Clinical Research in a War Zone

Learnings From a COVID-19 Study That Used E-Informed Consent and Realtime Direct Data Capture

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Target Health, LLC

Clinical Research in a War Zone

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"Thus, though we have heard of stupid haste in war, cleverness has never been seen associated with long delays."

Sun Tzu, The Art of War

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"Most of warfare is about convincing an enemy to give up. The greatest difference now is that the "enemy" is totally unthinking, unpersuadable, and will never give up." (Christian Macedonia, MD)

1. *Program Manager, DARPA (2010-2012)*
2. *Medical Advisor to the Joint Chiefs of Staff (2008-2012)*
3. *Associate Professor Johns Hopkins University, (2012-present)*
4. *CEO Lancaster Life Sciences Group LLC*

Nature of the Enemy

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- SARS-CoV-2, a heartless enemy is:
  - Like a roadside bomb, hiding ready to launch toward us at any moment
  - Like a chameleon, changing its camouflage, depending on the background of the environment
  - Attacking the weak and vulnerable
  - Fearless, no regard for diplomacy and can’t placate with money or power
  - The enemy has only one mission which is to reproduce as many copies as possible

Challenges

- Patient encounters are limited in the ICU
- Use of paper informed consent documents (eICD's) and paper source records for initial data capture in the ICU or COVID-19 unit are not allowed.
- Tablets secured in a sterile environment connected to the internet are acceptable which allows for electronic signatures and remote data capture.
- Stress Levels are very high
- Turnover of coordinators is relatively high

Keeping It Simple – Agreed-Upon Study Endpoints

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- Key Endpoints in support of COVID-19 Studies:
  - NIAID Ordinal Assessment
  - WHO Ordinal Scale for Clinical Improvement
  - Time to extubation
  - Length of ICU stay
  - Length of hospitalization
  - Death within days from first dose of study drug
  - Medications
  - AEs and SAEs

Case Study
Protocol Design

A Randomized, Double-blind, Placebo-controlled, Clinical Trial in Hospitalized Subjects with Pneumonia and Suspected or Confirmed COVID-19

Number of sites = 10

Number of Subjects = 98

eICD Signing

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COSTS

There will be no charge to you for your participation in this study. The study drug, study-related procedures, and study visits will be provided at no charge to you or your insurance company.

EMERGENCY CONTACT / IRB CONTACT

During the study, if you experience any medical problems, suffer a research-related injury, or have questions, concerns or complaints about the study, please contact the study doctor at the telephone number listed on page one of this consent document. If you seek emergency care, or hospitalization is required, alert the treating physician that you are participating in a research study being conducted by the study doctor listed on page one of this document. In the event of an emergency where the study doctor is not available, please go to the emergency room.

If you have any questions about your rights as a research subject, and/or concerns or complaints regarding this research study, you should write to Schulman Associates Institutional Review Board, Inc., 4445 Lake Forest Drive - Suite 300, Cincinnati, Ohio 45242, or call toll-free 1-888-557-2472 during business hours Monday - Friday 8:00 a.m. to 6:00 p.m. EST.

CONSENT

I have read and understand the information in this informed consent document. I have had an opportunity to ask questions and all of my questions have been answered to my satisfaction. I voluntarily agree to participate in this study until I decide otherwise. I do not give up any of my legal rights by signing this consent document. I will receive a copy of this signed consent document.

I will advise my sexual partner(s) of the transference risks.

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☑ Page 6 of 6, I have read and understand the above information.

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Subject's Signature: Please enter password to sign: SIGN

eICD Final Signature

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INFORMED CONSENT

TITLE:	A Phase 3, Open-Label, Non-Randomized, Clinical Trial to Evaluate the Efficacy and Safety of study drug
PROTOCOL NO:	ABC-001
SPONSOR:	ABC Pharmaceutical
INVESTIGATOR:	John Smith
TELEPHONE:	212-681-2100

INTRODUCTION

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the proposed research study. You may take as much time as you need to read this document, and can take it home for consideration before signing it, if you wish. You are also able to ask the study staff any questions you may have about the proposed research study. This consent document describes the purpose, procedures, benefits, risks, discomforts and precautions of the study. It also describes the alternative procedures that are available to you and your right to withdraw from the study at any time. No guarantees or assurances can be made as to the results of the study.

If you are not completely truthful with your study doctor regarding your health history, you may harm yourself by participating in this study.

BACKGROUND AND PURPOSE

You are being asked to participate in this research study because you have hypogonadism (low testosterone levels). Low levels of testosterone can cause symptoms such as decreased sexual function, decreased muscle mass, increased fat mass, and depression. The goal of testosterone replacement therapy in hypogonadal men is to restore testosterone levels to approximately the levels of healthy men in order to help alleviate the symptoms associated with low levels of testosterone.

The purpose of this research study is to:

- Determine if the study drug restores testosterone levels in men with low testosterone levels.
- Test the safety and tolerability of the study drug in subjects with hypogonadism.
- Study how the body absorbs, distributes, breaks down and eliminates the investigational drug after multiple applications.

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Subject's Signature: Signed by **Subject, 91-006** on **23 Jan 2015** at **10:56 (UTC-05:00)**

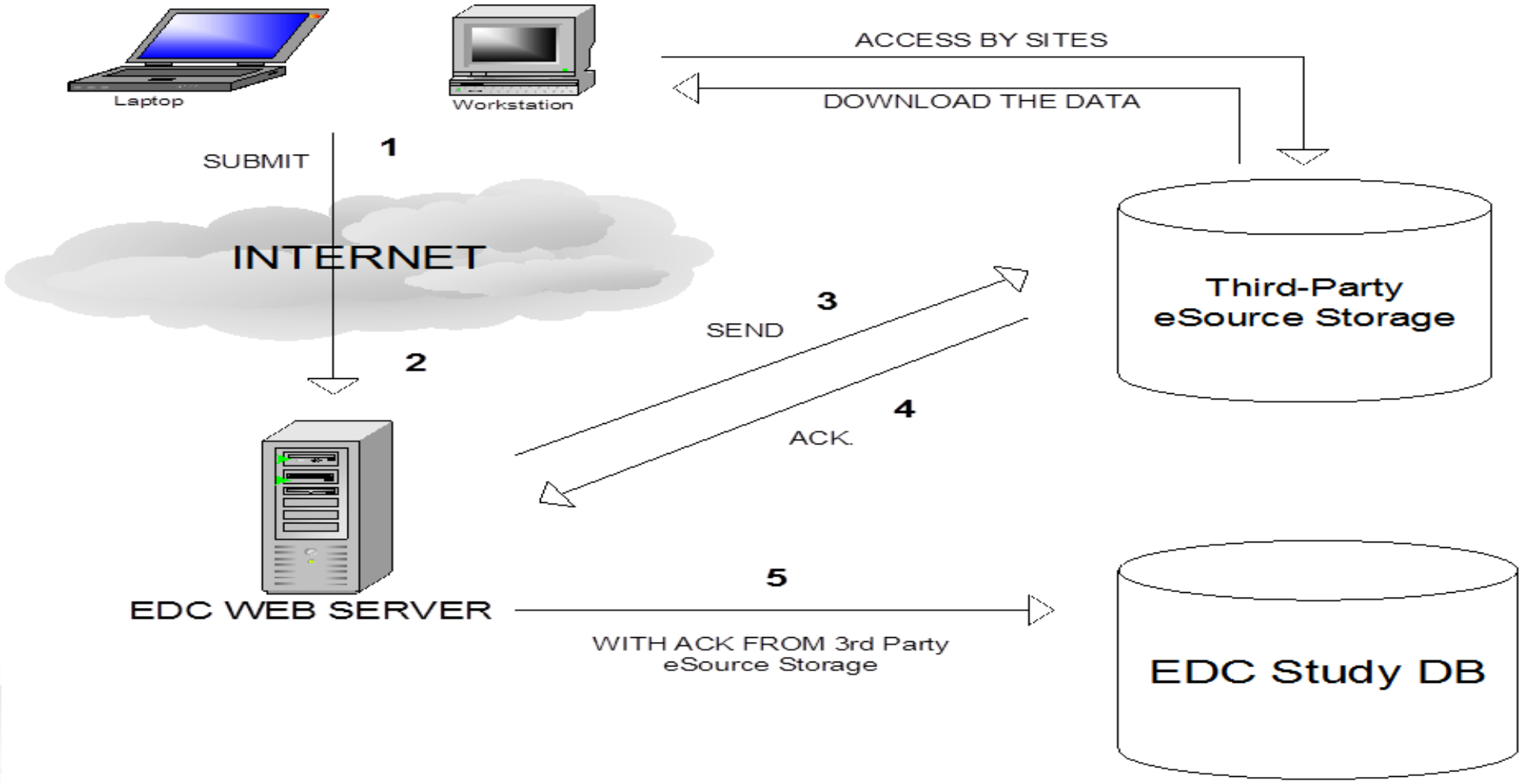
Investigator's Signature: Signed by **Site Investigator, .test** on **23 Jan 2015** at **10:57 (UTC-05:00)**

Print to PDF

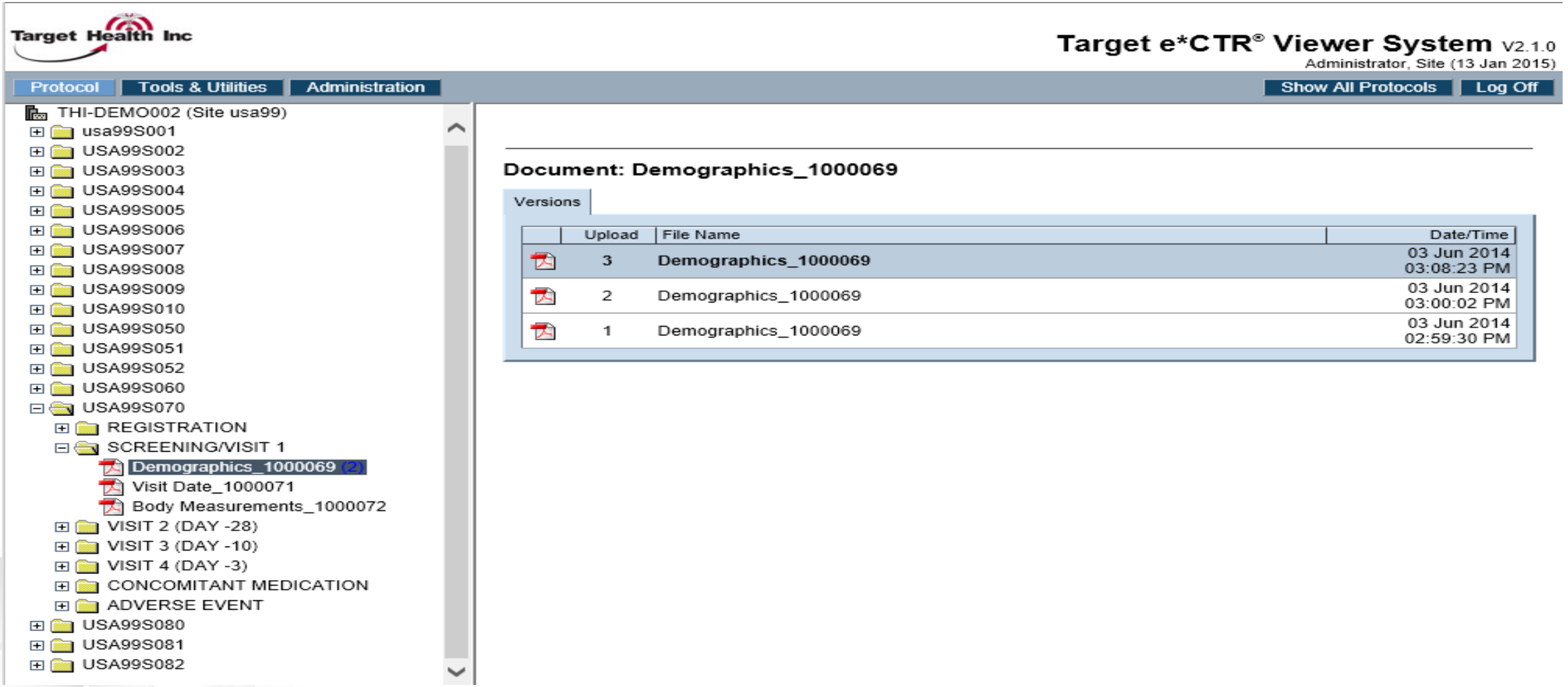
Study Metrics eInformed Consent

SITE	SUBJECTS	ICD SIGNED	eICD	% eICD
001	20	23	22	96%
009	13	13	2	15%
010	45	49	2	4%
002	3	3	0	0%
003	6	6	0	0%
004	3	3	0	0%
005	1	1	0	0%
007	3	3	0	0%
011	2	2	0	0%
012	2	2	0	0%
Sum	**98**	**105**	**26**	**25%**

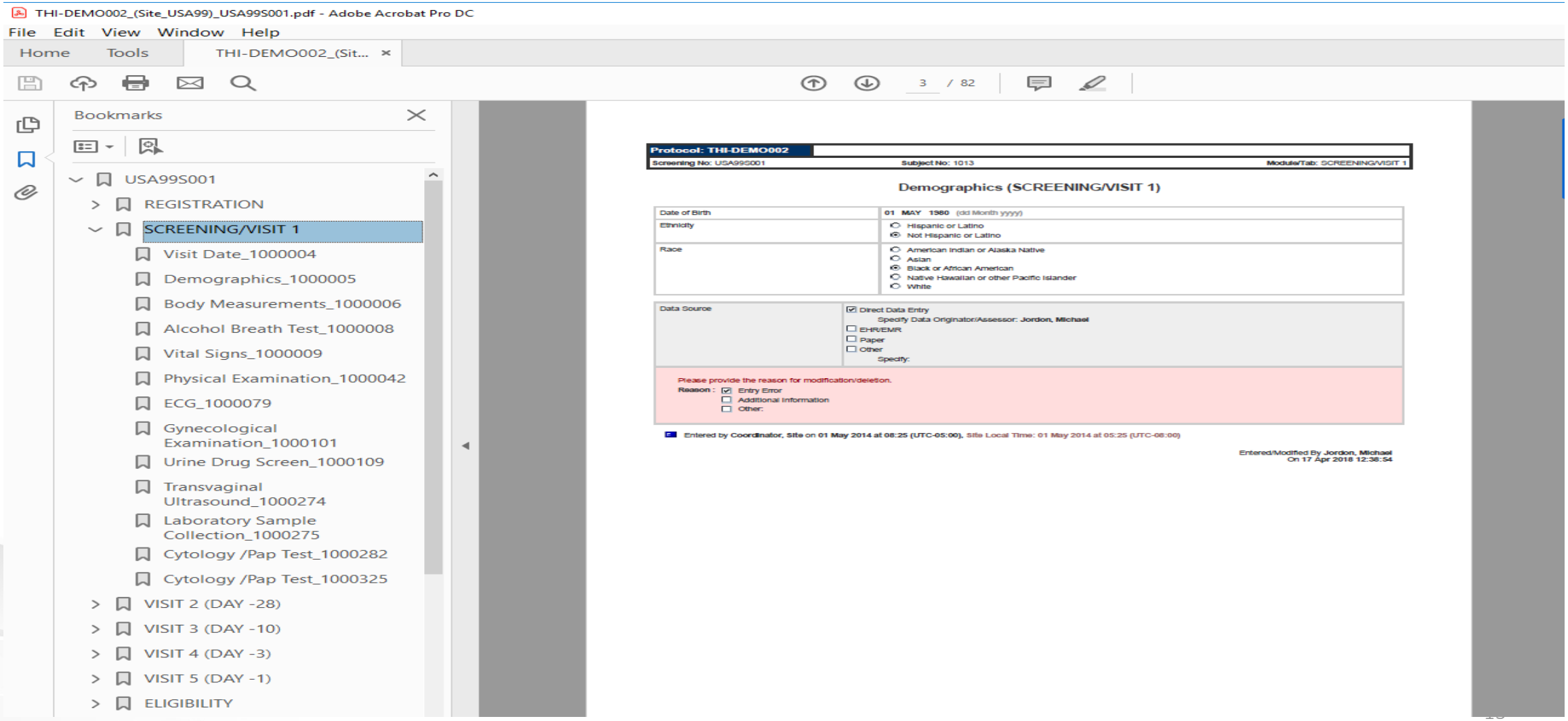
Paperless Clinical Trial Solution (Target eStudio + eCRF + eCTR)



eClinical Trial Record – Audit Trail



eClinical Trial Record - PDF



Study Metrics Direct Data Capture

SITE	N ENTERED	N DDE	% DDE
004	270	270	100%
002	363	109	30%
011	141	35	25%
009	1438	193	13%
005	108	13	12%
010	5400	543	10%
012	215	14	7%
003	371	18	5%
001	2747	89	3%
007	411	8	2%
Sum	**2320**	**620**	**27%**

Form Metrics Direct Data Capture

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Form	N Entered	N DDE	% DDE
Pharmacist	105	102	97%
Re-consent	4	3	75%
Phone Contact	99	46	46%
Randomization	95	30	32%
Visit Date	474	146	31%
General Comments	172	52	30%
End of Trial	45	12	27%
Demographics	97	22	23%
Subject Status	662	143	22%

Form Metrics Direct Data Capture

Form	N Entered	N DDE	% DDE
Radiographic Imaging	95	18	19%
COVID-19 Convalescent Plasma	78	14	18%
ECMO	78	13	17%
Tracheostomy	78	13	17%
Trigger: Adverse Events	85	14	16%
Drug Administration	110	17	15%
NIAID Ordinal Assessment	1110	159	14%
Physical Examination	332	43	13%
Serum Pregnancy Test	10	1	10%

Form Metrics Direct Data Capture

Form	N Entered	N DDE	% DDE
ECG	289	24	8%
Vital Signs	1222	86	7%
COVID-19 Test	178	12	7%
Concomitant Medications	1894	108	6%
Medical History	1426	80	6%
SO2, FiO2	1017	52	5%
Hematology	358	18	5%
Urine Pregnancy Test	20	1	5%
Thyroid Function Test	181	9	5%

Form Metrics Direct Data Capture

Form	N Entered	N DDE	% DDE
IMV Supportive Care	23	1	4%
Chemistry	364	15	4%
COVID-19 Panel	302	11	4%
Adverse Events	289	10	3%
Screen Failure	3	0	0%

THANK YOU

Jules Mitchel, MBA. PhD

CEO

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