or Dean).

4.0 Qualifications of Key Study Personnel

4.1 November, 2015 - NEW Definition of Key Study Personnel and CITI Training Requirements:

UCSF Key Study Personnel include the Principal Investigator, other investigators and research personnel who are directly involved in conducting research with study participants or who are directly involved in using study participants' identifiable private information during the course of the research. Key Personnel also include faculty mentors/advisors who provide direct oversight to Postdoctoral Fellows, Residents and Clinical Fellows serving as PI on the IRB application.

The IRB requires that all Key Study Personnel complete Human Subjects Protection Training through CITI prior to approval of a new study, or a modification in which KSP are being added. More information on the CITI training requirement can be found on our website.

List the study responsibilities and qualifications of any individuals who qualify as Key Study Personnel (KSP) at UCSF and affiliated sites ONLY by clicking the "Add a new row" button. This information is required and your application will be considered incomplete without it.

KSP Name	Description of Study Responsibilities	Qualifications
Talke, Pekka, MD	Design, administration, data collection, data analysis, consenting	Dr Talke has conducted clinical studies involving patients and volunteers at UCSF for over 25 years. He is a faculty anesthesiologist at UCSF. Dr Talke has conducted studies using photoplethysmography at UCSF for over 15 years.

5.0 Initial Screening Questions - Updated 9/13

(Note: You must answer every question on this page to proceed).
If you are converting to the new form, check questions 5.4, 5.6, 5.7, 5.8 and 5.10 before saving and continuing to the next section.

5.1 * Application type:

- ○ Full Committee
- ◉ Expedited
- ○ Exempt

5.2 * Risk level (Help Text updated 9/13):

- (•) Minimal risk
- ( ) Greater than minimal risk

5.3 * Subject contact:

- (•) Yes (including phone, email or web contact)
- ( ) No (limited to medical records review, biological specimen analysis, and/or data analysis)

5.4 * Funding (past or present):

- ( ) Funded or will be funded (external sponsor, gift, program or specific internal or departmental funds)
- (•) Unfunded (no specific funds earmarked for this project)
- ( ) Unfunded student project

5.5 * The Principal Investigator and/or one or more of the key study personnel has financial interests related to this study:

( ) Yes (•) No

If **Yes**, the Conflict of Interest Advisory Committee (COIAC) office may contact you for additional information.

5.6 * This is an investigator-initiated study:

(•) Yes ( ) No

5.7 * This study ONLY involves retrospective records review and/or identifiable biospecimen analysis:

( ) Yes (•) No

5.8 * This is a clinical trial:

( ) Yes (•) No

Clinical Trial Registration
"NCT" number for this trial:

5.9 * This is a multicenter study:

( ) Yes (•) No

5.10 * This application involves the study of unapproved or approved drugs, devices, biologics or in vitro diagnostics:

( ) Yes (•) No

5.11 * This application involves a Humanitarian Use Device:

- (•) No
- ( ) Yes, and it includes a research component
- ( ) Yes, and it involves clinical care ONLY

5.12 * This study involves human stem cells (including iPS cells and adult stem cells), gametes or embryos:

- (•) No
- ( ) Yes, and requires CHR and GESCR review
- ( ) Yes, and requires GESCR review, but NOT CHR review

5.13 * This is a CIRB study (e.g. the NCI CIRB will be the IRB of record):

( ) Yes (•) No

5.14 * This application includes a request to rely on another IRB (other than NCI CIRB):

( ) Yes (•) No

Note: If this request is approved, the CHR will **NOT** review and approve this study. Another institution will be the IRB of record.

6.0 Expedited Review Categories

6.1 * If you think this study qualifies for expedited review, select the regulatory category(ies) that the research falls under:

- [ ] Category 1: A very limited number of studies of approved drugs and devices
- [ ] Category 2: Blood sampling
- [ ] Category 3: Noninvasive specimen collection (e.g. buccal swabs, urine, hair and nail clippings, etc.)
- [x] Category 4: Noninvasive clinical procedures (e.g. physical sensors such as pulse oximeters, MRI, EKG, EEG, ultrasound, moderate exercise testing, etc.)
- [x] Category 5: Research involving materials (data, documents, records, or specimens) that were previously collected for either nonresearch or research purposes
- [ ] Category 6: Use of recordings (voice, video, digital or image)
- [ ] Category 7: Low risk behavioral research or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies

7.0 Sites

7.1 Institutions (check all that apply):

- [x] UCSF
- [ ] China Basin
- [ ] Helen Diller Family Comprehensive Cancer Center
- [ ] Mission Bay
- [ ] Mount Zion
- [ ] San Francisco General Hospital (SFGH)
- [ ] SF VA Medical Center (SF VAMC)
- [ ] Blood Centers of the Pacific (BCP)
- [ ] Blood Systems Research Institute (BSRI)
- [ ] Fresno (Community Medical Center)
- [ ] Gallo
- [ ] Gladstone
- [ ] Institute on Aging (IOA)
- [ ] Jewish Home

☐ SF Dept of Public Health (DPH)

7.2 Check all the other types of sites not affiliated with UCSF with which you are cooperating or collaborating on this project (Help Text updated 9/13):

☐ Other UC Campus

☐ Other institution

☐ Other community-based site

☐ Foreign Country

List the foreign country/ies:

7.3 Check any research programs this study is associated with:

☐ Cancer Center
☐ Center for AIDS Prevention Sciences (CAPS)
☐ Global Health Sciences
☐ Immune Tolerance Network (ITN)
☐ Neurosciences Clinical Research Unit (NCRU)
☐ Osher Center
☐ Positive Health Program

8.0 Study Design

8.1 * Study design (Help Text updated 9/13):

This is a single center, clinical research study that plans to enroll 20 surgical patients undergoing general anesthesia.

8.2 If this is a clinical trial, check the applicable phase(s) (Help Text updated 9/13):

☐ Phase I
☐ Phase II
☐ Phase III
☐ Phase IV

9.0 Scientific Considerations

9.1 Hypothesis (Help Text updated 9/13):

This study has a hypothesis:

◉ Yes ○ No

If yes, state the hypothesis or hypotheses:

During general anesthesia a tetanic stimulus-induced noxious stimulus will elicit a brief peripheral vasoconstrictive response which can be measured as a decrease in the AC component of a photoplethysmogram, and an increase in the DC component of the photoplethysmogram. The hypothesis of this study is that the location where the tetanic stimulus is applied has no effect on the ripheral vasoconstrictive response.

9.2 * List the specific aims:

To evaluate the effect of a noxious stimulus (tetanus) on the AC and DC components of a photoplethysmogram immediately before and after a tetanic stimulus applied to three different sites (ulnar nerve, thorax at mid axillary line, and over tibia).

9.3 Statistical analysis:

Maximum changes in the AC and DC components of the photoplethysmogram will be determined during a 60 second period after a tetanic stimulus. Maximum changes in the AC and DC components will be compared to their respective baseline values using paired students t-test. $p<0.05$ will signify statistical significance. The maximum changes in the AC and DC components between the three different sites will be compared using ANOVA.

9.4 If this study has undergone scientific or scholarly review, please indicate which entity performed the review:

- ☐ Cancer Center Protocol Review Committee (PRC) (Full approval is required prior to final CHR approval for cancer-related protocols.)
- ☐ CTSI Clinical Research Center (CRC) advisory committee
- ☐ Departmental scientific review
- ☐ Other:

Specify **Other**:

10.0 Background

10.1 Background:

Noxious stimuli will induce a stress response in humans that activates the autonomic nervous system. This response can be observed in various ways such as peripheral vasoconstriction, increase in circulating catecholamine levels, increase in heart rate and blood pressure, etc. Numerous previous studies have used photoplethysmography (measures change in volume) to record these responses. Photoplethysmography is part of a commonly used noninvasive clinical monitoring system called pulse oximetry.

Heat, cold, and electrical current have been used as noxious stimuli in awake subjects. In surgical patients, tetanic stimulus has been established as a noninvasive, standardized noxious stimulus, that has been compared in intensity to the stimulus of a skin insicion. Tetanic stimuli are routinely used during general anesthesia to monitor neuromuscular function.

A photoplethysmogram has two components, commonly referred to as AC and DC. The AC component is due to pulsatile changes in tissue volume (mainly arterial pulsation). The DC component is due to transmission of light by nonpulsatile tissues, including venous blood and nonpulsatile portions of arterial blood. Noxious stimuli-induced stress responses mediate peripheral vasoconstriction and will decrease the AC and increase the DC component of the photoplethysmogram. It is not known if the location of the tetanic stimulus has an effect on this stress response.

The aim of this study is to investigate the effect of a known noxious stimulus (tetanic stimulus), applied to three different sites, on both the AC and DC components of the photoplethysmogram in order to determine which component is best in detecting perioperative stress responses and if the location of the stimulus has an effect on the stress response.

10.2 Preliminary studies:

Numerous studies have 1) established the tetanic stimulus as a standardized noxious stimulus during general anesthesia, and 2) documented the resulting stress responses using various combinations of anesthetics. However, tno data exist on the effect of the location of the tetanic stimulus on the stress response.

During several of my previous intraoperative studies using photoplethysmography, I have observed both the tetanic stimulus and surgical stimulus to have an effect on both the AC and DC components of the photoplethysmogram. Unfortunately, those previous studies were not designed specifically to study and record the effect of the location of the tetanic stimulus on the photoplethysmogram.

THIS STUDY IS IDENTICAL TO A RECENTLY COMPLETED STUDY (15-17499) WITH THE DIFFERENCE THAT TETANIC STIMULUS WILL BE ADMINISTERED TO ADDITIONAL SITES (ULNAR NERVE, MID AXILLARY LINE OF THORAX AND OVER TIBIA)

10.3 References:

Hamunen K, Kontinen V, Hakala E, Talke P, Paloheimo M, Kalso E. **Effect of pain on autonomic nervous system indices derived from photoplethysmography in healthy volunteers.** Br J Anaesth. 2012 May;108(5):838-44.

Huiku M, Uutela K, van Gils M, Korhonen I, Kymäläinen M, Meriläinen P, Paloheimo M, Rantanen M, Takala P, Viertiö-Oja H, Yli-Hankala A. **Assessment of surgical stress during general anaesthesia.** Br J Anaesth. 2007 Apr;98(4):447-55.

Mustola S1, **Parkkari T**, **Uutela K**, **Huiku M**, **Kymäläinen M**, **Toivonen J**. Performance of Surgical Stress Index during Sevoflurane-Fentanyl and Isoflurane-Fentanyl Anesthesia. Anesthesiol Res Pract. 2010;2010.

Wennervirta J, Hynynen M, Koivusalo AM, Uutela K, Huiku M, Vakkuri A. **Surgical stress index as a measure of nociception/antinociception balance during general anesthesia.** Acta Anaesthesiol Scand. 2008 Sep;52(8):1038-45.

Ahonen J, Jokela R, Uutela K, Huiku M. **Surgical stress index reflects surgical stress in gynaecological laparoscopic day-case surgery.** Br J Anaesth. 2007 Apr;98(4):456-61.

Struys MM, Vanpeteghem C, Huiku M, Uutela K, Blyaert NB, Mortier EP. **Changes in a surgical stress index in response to standardized pain stimuli during propofol-remifentanil infusion.** Br J Anaesth. 2007 Sep;99(3):359-67.

Rantanen M, Yli-Hankala A, van Gils M, Yppärilä-Wolters H, Takala P, Huiku M, Kymäläinen M, Seitsonen E, Korhonen I. **Novel multiparameter approach for measurement of nociception at skin incision during general anaesthesia.** Br J Anaesth. 2006 Mar;96(3):367-76.

Rantanen M, Yppärilä-Wolters H, van Gils M, Yli-Hankala A, Huiku M, Kymäläinen M, Korhonen I. **Tetanic stimulus of ulnar nerve as a predictor of heart rate response to skin incision in propofol remifentanil anaesthesia.** Br J Anaesth. 2007 Oct;99(4):509-13.

If you have a separate bibliography, attach it to the submission with your other study documents.

11.0 Sample Size and Eligibility

11.1 Number of subjects that will be enrolled at UCSF and affiliated institutions:

20

11.2 Total number of subjects that will be enrolled at all sites (Help Text updated 9/13):

20

11.3 Estimated number of people that you will need to consent and screen here (but not necessarily enroll) to get the needed subjects:

30

11.4 Explain how and why the number of subjects was chosen (Help Text updated 9/13):

Based on the previously completed trial, 12 subjects will be needed. I'm requesting to study up to 20 patients in case there will be patients with poor technical data quality.

11.5 * Eligible age range(s):

- [ ] 0-6 years
- [ ] 7-12 years
- [ ] 13-17 years
- [x] 18+ years

11.6 Inclusion criteria:

1) 18 years old or older
2) Willing to participate (signed informed consent)
3) English speaking (for consent reasons)
4) Surgery under general anesthesia

11.7 Exclusion criteria:

1) Unable to consent
2) Non english speaking
4) Under 18 years old

11.8 There are inclusion or exclusion criteria based on gender, race or ethnicity:

○ Yes ◉ No

If **yes**, please explain the nature and rationale for the restrictions:

12.0 Other Approvals and Registrations

12.1 * Do any study activities take place on patient care units:

○ Yes ◉ No

If **Yes**, attach a letter of support for the study from the involved patient care manager(s).

12.2 * Does your protocol involve any radiation exposure to patients/subjects? The UCSF Radiation Safety Committee requires review of your protocol if it includes administration of radiation as part of standard of care OR research exposures:

○ Yes ◉ No

12.3 * This study may generate genetic data that may be broadly shared (e.g. submitted to NIH for Genome-Wide Association Studies (GWAS) in dbGaP, TCGA, etc):

○ Yes ◉ No

12.4 * This study involves administration of vaccines produced using recombinant DNA technologies to human subjects:

○ Yes ◉ No

12.5 * This study involves human gene transfer (NOTE: Requires NIH Recombinant DNA Advisory Committee (RAC) review prior to CHR approval):

○ Yes ◉ No

12.6 This study involves other regulated materials and requires approval and/or authorization from the following regulatory committees:

☐ Institutional Biological Safety Committee (IBC)

Specify BUA #:

☐ Institutional Animal Care and Use Committee (IACUC)

Specify IACUC #:

☐ Radiation Safety Committee

Specify RUA #:

☐ Radioactive Drug Research Committee (RDRC)

Specify RDRC #:

☐ Controlled Substances

13.0 Procedures

13.1 * Procedures/Methods (Help Text updated 9/13)

For clinical research list all study procedures, test and treatments required for this study, including when and how often they will be performed. If there are no clinical procedures, describe the Methods:

In addition to the clinically used pulse oximeter probe, two additional, noninvasive pulse oximeter probes (Masimo, Irvine CA, identical to the one used clinically) will be applied to both index fingers after induction of anesthesia. The probes are noninvasive and pose no known additional risk. Data from these probes will be collected using a laptop computer and ADC software, which is designed to collect photoplethysmography data from Masimo pulse oximeters. Data will be collected while patients are anesthetized. Data will be analyzed offline.

In addition to the pulse oximeter data, other available hemodynamic data will be collected electronically from GE hemodynamic monitors using another laptop computer and S/5 Collect software, which is commercially available for this purpose.

Tetanic stimulus: The study will use the same neuromuscular function monitor as is used clinically. Tetanic stimuli will be applied to the ulnar nerve, thorax at mid axillary line and over tibia. A 5 second, 100 Hz, 60 mA, stimulus will be used (similar to the one used clinically). Tetanus will be applied twice at each location (random order, minimum of 2 minuted apart.

Other than electronic data collection and addition of the two noninvasive pulse oximeter probes and periodic tetanic stimuli, this study will have no influence on surgery, anesthesia, or hemodynamic

monitoring, all of which are left to the discretion of the surgeon and anesthesiologist in charge of the patient.

In summary, the following data will be recorded:

1. Demographic data from APEX
2. Pulse oximeter data will be collected electronically using a laptop computer
3. Anesthetic agents will be recorded from APEX
4. Timing and location of the tetanic stimuli will be marked on the laptop computer.
5. All available electronic monitoring data (blood pressure, heart rate etc.) will be recorded electronically from the operating room hemodynamic monitors using a laptop computer.

If you have a procedure table, attach it to the submission with your other study documents.

13.2 Interviews, questionnaires, and/or surveys will be administered or focus groups will be conducted:

○ Yes ◉ No

List any standard instruments used for this study:

Attach any non-standard instruments at the end of the application.

13.3 Conduct of study procedures or tests off-site by non-UCSF personnel:

○ Yes ◉ No

If yes, explain:

13.4 Sharing of experimental research test results with subjects or their care providers:

○ Yes ◉ No

If yes, explain:

13.5 * Specimen collection for future research and/or specimen repository/bank administration:

○ Yes ◉ No

13.6 Time commitment (per visit and in total):

Study will be conducted intraoperatively, and will not increase surgical or anesthesia time. Time commitment is limited to the consent process.

13.7 Locations:

Moffatt Long operating rooms

13.8 Describe the resources in place to conduct this study in a way that assures protection of the rights and welfare of participants:

Study will be conducted in the operating room with an anesthesiologist present. Study data collecting and consenting will be done by the principal investigator who is a faculty anesthesiologist. Data will be coded and stored in the principal investigators locked office to protect privacy.

14.0 Risks and Benefits

14.1 * Risks and discomforts:

Risks: Pulse oximeter probes ate noninvasive and have no known associated risks. Electronic data collection has no known associated risks. Tetanic stimulus has no known associated risks, and will not cause discomfort as the study will be done during general anesthesia.
Benefits: None

14.2 Steps taken to minimize risks to subjects:

No known risks.

14.3 Benefits to subjects:

○ Yes ◉ No

If yes, describe:

14.4 Benefits to society:

Better understanding of the effect on perioperative noxious stimuli on plethysmogram may improve anesthetic management in the future.

14.5 Explain why the risks to subjects are reasonable:

No known risks.

15.0 Confidentiality and Privacy

15.1 Plans for maintaining privacy in the research setting:

Study will be conducted in the operating room during surgery. Access to operating rooms is limited to health care providers.

15.2 Possible consequences to subjects resulting from a loss of privacy:

None known.

15.3 Study data are:

- ☐ Derived from the Integrated Data Repository (IDR) or The Health Record Data Service (THREDS) at SFGH
- ☑ Derived from a medical record (e.g. APeX, OnCore, etc. Identify source below)
- ☐ Added to the hospital or clinical medical record
- ☐ Created or collected as part of health care
- ☐ Used to make health care decisions
- ☐ Obtained from the subject, including interviews, questionnaires
- ☐ Obtained from a foreign country or countries only

- [ ] Obtained from records open to the public
- [ ] Obtained from existing research records
- [ ] None of the above

If **derived from a medical record**, identify source:

Demographics and anesthesia drug data from APEX

15.4 Identifiers may be included in research records:

- (•) Yes
- ( ) No

If **yes**, check all the identifiers that may be included:

- [ ] Names
- [x] Dates
- [ ] Postal addresses
- [ ] Phone numbers
- [ ] Fax numbers
- [ ] Email addresses
- [ ] Social Security Numbers*
- [ ] Medical record numbers
- [ ] Health plan numbers
- [ ] Account numbers
- [ ] License or certificate numbers
- [ ] Vehicle ID numbers
- [ ] Device identifiers or serial numbers
- [ ] Web URLs
- [ ] IP address numbers
- [ ] Biometric identifiers
- [ ] Facial photos or other identifiable images
- [ ] Any other unique identifier

* Required for studies conducted at the VAMC

15.5 Identifiable information might be disclosed as part of study activities:

- ( ) Yes
- (•) No

If **yes**, indicate to whom identifiable information may be disclosed:

- [ ] The subject's medical record
- [ ] The study sponsor
- [ ] Collaborators
- [ ] The US Food & Drug Administration (FDA)
- [ ] Others (specify below)
- [ ] A Foreign Country or Countries (specify below)

If **Others**, specify:

No research related information will be placed on patient's medical record

15.6 Indicate how data are kept secure and protected from improper use and disclosure (check all that apply):

NOTE: Whenever possible, do not store subject identifiers on laptops, PDAs, or other portable devices. If you collect subject identifiers on portable devices, you MUST encrypt the devices.

- [ ] Data are stored securely in My Research
- [ ] Data are coded; data key is destroyed at end of study
- [x] Data are coded; data key is kept separately and securely
- [x] Data are kept in a locked file cabinet
- [x] Data are kept in a locked office or suite
- [x] Electronic data are protected with a password
- [ ] Data are stored on a secure network
- [ ] Data are collected/stored using REDCap or REDCap Survey
- [ ] Data are securely stored in OnCore

15.7 Additional measures to assure confidentiality and protect identifiers from improper use and disclosure, if any:

Patient names are associated only with consent forms. Unique study numbers will be used to collect and analyze data. These study numbers are not related to patient identifyers.
This study is unique in a sense that the PI can identify the patients using the date and time of the study which can be correlated with the operating room schedule. No MR number and unique study number links will be used. Non UCSF employers do not have acces to this information. To assure confidentiality, in addition, the case report forms that contain the date and time of the study will be kept at the investigators office in a locked cabinet.

15.8 This study may collect information that State or Federal law requires to be reported to other officials or ethically requires action:

- ( ) Yes
- (•) No

Explain:

15.9 This study will be issued a Certificate of Confidentiality:

- ( ) Yes
- (•) No

16.0 Subjects

16.1 Check all types of subjects that may be enrolled:

- [x] Inpatients
- [x] Outpatients
- [ ] Healthy volunteers
- [ ] Staff of UCSF or affiliated institutions

16.2 Additional vulnerable populations:

- [ ] Children
- [ ] Subjects unable to consent for themselves
- [ ] Subjects unable to consent for themselves (emergency setting)
- [ ] Subjects with diminished capacity to consent
- [ ] Subjects unable to read, speak or understand English
- [ ] Pregnant women

- [ ] Fetuses
- [ ] Neonates
- [ ] Prisoners
- [ ] Economically or educationally disadvantaged persons
- [ ] Investigators' staff
- [ ] Students

Explain why it is appropriate to include the types of subjects checked above in this particular study:

Describe the additional safeguards that have been included in the study to protect the rights and welfare of these subjects and minimize coercion or undue influence:

17.0 Recruitment

17.1 * Methods (check all that apply):

- [x] Study investigators (and/or affiliated nurses or staff) recruit their own patients directly in person or by phone.
- [ ] Study investigators recruit their own patients by letter. Attach the letter for review.
- [ ] Study investigators send a "Dear Doctor" letter to colleagues asking for referrals of eligible patients. If interested, the patient will contact the PI or the PI may directly recruit the patients (with documented permission from the patient). Investigators may give the referring physicians a study information sheet for the patients.
- [ ] Study investigators provide their colleagues with a "Dear Patient" letter describing the study. This letter can be signed by the treating physicians and would inform the patients how to contact the study investigators. The study investigators may not have access to patient names and addresses for mailing
- [ ] Advertisements, notices, and/or media used to recruit subjects. Interested subjects initiate contact with study investigators. Attach ads, notices, or media text for review. In section below, please explain where ads will be posted.
- [x] Study investigators identify prospective subjects through chart review. (Study investigators request a Waiver of Authorization for recruitment purposes.)
- [ ] Large-scale epidemiological studies and/or population-based studies: Prospective subjects are identified through a registry or medical records and contacted by someone other than their personal physician. (Study investigators request a Waiver of Authorization for recruitment purposes.)
- [ ] Direct contact of potential subjects who have previously given consent to be contacted for participation in research. Clinic or program develops a CHR-approved recruitment protocol that asks patients if they agree to be contacted for research (a recruitment database) or consent for future contact was documented using the consent form for another CHR-approved study.
- [ ] Study investigators list the study on the School of Medicine list of UCSF Clinical Trials website or a similarly managed site. Interested subjects initiate contact with investigators.
- [ ] Study investigators recruit potential subjects who are unknown to them through methods such as snowball sampling, direct approach, use of social networks, and random digit dialing.
- [ ] Other

If **Other**, explain:

17.2 * How, when, and by whom eligibility will be determined:

Principal Investigator (Pekka Talke MD) will review upcoming operating room schedules in advance, and will identify patients who are likely to be suitable for the study.

17.3 * How, when, where and by whom potential subjects will be approached:

Principal Investigator (Pekka Talke MD) will approach potential subjects when the patients arrive to the ML preoperative area.

17.4 * Protected health information (PHI) will be accessed prior to obtaining consent:

(•) Yes ( ) No

18.0 Waiver of Consent/Authorization for Recruitment Purposes

This section is required when study investigators (and/or affiliated nurses or staff) recruit their own patients directly.

18.1 * Study personnel need to access protected health information (PHI) during the recruitment process and it is not practicable to obtain informed consent until potential subjects have been identified:

(•) Yes

If **no**, a waiver of consent/authorization is NOT needed.

18.2 * A waiver for screening of health records to identify potential subjects poses no more than minimal risk to privacy for participants:

(•) Yes

If **no**, a waiver of authorization can NOT be granted.

18.3 * Screening health records prior to obtaining consent will not adversely affect subjects' rights and welfare:

(•) Yes

If **no**, a waiver of authorization can NOT be granted.

18.4 * Check all the identifiers that will be collected prior to obtaining informed consent:

- [x] Names
- [x] Dates
- [ ] Postal addresses
- [ ] Phone numbers
- [ ] Fax numbers
- [ ] Email addresses
- [ ] Social Security Numbers*
- [ ] Medical record numbers
- [ ] Health plan numbers
- [ ] Account numbers
- [ ] License or certificate numbers
- [ ] Vehicle ID numbers
- [ ] Device identifiers or serial numbers
- [ ] Web URLs
- [ ] IP address numbers
- [ ] Biometric identifiers
- [ ] Facial photos or other identifiable images
- [ ] Any other unique identifier

☐ None

Note: HIPAA rules require that you collect the minimum necessary.

18.5 * Describe any health information that will be collected prior to obtaining informed consent:

Operating room schedules will be screened for patients that will fit the inclusion criteria.

Note: HIPAA requires that you collect the minimum necessary.

18.6 * Describe your plan to destroy the identifiers at the earliest opportunity consistent with the research or provide a health or research justification for retaining the identifiers, or indicate and explain that retention is required by law:

Patient names are associated only with consent forms. Unique study numbers will be used to collect and analyze data. These study numbers are not related to patient identifyers.
This study is unique in a sense that the PI can identify the patients using the date and time of the study which can be correlated with the operating room schedule that the PI has access to. No MR number and unique study number links will be used. Non UCSF employers do not have access to this information. To assure confidentiality, in addition, the case report forms that contain the date and time of the study will be kept at the investigators office in a locked cabinet.

19.0 Informed Consent

19.1 * Methods (check all that apply):

☑ Signed consent will be obtained from subjects and/or parents (if subjects are minors)
☐ Verbal consent will be obtained from subjects using an information sheet or script
☐ Electronic consent will be obtained from subjects via the web or email
☐ Implied consent will be obtained via mail, the web or email
☐ Signed consent will be obtained from surrogates
☐ Emergency waiver of consent is being requested for subjects unable to provide consent
☐ Informed consent will not be obtained

19.2 * Process for obtaining informed consent:

Principal investigator will approach the patient, and if allowed, will explain the study to the subjects in detail. All questions will be answered.

19.3 * How investigators will make sure subjects understand the information provided to them:

Principal investigator will recruit only english speaking patients. The investigator has conducted several similar studies and is experienced in consenting subject, and will not consent subjects who do not clearly understand the study procedures.

20.0 Financial Considerations

20.1 Subjects payment or compensation method (check all that apply):

Payments will be (check all that apply):

☑ Subjects will not be paid
☐ Cash
☐ Check

☐ Debit card
☐ Gift card
☐ Reimbursement for parking and other expenses
☐ Other:

Specify **Other**:

20.2 Describe the schedule and amounts of payments, including the total subjects can receive for completing the study. If deviating from recommendations in Subject Payment Guidelines, include specific justification below.

none

20.3 Costs to Subjects: Will subjects or their insurance be charged for any study procedures?

○ Yes ◉ No

If **yes,** describe those costs below, and compare subjects' costs to the costs associated with alternative care off-study. Finally, explain why it is appropriate to charge those costs to the subjects.

21.0 CTSI Screening Questions

21.1 * This study will be carried out at one of the UCSF Clinical Research Services (CRS) centers or will utilize CRS services. CRS centers are at the following sites:

- **SFGH Clinical Research Center**
- **Moffitt Adult Clinical Research Center**
- **Moffitt Hospital Pediatrics & NCRC**
- **Mount Zion Hospital Clinical Research Center**
- **Tenderloin Center**
- **CHORI Children's Hospital Pediatrics & Adult Clinical Research Center**
- **Kaiser Oakland Research Unit**
- **SF VA Medical Center Clinical Research Unit**

Please note: Effective 3/1/14, the CRS form will no longer be completed and submitted in iRIS. The CRS budget request form can be found at: https://accelerate.ucsf.edu/files/crs/BudgetRequest2015.docx. Follow the instructions on the form to submit.

Even if you click 'Yes' to this question, the form will no longer proceed to the Clinical Research Services (CRS) Application Form section.

○ Yes ◉ No

21.2 This project involves community-based research:

○ Yes ◉ No

21.3 This project involves practice-based research:

○ Yes ◉ No

22.0 End of Study Application

22.1

End of Study Application Form

To continue working on the Study Application: Click on the section you need to edit in the left-hand menu. Remember to save through the entire Study Application after making changes.

If you are done working on the Study Application: Click Save and Continue. If this is a new study, you will automatically enter the Initial Review Submission Packet form, where you can attach consent forms or other study documents. Review the Initial Review Submission Checklist for a list of required attachments.

Answer all questions and attach all required documents to speed up your approval.