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Rehabilitation Treatment Time Related to Patient Outcomes (ACT)

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14. ABSTRACT

The ACT study began in September 2008 and successfully concluded in September 2016. The ACT had two aims 1) convene a meeting of experienced burn rehabilitation clinicians to discuss, debate and report on topics germane to the rehabilitation of patients with burn injury; and 2) to develop and conduct a prospective, multi-center study on the physical outcome of burn survivors in terms of the development of burn scar contracture related to the amount of burn rehabilitation treatment time received during their acute hospitalization. Relative to the latter, a total of 4,621 patients were screened at 14 participating burn centers resulting in 307 complete data sets for analyses. Both Aims were achieved successfully and several noteworthy accomplishments are expounded upon in this report.

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Introduction

Burn Patient Acuity Demographics, Scar Contractures, and Rehabilitation Treatment Time Related to Patient Outcomes, conveniently referred to as the ACT for representing Acuity, Contractures and Time in the title, was a burn rehabilitation research project awarded by the U. S. Army Medical Research and Materiel Command (MRMC) to the American Burn Association (ABA) in September 2008. As an overview, the ACT was conceived with the intention to accomplish two aims. The first aim of the ACT was to convene a consensus meeting of experienced rehabilitation providers to discuss the current state of affairs and future directions for burn rehabilitation care and research. This aim was successfully accomplished during the first year resulting in a publication of the results in the Journal of Burn Care and Research (JBCR).¹

The ACT's second aim was to conduct a prospective, observational, multi-center study in the area of burn rehabilitation. The purpose of the ACT was to investigate patient recovery from burn injury during the acute and intermediate phases of burn rehabilitation through the collection of daily treatment information for analysis. In particular, the ACT was primarily interested in investigating the influence that time spent undergoing rehabilitation treatments had on patient outcomes in terms of burn scar contracture (BSC) formation at the time of discharge from acute hospitalization.

Body

Aim 1

A burn rehabilitation summit meeting was held over three days in 2008. Twenty (20) burn rehabilitation clinicians attended the meeting from the United States and internationally. Two participants were from Canada and two were from Australia. All participants in the summit were well recognized authorities from both the occupational therapy and physical therapy profession along with one physical rehabilitation physician. A summary publication of 15 topics discussed at the meeting was published the following year in 2009.¹ (Appendix A).

Aim 2

Pathologic burn scar contractures that limit joint range of motion and function are problematic for the burn survivor. Although scar contractures become apparent following wound closure, the biologic process to repair and close the burn wound leading to scar contracture begins almost immediately during a patient's acute hospitalization. Rehabilitation treatments delivered prior to beginning the long-term rehabilitation phase of care are paramount to successful patient outcomes. It is the interaction of the type of treatments provided, beginning at patient admission to the burn

treatment facility up until patient discharge, coupled with rehabilitation treatment time which constitutes the important data collection features of the ACT. Over the seven-year course of the ACT study, a plethora of data was collected for analyses and the results to date expounded upon further as part of this report.

Organizational Structure

The structure of the ACT since inception remained constant during the course of the study in terms of organizational involvement of its three primary components: ABA, the U. S. Army Institute of Surgical Research (ISR) as the lead clinical site, and the University of California-Davis (UCD) as the central Data Coordinating Center (DCC) for data acquisition and storage, and delegated regulatory responsibilities. Fourteen (14) ABA verified burn centers participated in the ACT (Appendix B).

Logistics

Completion of the ACT required seven (7) years including three no cost extensions (NCE) of one-two-one years. The initial development of ACT processes were protracted due to needed organizational and coordination efforts between and among the ABA, DCC, lead Principal Investigator (PI) and Institutional Review Board (IRB). Therefore, the first two years of the ACT were consumed on developing an operational structure which then progressed into a framework for data collection. Initial and secondary IRB approval of the developed protocol at the principle site (ISR) was granted on 2 June 2009. The last participating site to gain both local and secondary IRB approval did so in 2012, the fourth year of the study.

A final agreement between the ABA and the DCC was executed in March 2010. Additionally contract agreements between the ABA and all participating facilities required execution as well as CRADA between the ISR. Lastly, individual training of representatives at all 14 participating facilities had to be conducted before data collection could commence.

In support of the ACT, development of seven (7) extensive and detailed Cases Report Forms (CRF) using the Velos eResearch platform from UCD was undertaken. These forms contained an estimate 1400 data points available for possible selection. Beta testing and eventual implementation of all systems took longer than originally anticipated and planned. A sampling of the major data elements contained in these CRFs are seen in Appendix C.

In addition to the three principle parties involved in the ACT, a fourth vital component to the ACT that needed integrated into the system was the Surface Area Graphic Evaluation (SAGE) computer body mapping program. SAGE existed as a 'stand along'

computer program that required extensive remodeling to accommodate the unique concept of Cutaneous Functional Units (CFU).² Although developed before ACT implementation, for purposes of the ACT, CFU assumed a vital role in the study. One most important function of the SAGE-CFU burn mapping system was that it standardized within the ACT what range of motion (ROM) measurements were required to be recorded across all participating burn facilities. A printable table listing required ROM was designed. This development eliminated subjectivity on the part of clinicians as to what measurements to record on patients. In total, 179 ROM measurements were possible within the ACT based on burn extent and location.

As a result, a significant amount of time and effort needed to be expended to bring the SAGE into the study. Extensive software and existing code had to be modified and customized to meet the requirements of the ACT. Additionally, SAGE had to be vetted through the UCD system and integrated into their computer framework which required much co-ordination, especially when changes to SAGE needed implemented.

The bulk of the third and fourth ACT years and into the fifth was dedicated to data collection and audit. In January 2013, an interim analysis (IA) of ACT data collected to date was issued by the Burn Science Advisory Panel (BSAP) and Board of Trustees of the ABA. For the ABA, the BSAP is charged with oversight of grant awards. At the time of the IA, 287 of 435 subjects (66%) had complete data set available for analysis. At that time, there were 66 patients who had not developed a burn scar contracture (BSC) at the time of discharge compared to 221 patients that were discharged from their acute hospitalization with having developed a BSC. Further comparison demonstrated that those patient who had averted BSC development had received statistically significant greater rehabilitation time per CFU (area of potential BSC) than the group of patients who went on to develop at least one BSC by the time of acute hospital discharge. This finding supported that original study supposition that more rehabilitation time received during acute hospitalization lead to better patient outcome in terms of BSC prevention.

Results of the data IA were judged by the BSAP as strong enough to support cessation of data collection. However, the study budget was such that there were sufficient funds to support additional data collection and a direction was made by the BSAP to continue collecting data on patients with greater than ten percent burn only. This directive was made optional for participating facilities, but five burn centers agreed to continue collecting data until the end of December 2013.

Twenty (20) additional subjects with greater than ten percent burn were added to the ACT data base during the oversampling period bring the total number of subjects in the ACT study to 307. Subsequent submission of lingering data and audits were conducted and brought into alignment by the spring of 2014 to conclude ACT subject enrollment.

A final NCE extending the ACT study through September 2015 was requested and received to garner more time for data analyses.

At the time of 'official closure' of the ACT study, a decision by the ABA BSAP was to limit the ACT data set for analyses exclusively to participating ACT facilities until after submission of abstracts for the 2017 ABA annual meeting. Following this time, the ACT data will be made available to interested parties by petition of the ABA. To support this transition, the DCC produced an ACT Data User Manual (see Addendum).

Meetings

Initially, the PI, study statistician, UCD-Velos representative and SAGE developer met to discuss the complexion and integration of ACT study elements in June 2009 in Portland OR. This meeting was followed-on by a meeting of clinical site investigators to review data elements and administrative requirements in July 2009 in Sacramento CA.

Subsequently, during each year of the ACT, representatives of the participating facilities met at the annual meeting of the ABA to discuss issues and progress. Attendance at these meetings can be found in previous Quarterly reports. Additionally, an Interim Progress Report (IPR) meeting was held November 2013 in San Antonio TX to discuss with ACT representatives the results of the ACT interim analysis. The final collective group meeting of participating ACT site representatives was held in 2015 in Boston at which time provisions for dissemination of the composite data set to participating sites was made.

Reportable Outcomes

Facility and Patient Screening and Enrollment

The ACT ended patient screening and subject enrollment at the close of December 2013. As per Appendix D, 4,621 patients in total had been screened at all 14 participating facilities. Appendix E lists participating ACT facilities and the percentage of their projected patient number contribution to the study at the study's outset. Variance in percent contribution by the participating facilities was due to two primary factors: 1) timing of IRB protocol approval and site training; and 2) facility capacity to enroll subjects at any given time. In terms of the latter reason, the ability of any given facility to enroll subjects was predicated on the availability of dedicated staff to support the ACT. Regardless, the ACT was able to summon a sufficient number of subjects to analyze data sufficient enough to support the Aim 2 of the project and to warrant study

closure. Due to audit failures at one ACT site, the remainder of the information and data analyses will be reported without their information for exactness sake.

To this end, Appendix F is a Consort Diagram showing final screening enrollment of 4320 patients resulting in a N = 307 patients with complete data sets. This total equals 70.6% of the originally projected needed enrollment of 435 patients. Although, 364 subjects had been enrolled into the ACT, 57 subjects were moved to an 'off study' status for the various reasons as shown. Twenty-four (24) subjects expired during the course of the ACT but none were attributable to the ACT study itself and thus did not trigger a reportable adverse event. Fifteen (15) subjects withdrew from the study voluntarily and another six (6) were deemed criteria failures. As an example of the latter situation, the patient was consented into the study but when the burn body diagram was completed, the patient failed to meet the minimum burn surface amount. It will be further noted, that in this grouping there remained an additional twelve (12) records that went unreconciled to audit by the time of ACT study closure.

Subject Demographics

For the sanctity of the ACT study reporting, patient demographics are reported in Appendix G based on the thirteen (13) participating sites who contributed useable data to the study and final analysis. The information demonstrates no apparent prejudice or bias involved in patient recruitment, screening or enrollment. In fact, it is remarkable how close the percentages are between screening and enrollment.

Data Analyses

A priori, 46 variables from the CRF listed in Appendix H were used for purposes of data analysis. Descriptive statistics for continuous data is reported as medians with interquartile ranges (IQR) due to the data being skewed. Categorical data is reported as percentages. For continuous data, a T-test or Wilcoxon Two-Sample test was performed when appropriate. All categorical data was compared with a Chi-square test. All tests were two-sided using an alpha=0.05. Logistic regression modeling including Receiver Operating Characteristics curve analysis was conducted to identify which factors were significant in developing a contracture and to evaluate logistic regression. After identifying those with and without a contracture, descriptive and simple statistical tests were performed to describe and compare the groups. Univariate analysis followed by Stepwise Forward and Multiple Logistic Regressions were performed to identify the most predictive variables of developing a burn scar contracture or limitation of motion which were the primary end points of the ACT. Reported results are based on use of data from thirteen participating burn centers as previously clarified.

The study population was analyzed as a whole and by sub-groups defined as small burns ($\leq 10\%$) and large burns ($> 10\%$) – see Appendix I. With the main focus of presence or absence of burn scar contracture (BSC) at the time of discharge from acute hospitalization, the whole Act population was divided according as well. Appendix J lists a breakdown of the causes of burn injury in the total group. Typical for adult burn populations, flame or fire was the prevailing factor.³

Primary Outcome Analysis

Of the total group of subjects (N = 307), 243 subjects (79%) had a burn scar contracture (BSC) or demonstrated a joint limitation of motion (LOM) at the time of discharge from their acute hospitalization (Appendix K). Sixty-four (64) subjects (21%) had neither identified BSC nor LOM. Overall, 8,068 joint ranges of motion (ROM) were measured and recorded. Of these joints, 5,285 joints (66%) had neither BSC nor LOM while 2,783 joints (34%) had an identified BSC or measured joint LOM. The number of scar contractures or limitations in motion is reportedly high compared to the literature. This high incidence may be a reflection that decreased ROM due to other sources than just burn scar contracture may be included and would benefit from further in-depth analysis.

For the overall group (N = 307), neither age nor gender was significantly different between the two groups. The contracted group (CG) had significantly larger burns and a greater percentage of their burns skin grafted compared to the non-contracted group (NC). The CG also had a significantly longer hospitalization which is understandable based on burn severity and was expected. Based on amount of rehabilitation time per treatment day, no significant difference was detected. However, when the administration of rehabilitation was based on severity of injury, either TBSA or CFU, the NC received significantly more rehabilitation time than did the CG.

Interestingly, in both of the sub-groups (Appendices L and M), the only significant variable between subjects who did and did not develop a BSC/LOM was the amount of time per CFU received in favor of the NC group. In both sub-groups, subjects without BSC/LOM received approximately twice as much or more time per CFU.

Regression Analysis

Multiple logistic regression analysis was performed for both sub-groups as well. Appendix N lists the variables that met step-wise forward selection for inclusion after controlling for competing variables. In both cases, the common variables of age and gender were forced into the modeling process.

For both groups, the only significant variable identified by Odds-Ratio was the amount of rehabilitation time received by cutaneous functional unit (Appendices O & P). The interpretation of this information indicates for the $\leq 10\%$ group that for each additional minute of rehabilitation provided to each CFU the odds of developing a BSC/LOM decreases by seven percent. And, for the $> 10\%$ group, those odds decrease by 35%.

For both instances as part of the model, Receiver Operating Characteristic (ROC) Curves were generated and Area Under the Curve (AUC) calculated. In the cases of the $\leq 10\%$ burns, the AUC was calculated at 0.65 indicating a fair fit of the model. However, for the $> 10\%$ burns, the AUC generated was 0.83 indicating a good fit of the model.

Furthermore, when developing the model, an interaction effect was seen between the two groups. In this case, a statistically significant difference (p-value = 0.0014) was found between the two groups in favor of the larger burn group. In this circumstance, the interpretation is that, although both groups benefitted from lengthier burn rehabilitation time, the subjects in the larger burn group benefitted more.

Total Body Surface Area (TBSA) *versus* Cutaneous Functional Unit (CFU) Analysis

In addition, based on the forgoing results, a further analysis was performed to decipher if a difference existed between using TBSA compared to CFU as a model to project patient rehabilitation needs based on burn acuity. Appendix R displays the ROC curves for both TBSA and CFU versus the appearance of BSC. As seen by the Area Under the Curve (AUC), TBSA produces what could be considered a poor fit while CFU produces a good fit. Subsequently, when comparing the two ROC curve areas, a statistically significant difference is produced in favor of using CFU over TBSA.

Key Research Accomplishments

- 1) The ACT study met its primary aim of determining if a difference existed between the appearance of BSC based on amount of rehabilitation time received by patients during acute hospitalization. These data and results strongly support the position that greater amounts of time spent undergoing rehabilitation leads to better outcomes in terms of preventing BSC during acute hospitalization.
- 2) The results are based on the largest known prospective study based on collecting rehabilitation time while utilizing the greatest number of verified burn centers that represented a wide cross section of the United States (Appendix B).

3) The results of the ACT Study produced ten (10) abstract publications (Appendix A) of which two have appeared in published manuscript form^{1,6} while the additional eight are in varying stages of manuscript preparedness.

4) The ACT has identified for a first time that the use of CFU for patient acuity purposes gives a basis upon which to establish burn rehabilitation staffing.

5) Due to the extensive nature of the ACT database, an untold number of additional interactions are available to report in terms of their effect on the current results and future investigations.

Meritorious Recognitions

Part and parcel of the ACT reporting outputs, three publications standout.

1) In 2014, Reference 4 was selected as a Top 6 Abstract of 297 abstracts for presentation at the American Burn Association annual meeting.

2) In 2014, Reference 6 was selected to receive the American Burn Association Burke/Yannas Award for Best Bioengineering Manuscript.

3) In 2015, Reference 8 was selected as a Top 6 Abstract of 431 abstracts for presentation at the American Burn Association annual meeting.

Conclusion

The ACT was highly successful in its efforts and accomplishments despite having required a protracted amount of time. Both aims were achieved and under budget. A large cross-representation of verified burn centers participated in the study. The ACT was able to demonstrate that supplying sufficient rehabilitation during acute hospitalization has the ability to avert the development of burn scar contracture, albeit to a defined extent. Several noteworthy results are contained in this report. Much more investigation of the ACT dataset is possible to further enhance the understanding of burn rehabilitation and advancement of burn survivor outcomes.

On behalf of all burn care clinicians and researchers and those affected by burn injury, the American Burn Association expresses its utmost appreciation to the Department of Defense for entrusting it with this opportunity to advance the knowledge and understanding of burn rehabilitation.

Appendices

Appendix A

References

1. Richard R, Baryza MJ, Carr JA, Dewey WS, Dougherty ME, Forbes-Duchart L, et. al. Burn rehabilitation and research: Proceedings of a Consensus Summit. J Burn Care Res 2009;30:542-573.
2. Richard RL, Lester ME, Miller SF, Bailey K, Hedman TL, Dewey WS, et al. Identification of Cutaneous Functional Units related to burn scar contracture development. J Burn Care Res 2009;30:625 – 631.
3. American Burn Association, National Burn Repository 2014 Version 8.0.
4. Richard R, Dewey WS, Anyan WR, Kemp-Offenberg J, Miller K, et al. Increased burn rehabilitation treatment time improves patient outcomes. J Burn Care Res 2014;35:S100 (Top 6 abstract selection).
5. Richard R, Jones J, Parshley P. Hierarchical decomposition of burn body diagram based on cutaneous functional units and it utility. J Burn Care Res 2014;35:S195.
6. Richard R, Jones J, Parshley P. Hierarchical decomposition of burn body diagram based on cutaneous functional units and its utility. Burke/Yannas Bioengineering Best Paper Award – ABA 2014. J Burn Care Res 2015;36:33-43.
7. Richard R, Dewey WS, Anyan WR, Kemp-Offenberg J, Miller K, et al. Cutaneous functional units relate better than total body surface area to burn patient outcomes. J Burn Care Res 2014;35:S77.
8. Richard RL, Jones JA, Dewey WS, Anyan III WR, Faraklas IH. Small and large burns alike benefit from lengthier rehabilitation time. J Burn Care Res 2015;36:S108 (Top 6 abstract selection).
9. Richard RL, Dewey WS, Jones JA, Anyan III WR, Faraklas IH. Differential assessment of distal interphalangeal joint flexion limitation of burn fingers. J Burn Care Res 2015;36:S105.
10. Richard R, Santos A, Dewey W. Profile of patients without burn scar contracture development. J Burn Care Res 2016;37:S121.
11. Santos A, Richard R. Comparison of the National Burn Repository (NBR) to the Acuity, Contracture, Time (ACT) database. J Burn Care Res 2016;37:S190.
12. Richard R, Santos-Lozada AR. Burn patient acuity demographics, scar contractures and rehabilitation treatment time related to patient outcomes: The ACT study. J Burn Care Res (publication submitted).

Appendix B

ACT Participating Facilities

<u>Facility</u>	<u>Location</u>
1. U. S. Army Institute of Surgical Research	JBSA Fort Sam Houston TX
2. University of California – Davis	Sacramento CA
3. CHI Health St Elizabeth's Medical Center*	Lincoln NE
4. Via Christi Regional Medical Center*	Wichita KS
5. Legacy Emmanuel Oregon Burn Center	Portland OR
6. Loyola University Medical Center*	Maywood IL
7. New York Presbyterian Weill Cornell Hospital	New York City NY
8. St Joseph Hospital Burn Center	Ft Wayne IN
9. University of North Carolina Jaycee Burn Center*	Chapel Hill NC
10. University of Utah Burn Center	Salt Lake City UT
11. Regions Hospital Burn Center	St Paul MN
12. University of California – Irvine	Orange CA
13. University of Iowa*	Iowa City IA
14. Arizona Burn Center at Maricopa Medical Center	Phoenix AZ

* Agreed to continued data collection of burn > 10%

Appendix C

Case Report Forms and Contents

1. Admission information

Subject demographic and social information

Burn injury parameters and characteristics

Pre-existing physical, medical and detailed concomitant injury descriptors

Escharotomy/Fasciotomy procedure information

Presence and severity of inhalation injury

Burn wound depth percentages and summed as Total Body Surface Area burn

2. Daily rehabilitation information

Level of consciousness

Critical care disposition and mobility information

Edema control practice

Subcutaneous tissue exposure

Amount of rehabilitation time

3. Daily splint wear use and time

4. Skin graft procedure information

5. Discharge information

Rehabilitation compliance & Pain tolerance

Presence of pathological conditions

Prophylactic medication use

Hand and lower extremity strength

Presence of scar contracture of special areas

Amputation information

6. Discharge range of motion measurements of all areas except the hand/fingers with qualifiers

7. Discharge range of motion measurements of hand/fingers with qualifiers

Appendix D

Patient Screening and Enrollment*

	9/2011	9/2012	1/24/13	8/31/13	03/31/14	4/11/14 (Final)
# Sites Screening	7	11	11	5	0	0
Total Patients Screened	745	3,163	4,141	4,371	4,621	4,621
Enrollment totals:						
Enrolled	43	239	318	328	336	307
*Off Study/Screen Failure	13	38	48	48	50	79
		* Originally enrolled, later dropped. Data will not be included.				
Not Eligible	546	2,143	2,855	3,053		3,253
**Other	138	694	856	871		906
Declined	18	49	64	71		76

* Provided by Data Coordinating Center

Appendix E

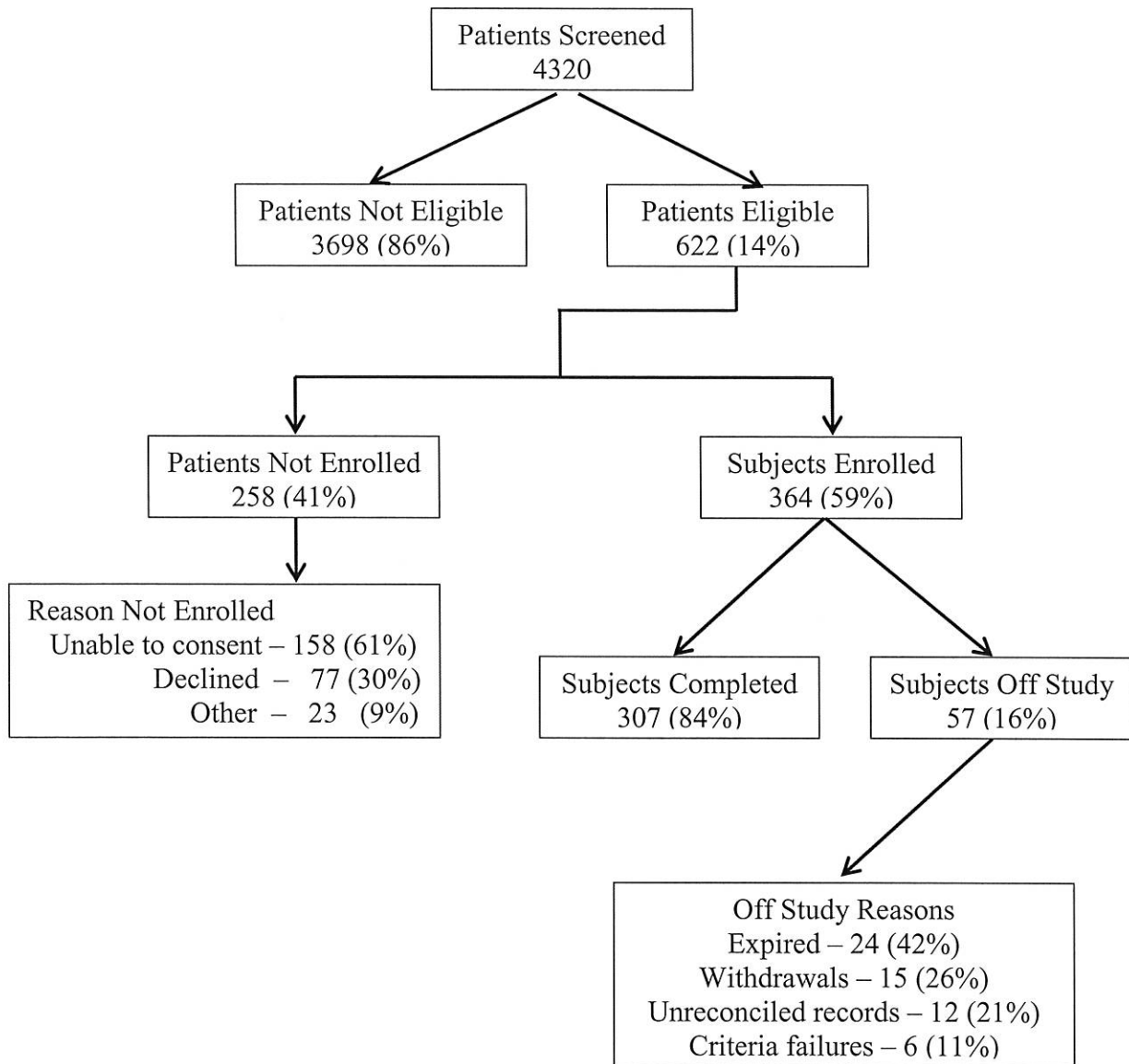
Facility and Patient Enrollment

<u>Facility</u>	<u>Approved Subject Number</u>	<u>Enrolled[#]</u>	<u>Percent</u>
1. USAISR	75	72	96
2. Via Christi	35	11	31
3. Loyola Medical Center	75	18	24
4. St Elizabeth Medical Center	46	6	13
5. New York Presbyterian	60	15	25
6. Oregon Burn Center	60	3	5
7. St Joseph's Medical Center	50	5	10
8. University of Utah	75	75	100
9. Regions Hospital	26	21	81
10. University of North Carolina	25	15	60
11. Arizona Burn Center	125	35	28
12. University of California Irvine	50	18	36
<u>13. University of Iowa</u>	<u>75</u>	<u>13</u>	17
Total	852	307[#]	

Total number per DCC

Appendix F

ACT Consort Diagram



Appendix G

Comparison of Patient Demographic Information*

Category	Screened			Enrolled	
	4087	%		364	%
Gender					
Male	2821	69		258	70.7
Female	1266	31		107	29.3
Ethnicity					
Hispanic	823	19.9		76	20.8
Non-Hispanic	2393	57.8		205	56.0
Unknown	925	22.3		85	23.2
Race					
African-American	332	8.0		24	6.6
American Indian/Alaska Native	19	0.4		5	1.4
Asian	126	3.0		9	2.5
Caucasian	2615	63.1		233	63.7
Native Hawaiian/Pacific Islander	7	0.2		1	0.3
Not reported	311	7.5		24	6.6
Unknown	731	17.7		70	19.1
* Information compiled and supplied by DCC					

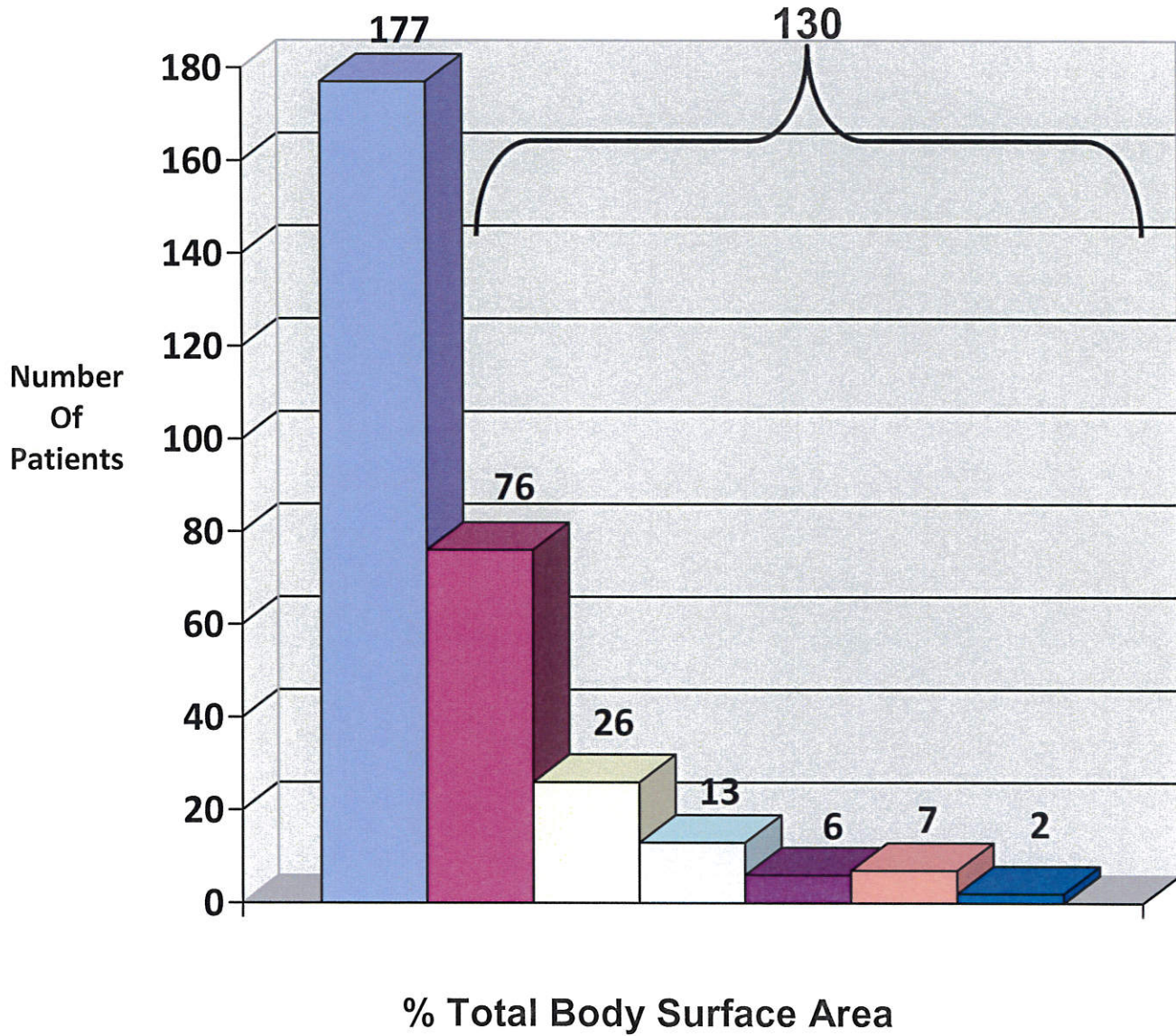
Appendix H

Variables Used in Analyses

Age	Pre-existing medical condition
Gender	Concomitant injury
Height	Percent TBSA
Weight	Percent Superficial Partial-thickness
Hand dominance	Percent Deep Partial-thickness
Burn etiology	Percent skin grafted
Education level	Hospital length of stay (days)
Learning impairment	Inhalation injury – Yes/No
Psychological history	Ventilator use – Yes/No
ETOH/Drug use history	Ventilator days
Toxicology screen	Ventilator days/hospital days
Pre-existing physical problem	Escharotomy/Fasciotomy
Fracture – Yes/No	Total rehabilitation time (direct only)
Exposed tendon/bone	Daily rehabilitation time
Anabolic agent use	Daily rehab time/Total body burn
Thrombo-embolic event	Splinted – Yes/No
Rehabilitation days	Average splint time
Non-rehabilitation days	Rehabilitation compliance
Possible number of burn scar contractures	Pain tolerance
Total rehabilitation time	Amputation – Yes/No
Total non-rehabilitation time	Amputation location
Daily rehab time/Cutaneous Functional Unit	Heterotopic ossification
Rehabilitation days by hospitalization	Neuropathy

Appendix I

Patient Enrollment per % Decile Burn Injury
(N = 307)



Appendix J

Burn Causes (N = 307)

Flame	71.3% (n =219)
Tar, Grease, Oil	11.4% (n = 35)
Hot Liquid	9.1% (n = 28)
Contact	5.2% (n = 16)
Friction	2.0% (n = 6)
Chemical	<1.0% (n = 2)
Hot Gas	<1.0% (n = 1)

Appendix K

ACT Patient Results*

Category	TG (N = 307)	NC (n = 64)	CG (n = 243)	p-Value#
Age (Years)	42 (29-55)	42 (28-54)	42 (30 – 56)	0.5474
Gender (% males)	71 (n=217)	69 (n = 44)	71 (n = 173)	0.7024
% Total Body Surface Area	8.2 (4.4 – 15.7)	4.9 (3.4 – 8.6)	9.6 (4.6 – 17.9)	<0.0001
% Skin grafted	3.5 (0.7 – 7.7)	2.3 (0 – 4.6)	3.99 (1.1 – 8.6)	0.0010
Hospital length of stay (days)	14 (10 - 22)	12 (8 – 17)	14 (10 – 24)	0.0201
Rehab time (Min)/Treatment	42 (29 – 59)	40 (24 – 52)	42.3 (29.7 – 61)	0.1034
Rehab time (Min)/TBSA	4.9 (2.7 – 8.3)	6.1 (4.1 – 10.1)	4.5 (2.4 – 7.9)	0.0031
Rehab time (Min)/CFU	2.2 (1.2 – 4.7)	4.4 (2.0 – 8.9)	1.8 (1.1 – 3.8)	<0.0001
*Data reported as Medians with inter-Quartile range (IQR) unless otherwise indicated; TG = Total Group; NC = Non-contracted Group; CG = Contracted Group; # NC vs. CG; TBSA = Total Body Surface Area; CFU = Cutaneous Functional Unit				

Appendix L

ACT Patient Results ≤ 10% Total Body Surface Burn

Category	TG (n = 177)	NC (n = 64)	CG (n = 243)	p-Value#
Age (Years)	43 (30.5 – 55.5)	43.5 (29.8 - 53)	43 (31 – 58)	0.7755
Gender (% males)	62 (n = 110)	64 (n = 32)	61 (n = 78)	0.7498
% Total Body Surface Area	4.6 (3.3 – 7.0)	4.1 (3.0 – 6.2)	4.7 (3.5 – 7.2)	0.1217
% Skin grafted	2.2 (0.2 – 3.8)	2.1 (0 – 3.9)	2.2 (0.4 – 3.9)	0.5995
Hospital length of stay (days)	12 (8 - 15)	11 (8 – 16)	12 (8 – 15)	0.8281
Rehab time (Min)/Treatment	37 (25 – 50)	33 (21 – 62)	37.5 (27 – 51)	0.2324
Rehab time (Min)/TBSA	7.2 (4.9 – 11.6)	7.1 (4.9 – 11.8)	7.4 (4.7 – 11.8)	0.9442
Rehab time (Min)/CFU	2.8 (1.6 – 5.9)	4.6 (1.9 – 9.5)	2.4 (1.4 – 9.8)	0.0020
*Data reported as Medians with inter-Quartile range (IQR) unless otherwise indicated; TG = Total Group; NC = Non-contracted Group; CG = Contracted Group; # NC vs. CG; TBSA = Total Body Surface Area; CFU = Cutaneous Functional Unit				

Appendix M
ACT Patient Results
> 10% Total Body Surface Burn

Category	TG (n = 130)	NC (n = 14)	CG (n = 116)	p-Value#
Age (Years)	41 (28 – 44)	32.5 (23 – 56.5)	41 (29 – 55)	0.3575
Gender (% males)	82 (n = 107)	86 (n = 12)	83 (n = 95)	0.7238
% Total Body Surface Area	8.8 (4.3 – 15.6)	16.04 (12.4 – 22)	18.6 (13 – 29)	0.3502
% Skin grafted	2.2 (0.2 – 3.8)	8.8 (0 – 13.7)	8.8 (4.8 – 17.3)	0.2117
Hospital length of stay (days)	18.5 (12.99 - 27)	18 (11– 29)	18.5 (13 – 37)	0.3068
Rehab time (Min)/Treatment	51 (36 – 70)	56 (43 – 81)	49 (35 – 69)	0.3735
Rehab time (Min)/TBSA	2.7 (1.7 – 4.4)	3.5 (2.7 – 4.8)	2.5 (1.7 – 4.2)	0.0795
Rehab time (Min)/CFU	1.5 (0.96 – 2.9)	3.8 (2.5 – 6.2)	1.4 (0.9 – 2.6)	<0.0001
*Data reported as Medians with inter-Quartile range (IQR) unless otherwise indicated; TG = Total Group; NC = Non-contracted Group; CG = Contracted Group; # NC vs. CG; TBSA = Total Body Surface Area; CFU = Cutaneous Functional Unit				

Appendix N

Variable Used in Logistic Regression Model

- 1) Age (Forced)
- 2) Gender (Forced)
- 3) Total body surface area burn[^]
- 4) Percent superficial partial-thickness burn[^]
- 5) Possible number of burn scar contractures/limitation in motion^{^, *}
- 6) Total direct rehabilitation treatment time[^]
- 7) Rehabilitation time per cutaneous functional unit^{^, *}
- 8) Rehabilitation time per total body surface area^{*}

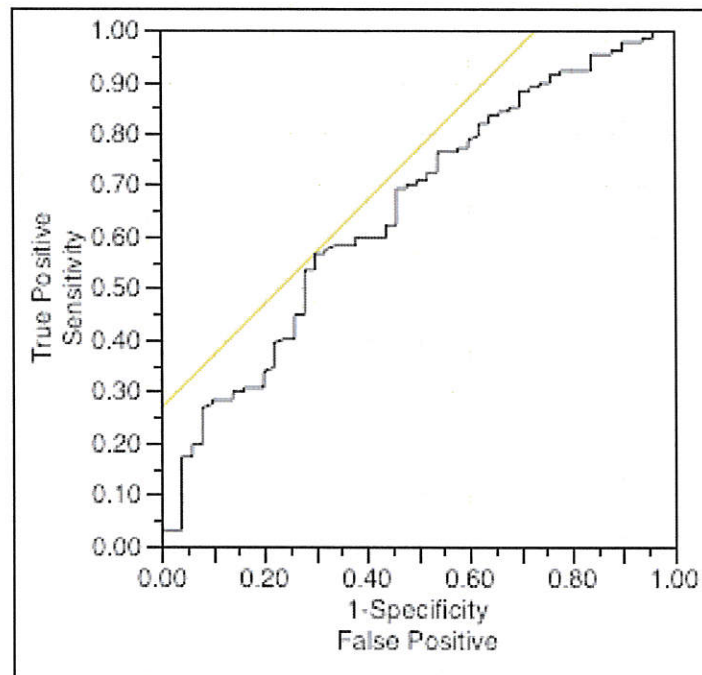
[^] $\leq$ 10% burn

^{*} $>$ 10% burn

Appendix O

Regression Model

$\leq 10\%$ Burn (n = 177)		
Variable	Odds Ratio	95% CI
Rehab time/CFU	1.07	1.02 – 1.12

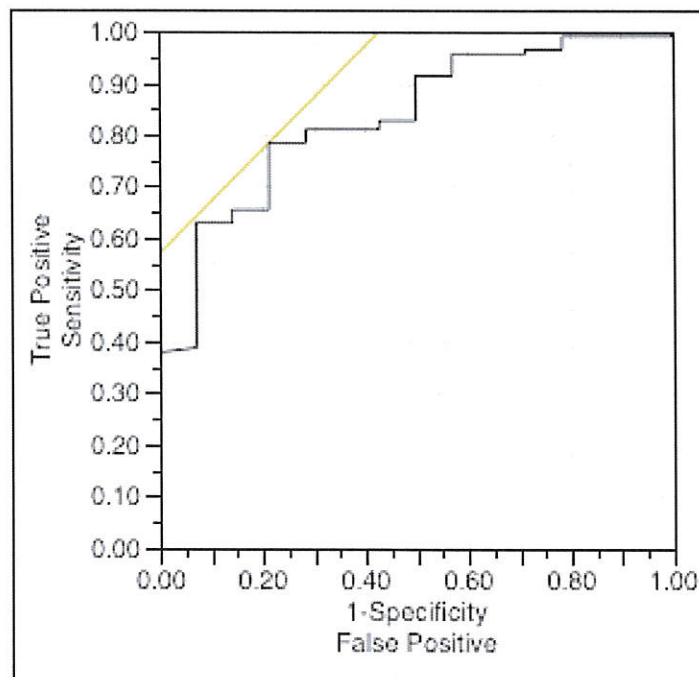


AUC = 0.64906

Appendix P

Regression Model

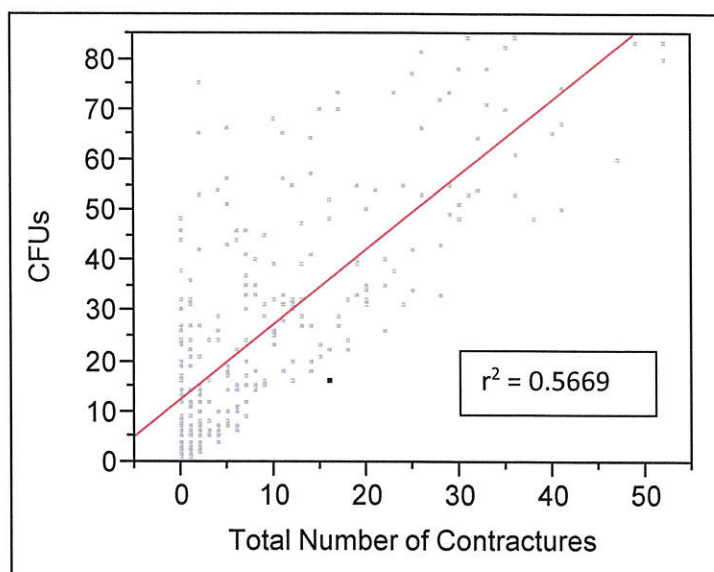
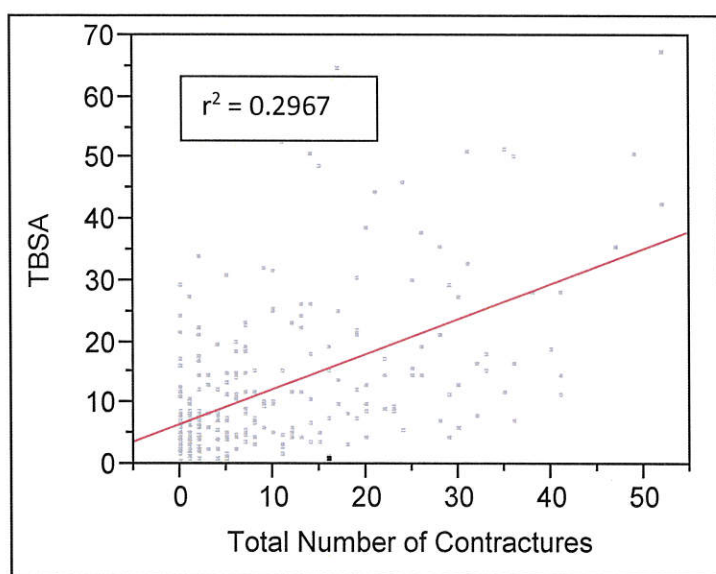
> 10% Burn (n = 130)		
Variable	Odds Ratio	95% CI
Rehab time/CFU	1.36	1.18 – 1.74



AUC = 0.83344

Appendix Q

Logistic Regression TBSA vs CFU



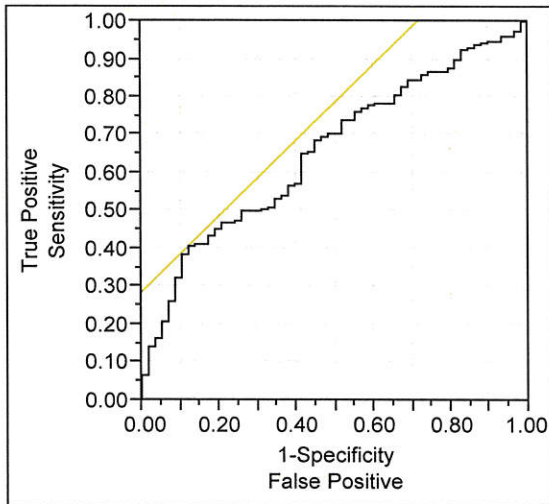
$P < 0.05$

Legend: TBSA = Total Body Surface Area; CFU = Cutaneous Functional Unit

Appendix R

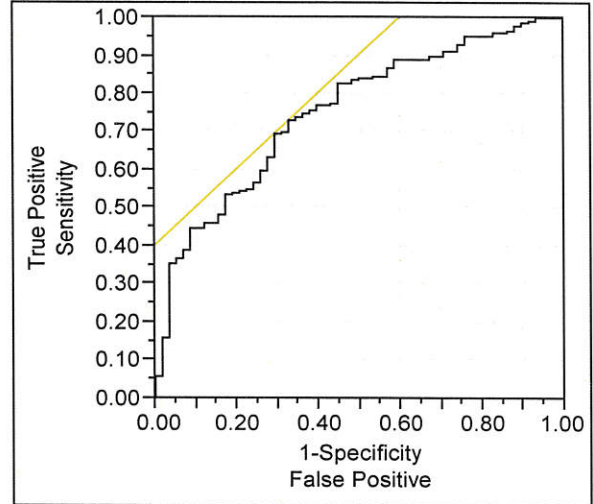
Receiver Operating Characteristic (ROC) Curves

TBSA vs BSC



AUC = 0.657 (Poor Fit)

CFU vs BSC



AUC = 0.752 (Good Fit)

ROC Curve Areas and 95% Confidence Intervals				
	ROC Area	Std Error	Confidence Limits	
TBSA	0.6570	0.0375	0.5835	0.7305
CFU	0.7524	0.0343	0.6852	0.8197

Contrast Test Results		
Chi-Square	Degrees of Freedom	Pr > ChiSq
7.8148	1	0.0052

Legend: TBSA = Total Body Surface Area; CFU = Cutaneous Functional Unit; BSC = Burn Scar Contracture; AUC = Area Under Curve

ACT Data User Manual



UC Davis Data Coordinating Center

INTRODUCTION

This manual is intended as a guide to assist researchers in working with the ACT dataset.

The ACT study, *Burn Patient Acuity Demographics, Scar Contractures and Rehabilitation Treatment Related to Patient Outcomes*, was funded by an award in from USAMRMC to Reginald Richard at the Institute of Surgical Research. A study synopsis and a list of participating sites are included as Appendices 1 and 2.

Enrollment was opened on September 26, 2010 and closed on 12/31/2013. Data was entered remotely by site research staff into the Velos eResearch system and the SAGE program. The SAGE program is designed to calculate burn size and depth as percent TBSA and in square centimeters. The program was modified for this study to include data captured in cutaneous functional units (CFUs). CFUs are defined as “fields of the skin that are involved in the joint range of motion and associated with the sites of common BSC (burn scar contracture).” (Richard R, Jones JA, Parshley P. Hierarchical Decomposition of Burn Body Diagram Based on cutaneous Functional Units and Its Utility J Burn Care Res 2015 36: (1):33-43).

A total of 386 subjects were enrolled throughout the course of the study. This dataset includes data for 342 subjects. Forty four (44) subjects have been excluded due to eligibility/consent criteria. This figure includes 25 subjects that expired after entry into the study. The remaining 19 excluded subjects either declined participation or did not meet study criteria. Since the protocol was written to exclude data collected on subjects that expired, and because consent could not be confirmed for all deceased subjects enrolled, all 25 deceased subjects have been eliminated from the dataset. Data validation during the course of study conduct was carried out by the study PI utilizing remote audit processes.

The University of California Davis (UCD) Data Coordinating Center (DCC) clinical and technical team performed the following data quality review and data presentation efforts:

- Data extracted from both the Velos eResearch system and the SAGE program
 - Reviewed for duplicate CRF entry
 - Reviewed for duplicate patient IDs
 - Reviewed Pt IDs for consistent study approved format (ACT-###-###)
 - Removed non-analyzable sequencing numbers included in data with multiple dropdown options
 - e.g. Drop down menu items listed in numerical order, 1-L. arm, 2-R. arm...
 - Split fields that contained a data array into fields of discrete data. These fields are identified with a sequential number appended to the field name.
 - Column headings for these new discrete fields are sequentially ordered
 - Exception to this process is found in Exposed Bone/Joint/Tendon fields involving the hands or fingers
- Data organized into spreadsheets based on study Case Report Forms (CRF) (CRFs attached as Appendix 3)
 - CRF-Admission Data
 - Admission Demographics
 - Escharotomy/Fasciotomy Procedures
 - CRF-Skin Graft Information
 - Skin Graft Procedures
 - Daily Log Part 1 of 2
 - Daily Log General Status
 - Daily Log Edema Control
 - Daily Log Exposed Bone/Joint
 - Daily Log Part 2 of 2
 - Daily Log Positioning/Splinting

- o Discharge Part 1 of 3
 - Discharge Outcomes
- o Discharge Part 2 of 3
 - Discharge ROM Body
- o Discharge Part 3 of 3
 - Discharge ROM Wrist/Hand

Information in this manual is organized by spreadsheet and includes a description of the data contained in each field/column in the following format:

❖	Column Heading/Field Name	
	Definition	A definition of the data including pertinent data entry information and notes
	Velos/SAGE Field ID	The field ID of the original data in Velos system. The original dataset will be maintained and stored by the UC Davis DCC on a secure server.
	Case Report Form Type	Refers to the original study CRF data entry form. Study CRFs attached as Appendix 3 The dataset includes the following format types Date: All dates are in MM/DD/YYYY format Number: Standard number format (may include decimals) Text: Free text. Select: Data was selected from a defined list
	Options	When the data type is identified as 'Select', the options that were available to select are listed.

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ACRONYMS

Acronym	Description
ACT	Burn Patient Acuity Demographics, Scar Contractures and Rehabilitation Treatment Time Related to Patient Outcomes
BSC	Burn Scar Contracture
BTF	Burn Treatment Facility
CFU	Cutaneous Functional Unit
cm	centimeter
CRF	Case Report Form
CSV	comma separated value
DCC	Data Coordinating Center
DIP	distal interphalangeal
DVT	deep vein thrombosis
eCRF	electronic case report form
ETOH	Alcohol
HO	Heterotopic Ossification
IP	interphalangeal
kg	kilogram
LB	Lund -Browder
LE	lower extremity
MCP	metacarpophalangeal
pct	Percent
PI	Principal Investigator
PIP	proximal interphalangeal
ROM	Range of Motion
SAGE	Surface Area Graphic Evaluation
TBSA	Total Body Surface Area
VTE	venous thromboembolism

ADMISSION DEMOGRAPHICS

❖	Patient ID	
	Definition	A unique patient study ID was created using the format ACT-###-### for each subject at the time of enrollment. This identifier is contained in each spreadsheet and can be used to link data for a specific patient across spreadsheets.
	Velos Field ID	Patient ID, Patient Study ID, Facility ID
	Case Report Form	All
	Type	Text
❖	Gender	
	Definition	Gender
	Type	Select
	Options	Male, Female, Other, Unknown
❖	Ethnicity	
	Definition	Primary ethnicity
	Type	Select
	Options	Hispanic or Latino, Non-Hispanic, Not Reported, Unknown
❖	Race	
	Definition	Primary race
	Type	Select
	Options	African American, American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, Not Reported, Unknown, White
❖	Date of Burn	
	Definition	Date of burn injury
	Velos Field ID	date_burn
	Case Report Form	Admission
	Type	Date
❖	Date of Admission (BTF)	
	Definition	Date of patient admission to burn treatment facility (BTF). This date may be the same or different from the date of burn.
	Velos Field ID	date_admission
	Case Report Form	Admission
	Type	Date
❖	Age	
	Definition	Age at the time of acute burn admission. Study inclusion criteria included patients who were 18 years of age and older. Patients over 89 years, entered as 90.
	Velos Field ID	Age_1
	Case Report Form	Admission
	Type	Number
❖	Height (cm)	
	Definition	Height in centimeters
	Velos Field ID	height_cm
	Case Report Form	Admission
	Type	Number

ADMISSION DEMOGRAPHICS

❖	Weight Before Injury (Kg) Definition Velos Field ID Case Report Form Type	Weight before injury reported in kilograms weight_kg Admission Number
❖	Hand Dominance Definition Velos Field ID Case Report Form Type Options	Hand dominance of patient hand_dominance Admission Select Right, Left, Ambidextrous, Unknown, To Be Determined
❖	Cause of Burn Definition Velos Field ID Case Report Form Type Options	Primary cause or mechanisms of burn injury. Tar/Grease/Oil and other petroleum or lipid substance, including cooking oil, candle wax and paraffin, considered a separate category. Exclusion criteria: electrical injury of any source, including electrical flash type injuries cause_burn Admission Select Flame, Chemical, Hot Liquid, Tar/Grease/Oil, Hot Gas, Radiation, Friction, Contact
❖	Education Level Definition Velos Field ID Case Report Form Type Options	Highest level of reported education achieved. education_level Admission Select Did Not Graduate High School, High School Graduate, Some College, College Graduate, Advanced Degree, Unknown
❖	Learning Impairment Definition Velos Field ID Case Report Form Type Options	Documented Learning Impairment learning_impairment Admission Select Yes, No, Not Documented
❖	Psych Problems Definition Velos Field ID Case Report Form Type Options	Documented previous psychological problem psych_problems Admission Select Yes, No, Not Documented
❖	ETOH/Drug Abuse Definition Velos Field ID Case Report Form Type Options	Previous drug or alcohol abuse based on either patient self-report or information documented in medical history. This section may not have been collected due to varying state regulations. etoh_drug Admission Select Yes, No, Unknown

ADMISSION DEMOGRAPHICS

❖	Positive Toxicology Screen	
	Definition	Documented positive toxicology screen. This section may not have been collected due to varying state regulations.
	Velos Field ID	tox_screening
	Case Report Form	Admission
	Type	Select
	Options	Yes, No, Unknown
❖	Pre-Existing Physical Condition (_1-_5)	
	Definition	Documented pre-existing physical condition Originally a data array that was split into 5 columns of discrete data. The columns are identified with a sequential number appended to the column header as follows: Pre-Existing Physical Condition_1, Pre-Existing Physical Condition_2, Pre-Existing Physical Condition_3, Pre-Existing Physical Condition_4, and Pre-Existing Physical Condition_5. Patients may have multiple conditions, with at least one (includes option 'none') and up to five (5). Each is stored in a separate column and conditions may appear in any of the five (5) columns. For example: Rotator Cuff may appear in column "..._1" for subject X and in column "..._3" for subject Y.
	Velos Field ID	
	Case Report Form	Admission
	Type	Select
	Options	None, Contracture / Limitation of Motion, Rotator cuff, Rheumatoid Arthritis, Osteoarthritis, Visual impairment, Closed Head Injury, Peripheral Neuropathy, Right Hemiparesis/plegia, Left Hemiparesis/plegia, Paraplegia, Quadriplegia, Multiple sclerosis, Guillian-Barre, Amyotrophic lateral sclerosis, Other, Unknown Note: If 'Other' was selected, additional data stored in corresponding column as described below. Use above incorrect spelling of "Guillain-Barré" for search (appears in data)
❖	Other Pre-Existing Physical Condition	
	Definition	If 'Other' selected from pre-existing physical condition option list (above), this field was completed using free text. Multiple conditions may be contained in the entry.
	Velos Field ID	If Other, Please Explain
	Case Report Form	Admission
	Type	Text
❖	Pre-Existing Medical Conditions (_1-_4)	
	Definition	Documented pre-existing medical condition (s) Originally a data array that was split into 4 columns of discrete data. The columns are identified with a sequential number appended to the column header as follows: Pre-Existing Medical Conditions_1, Pre-Existing Medical Conditions_2, Pre-Existing Medical Conditions_3, and Pre-Existing Medical Conditions_4. Patients may have multiple conditions, with at least one (includes option 'none') and up to four (4). Each is stored in a separate column and conditions may appear in any of the 5 columns. For example: Hypertension may appear in column "..._1" for subject X and in column "..._3" for subject Y
	Velos Field ID	preexisting_medical
	Case Report Form	Admission
	Type	Select

ADMISSION DEMOGRAPHICS

❖	Pre-Existing Medical Conditions (_1-_4)	
	Options	None, Diabetes, Lupus, Circulatory Disorder, Hypertension, Renal Insufficiency, Hepatitis, HIV/AIDS, Cancer, Seizure History, Pulmonary Diagnosis, Dementia, Other, Unknown Note: If 'Other' was selected, additional data stored in corresponding column as described below.
❖	Other Pre-Existing Medical Conditions	
	Definition	If 'Other' selected from pre-existing medical condition option list (above), this field was completed using free text. Multiple conditions may be included in the entry.
	Velos Field ID	If Other, please explain
	Case Report Form	Admission
	Type	Text
❖	Concomitant Medical Problems (_1-_2)	
	Definition	Documented Concomitant Medical Problem(s) Originally a data array that was split into 2 columns of discrete data. The columns are identified with a sequential number appended to the column header as follows: Concomitant Medical Problems_1 and Concomitant Medical Problems_2. Patients may have multiple problems, with at least one (includes option 'none') and up to two (2). Each is stored in a separate column and problems may appear in either column. For example: Soft Tissue Injury may appear in column "..._1" for subject X but may appear in column "_2" for subject Y.
	Velos Field ID	concomitant_problems
	Case Report Form	Admission
	Type	Select
	Options	None, Fracture(s), Traumatic Brain Injury, Amputation, Paraplegia, Quadriplegia, Soft Tissue Injury, Vision Problem, Hearing Problem, Internal Organ Problem, Vascular Damage, Pulmonary Injury, Seizure Activity, Other, Unknown Note: If 'Other', Fracture, Soft Tissue Damage, or Vascular Damage were selected, additional data stored in corresponding columns as described below.
❖	Other Concomitant Medical Problems	
	Definition	If 'Other' selected from concomitant medical problems option list (above), this field was completed using free text. Multiple problems may be included in the entry.
	Velos Field ID	other_concomitant
	Case Report Form	Admission
	Type	Text
❖	Concomitant Medical Problems-Fracture (_1-_7)	
	Definition	If fracture(s) is indicated in the Concomitant Medical Problems Column (above), the body area in which the fracture(s) occurred is contained in Body Area Fracture Site Columns 1-7. Originally a data array that was split into 7 columns of discrete data. The columns are identified with a sequential number appended to the column header as follows: Body Area-Fracture Site_1, Body Area-Fracture Site_2, Body Area-Fracture Site_3, Body Area-Fracture Site_4, Body Area-Fracture Site_5, Body Area-Fracture Site_6, and Body Area-Fracture Site_7. Patients may have multiple fractures. Each is stored in a separate column and any body area may appear in any column. For example the option "Right Arm" may appear in column Body Area Fracture Site_1 for subject X and in Body Area-Fracture Site_6 for subject Y.
	Velos Field ID	fracture_site
	Case Report Form	Admission
	Type	Select

ADMISSION DEMOGRAPHICS

❖	Concomitant Medical Problems-Fracture (_1-7)	
	Options	Cervical, Thoracic, Lumbar, Pelvis, Right arm, Right forearm, Right wrist, Right hand, Left arm, Left forearm, Left wrist, Left hand, Right index finger, Right middle finger, Right ring finger, Right small finger, Left index finger, Left middle finger, Left ring finger, Left small finger, Right thumb, Left thumb, Right thigh, Right leg, Right foot, Right toe(s), Left thigh, Left leg, Left foot, Left toe(s) Note: arm = humerus, forearm = radius or ulna or both, wrist = any carpal bone(s), hand = any metacarpal bone(s), finger or thumb = any phalanx(ge)s, thigh = femur, leg = tibia or fibula or both includes malleoli, foot = any tarsal or metatarsal bone(s), toe(s) = any phalanx(ge)
❖	Concomitant Medical Problems-Soft Tissue Damage (_1-12)	
	Definition	If soft tissue damage (muscle, tendon, ligament or other structural soft tissue damage including tissue strains or joint sprains) is indicated in the Concomitant Medical Problems Column (above), the body area in which the injury occurred is contained in columns Body Area-Soft Tissue Damage columns 1-12.
	Velos Field ID	Body Area-Soft Tissue Damage
	Case Report Form	Admission
	Type	Select
	Options	Right Shoulder, Left Shoulder, Right Anterior Arm, Left Anterior Arm, Right Posterior Arm, Left Posterior Arm, Right Elbow, Left Elbow, Right Anterior Forearm, Left Anterior Forearm, Right Posterior Forearm, Left Posterior Forearm, Right Anterior Wrist, Left Anterior Wrist, Right Posterior Wrist, Left Posterior Wrist, Right Dorsal Hand, Left Dorsal Hand, Right Palmar Hand, Left Palmar Hand, Right Dorsal Fingers, Left Dorsal Fingers, Right Palmar Fingers, Left Palmar Fingers, Right Buttock, Left Buttock, Right Anterior Thigh, Left Anterior Thigh, Right Posterior Thigh, Left Posterior Thigh, Right Knee, Left Knee, Right Anterior Leg, Left Anterior Leg, Right Posterior Leg, Left Posterior Leg, Right Ankle, Left Ankle, Right Dorsal Foot, Left Dorsal Foot, Right Plantar Foot, Left Plantar Foot
❖	Concomitant Medical Problems-Vascular Damage	
	Definition	Documented blood vessel disruption including vessel laceration in the anatomic areas listed. NO VASCULAR DAMAGE DATA WAS ENTERED FOR THE STUDY
	Velos Field ID	Body Area-Vascular Damage
	Case Report Form	Admission
❖	Inhalation Injury	
	Definition	Severity of inhalation injury as determined by physician using the following guide: (Adapted from Chou SH, Lin SD, Chuang HY, Cheng YJ, Kao EL, Huang MF. Fiber-optic bronchoscopic classification of inhalation injury. Surg Endosc 2004;18:1377-1379) • Mild – clinical impression, mild edema and hyperemia, with or without carbonaceous sputum, no intubation • Moderate – clinical impression, severe edema and hyperemia, with or without carbonaceous sputum, intubation • Severe – clinical impression, ulceration, necrosis, absence of both cough reflex and bronchial secretions, intubation
	Velos Field ID	inhalation_injury
	Case Report Form	Admission
	Type	Select
	Options	None, Mild, Moderate, Severe

ADMISSION DEMOGRAPHICS

❖	Superficial Partial Thickness	
	Definition	The total percentage of each burn depth based on the SAGE diagram. The SAGE program was used to calculate the percentage amount of each burn depth and values were updated throughout hospitalization as appropriate. If superficial burn areas progressed to deeper burn areas, users were instructed to modify the SAGE diagram and enter the new values.
	Velos Field ID	superficial_thickness
	Case Report Form	Admission
	Type	Number
❖	Deep Partial Thickness	
	Definition	The total percentage of each burn depth based on the SAGE diagram. The SAGE program was used to calculate the percentage amount of each burn depth and values were updated throughout hospitalization as appropriate. If superficial burn areas progressed to deeper burn areas, or if deep burn areas were skin grafted, users were instructed to modify the SAGE diagram and enter the new values. Burn wounds that remained open at 3 weeks without skin grafting were to be marked as deep.
	Velos Field ID	deep_thickness
	Case Report Form	Admission
	Type	Number
❖	Skin Grafted	
	Definition	The total percentage of skin grafted was based on the SAGE diagram. The SAGE program was used to calculate the percentage amount of each burn depth and values were updated throughout hospitalization as appropriate. If deep burn areas were skin grafted, users were instructed to modify the SAGE diagram and enter the new values.
	Velos Field ID	skin_grafted
	Case Report Form	Admission
	Type	Number
❖	Percent TBSA	
	Definition	This value was auto-generated by the Velos system using the values from the Superficial Partial Thickness, Deep Partial Thickness, and Skin Grafted fields. This value should equal the burn TBSA value of the Final Sage Diagram.
	Velos Field ID	total_surface
	Case Report Form	Admission
	Type	Number

ESCHAROTOMY/FASCIOTOMY PROCEDURES

❖	Patient ID	
	Definition	A unique patient study ID was created using the format ACT-###-### for each subject at the time of enrollment. This identifier is contained in each spreadsheet and can be used to link data for a specific patient across spreadsheets.
	Velos Field ID	Patient ID, Patient Study ID, Facility ID
	Case Report Form	All
	Type	Text
❖	Date of Procedure	
	Definition	Date of each escharotomy/fasciotomy procedure performed throughout hospitalization If an area of escharotomy performed on one day was advanced to a fasciotomy at another time, users were instructed to enter a separate date window and select the same body location.
	Velos Field ID	date_procedure
	Case Report Form	Admission
	Type	Date
❖	Escharotomy / Fasciotomy	
	Definition	Type of procedure performed, either escharotomy or fasciotomy
	Velos Field ID	surgical_procedure
	Case Report Form	Admission
	Type	Select
	Options	escharotomy, Fasciotomy
❖	Procedure Body Location(s) (1-6)	
	Definition	Body Location of all escharotomy/fasciotomy procedure performed Originally a data array that was split into 6 columns of discrete data. The columns are identified with a sequential number appended to the column header as follows: Body Location(s)_1, Body Location(s)_3, Body Location(s)_3, Body Location(s)_4, Body Location(s)_5, Body Location(s)_6.
	Velos Field ID	procedure_location
	Case Report Form	Admission
	Type	Select
	Options	Arm (right), Forearm (right), Hand (right), Finger(s)-(right), Thigh (right), Leg (right), Foot (right), Arm (left), Forearm (left), Hand (left), Finger(s)-(left), Thigh (left), Leg (left), Foot (left), Thorax

SKIN GRAFT PROCEDURES

❖	Patient ID	
	Definition	A unique patient study ID was created using the format ACT-####-#### for each subject at the time of enrollment. This identifier is contained in each spreadsheet and can be used to link data for a specific patient across spreadsheets.
	Velos Field ID	Patient ID, Patient Study ID, Facility ID
	Case Report Form	All
	Type	Text
❖	Date of Graft	
	Definition	Date of graft procedure
	Velos Field ID	date_graft
	Case Report Form	Skin Graft Information
	Type	Date
❖	Body Area - Skin Grafts	
	Definition	anatomic body area of skin graft If one piece of a skin graft covers multiple areas, uses were instructed to enter the information for each area listed in the menu
	Velos Field ID	bodyarea
	Case Report Form	Skin Graft Information
	Type	Select
	Options	Scalp, Forehead, Right Upper Eyelid, Left Upper Eyelid, Right Lower Eyelid, Left Lower Eyelid, Right lateral eye, Left lateral eye, Right medial eye, Left medial eye, Right cheek / nose, Left cheek / nose, Upper lip, Right mouth, Left mouth, Lower lip/chin, Anterior neck, Posterior neck, Anterior trunk right upper quadrant, Anterior trunk left upper quadrant, Anterior trunk right lower quadrant, Anterior trunk left lower quadrant, Posterior trunk right upper quadrant, Posterior trunk left upper quadrant, Posterior trunk right lower quadrant, Posterior trunk left lower quadrant, Right anterior arm, Right posterior arm, Left anterior arm, Left posterior arm, Right anterior forearm, Left anterior forearm, Right posterior forearm, Left posterior forearm, Right Palm / Fingers / Thumb, Right Palmar hand, Right Palmar index finger, Right Palmar middle finger, Right Palmar ring finger, Right Palmar small finger, Right Palmar thumb, Right Dorsal Hand and Fingers / Thumb, Right Dorsal hand, Right Dorsal index finger, Right Dorsal middle finger, Right Dorsal ring finger, Right Dorsal small finger, Right Dorsal thumb, Left Palm / Fingers / Thumb, Left Palmar hand, Left Palmar index finger, Left Palmar middle finger, Left Palmar ring finger, Left Palmar small finger, Left Palmar thumb, Left Dorsal Hand and Fingers / Thumb, Left Dorsal hand, Left Dorsal index finger, Left Dorsal middle finger, Left Dorsal ring finger, Left Dorsal small finger, Left Dorsal thumb, Right anterior thigh, Left anterior thigh, Right posterior thigh, Left posterior thigh, Right anterior leg, Left anterior leg, Right posterior leg, Left posterior leg, Right dorsal foot, Left dorsal foot, Right plantar foot, Left plantar foot, Right dorsal toes, Right plantar toes, Left dorsal toes, Left plantar toes
❖	Depth Of Burn	
	Definition	Depth of burn in body area grafted
	Velos Field ID	burn_severity
	Case Report Form	Skin Graft Information
	Type	Select
	Options	Deep Partial Thickness, Full Thickness, Sub Dermal, Mixed, Unknown

SKIN GRAFT PROCEDURES

❖	Graft Type	
	Definition	Type of graft. If autograft was used immediately to cover a skin substitute, users were instructed to enter both as separate item. If homograft was used to cover an autograft, users were instructed to only enter autograft information.
	Velos Field ID	graft_type
	Case Report Form	Skin Graft Information
	Type	Select
	Options	Sheet, Skin Substitute, Mesh, Flap, Full Thickness, Homo / Heterograft
❖	Skin Graft Thickness	
	Definition	Thickness of skin graft used to cover the pertinent area. Users were instructed to enter the information in thousands of an inch
	Velos Field ID	sgraft_thickness [sic]
	Case Report Form	Skin Graft Information
	Type	Number
❖	Mesh Ratio	
	Definition	Mesh Ratio Users were instructed to select 'Not Applicable' for skin substitutes, homo/heterografts and sheet grafts (unless 'pie crusted').
	Velos Field ID	mesh_ratio
	Case Report Form	Skin Graft Information
	Type	Select
	Options	Not Applicable, 1:01, 1.25:1, 1.5:1, 2:01, 3:01, 4:01, 6:01, 9:01, Other
❖	If Skin Substitute, Type	
	Definition	type of substitute (if used)
	Velos Field ID	skin_substitute
	Case Report Form	Skin Graft Information
	Type	Select
	Options	None, CEA, Integra, PriMatrix, Alloderm, Other
❖	Wound Bed	
	Definition	wound bed upon which the skin graft was placed
	Velos Field ID	wound_bed
	Case Report Form	Skin Graft Information
	Type	Select
	Options	Options: Dermis, Granulation Tissue, Fat, Muscle, Fascia, Mixed, Unknown
❖	Donor Site Location	
	Definition	donor site location (body area)
	Velos Field ID	donor_location
	Case Report Form	Skin Graft Information
	Type	Select
	Options	None, Scalp, Anterior Trunk, Posterior Trunk, Right - Anterior Arm, Left - Anterior Arm, Right - Posterior Arm, Left - Posterior Arm, Right - Anterior Forearm, Left - Anterior Forearm, Right - Posterior Forearm, Left - Posterior Forearm, Right - Anterior Thigh, Left - Anterior Thigh, Right - Posterior Thigh, Left - Posterior Thigh, Right - Anterior Leg, Left - Anterior Leg, Right - Posterior Leg, Left - Posterior Leg, Right - Dorsal Foot, Left - Dorsal Foot, Right - Plantar Foot, Left - Plantar Foot, Unknown

DAILY LOG GENERAL STATUS

❖	Patient ID Definition Velos Field ID Case Report Form Type	A unique patient study ID was created using the format ACT-###-### for each subject at the time of enrollment. This identifier is contained in each spreadsheet and can be used to link data for a specific patient across spreadsheets. Patient ID, Patient Study ID, Facility ID All Text
❖	Date of Treatment Definition Velos Field ID Case Report Form Type	Date of data collection Note: This field is from the CRF Daily Log Part 1 of 2 which was split into 3 spreadsheets (Daily Log General Status, Daily Log Edema control and Daily Log Exposed Bone/Joint) and is contained in those spreadsheets under the same name. treatment_date Daily Log Part 1 of 2 Date
❖	Level of Consciousness Definition Velos Field ID Case Report Form Type Options	Level of Consciousness assessed using the following guide: (adapted from O’Sullivan SB, Schmitz TJ. Physical Rehabilitation 5th Ed, 2007). • Comatose / Chemically Paralyzed – patient unable to display signs of voluntary motor movement or function; reflex motor response may or may not be present. • Stupor / Obtunded – patient arousable but repeated stimulation required to maintain level of interaction; may require strong or noxious stimulation; patient may be unable to interact or rehabilitation session mostly unproductive. • Lethargic – patient drowsy; may have difficulty focusing or maintaining attention on a question or task if not stimulated. • Conscious / Alert – patient awake and able to appropriately participate in rehabilitation session. level_consciousness Daily Log Part 1 of 2 Select Comatose / Chemically Paralyzed, Stupor / Obtunded, Conscious
❖	Intensive Care Definition Velos Field ID Case Report Form Type Options	Level of care Intensive_care Daily Log Part 1 of 2 Select Yes, No
❖	Ventilator Definition Velos Field ID Case Report Form Type Options	Ventilator support, includes endo- oro- or nasotracheal intubation patient_ventilator Daily Log Part 1 of 2 Select Yes, No

DAILY LOG GENERAL STATUS

❖	Bedrest	
	Definition	On bedrest-defined as patient completely confined to bed regardless of level of consciousness or activity level while in bed
	Velos Field ID	bedrest_1
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	Yes, No
❖	Out of Bed	
	Definition	Out of bed,-defined as transfer to a secondary sitting surface or bedside sitting regardless of level of consciousness or activity level. Includes bedside standing, use of tilt table standing table or similar device and bedside commode use.
	Velos Field ID	outof_bed
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	Yes, No
❖	Ambulated	
	Definition	Ambulated-defined as stationary walking, walking to bathroom or greater distances with or without the use of an assistive device.
	Velos Field ID	ambulated_today
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	Yes, No
❖	Direct Patient Treatment Time (Minutes)	
	Definition	Clinician time spent providing direct rehabilitation for the patient, including 'set-up' and 'clean-up' for the treatment session and splint fabrication (whether or not the patient was present) If two or more clinicians worked with the same patient, users were instructed to add together both clinicians' time. Wound care was not included unless some of the time spent was actual physical rehabilitation interventions such as range of motion.
	Velos Field ID	treatment_time
	Case Report Form	Daily Log Part 1 of 2
	Type	Number
❖	Non-Billable Patient Time (Minutes)	
	Definition	Non-billable patient time-defined as time spent on the patient's behalf involving the following: documentation, gathering supplies to perform a treatment, telephone calls or other communication and patient-specific time spent in patient meeting or rounds.
	Velos Field ID	nonbillable_time
	Case Report Form	Daily Log Part 1 of 2
	Type	Number
❖	Total Daily Rehab Time (Minutes)	
	Definition	Auto-calculated sum of Direct Patient Treatment Time (Minutes) and Non-Billable Patient Time (Minutes)
	Velos Field ID	rehab_totals
	Case Report Form	Daily Log Part 1 of 2
	Type	Number

DAILY LOG EDEMA CONTROL

❖	Patient ID	
	Definition	A unique patient study ID was created using the format ACT-###-### for each subject at the time of enrollment. This identifier is contained in each spreadsheet and can be used to link data for a specific patient across spreadsheets.
	Velos Field ID	Patient ID, Patient Study ID, Facility ID
	Case Report Form	All
	Type	Text
❖	Date of Treatment	
	Definition	Date of edema control Note: This field is from the CRF Daily Log Part 1 of 2 which was split into 3 spreadsheets (Daily Log General Status, Daily Log Edema control and Daily Log Exposed Bone/Joint) and is contained in those spreadsheets under the same name..
	Velos Field ID	treatment_date
	Case Report Form	Daily Log Part 1 of 2
	Type	Date
❖	Body Area Edema Control	
	Definition	body area site(s) treated with specified edema control practice. Multiple entries based on practice type are possible for the same patient on the same date.
	Velos Field ID	body_edema
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	Head, Right – Upper Extremity, Left – Upper Extremity, Right – Forearm / Hand / Fingers, Left – Forearm / Hand / Fingers, Right – Hand / Fingers, Left – Hand / Fingers, Right – Lower Extremity, Left – Lower Extremity
❖	Edema Control Practice Type	
	Definition	edema control practice intervention on body areas listed above Multiple entries are possible for the same patient on the same date.
	Velos Field ID	edemacontrol_type
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	None, Head of bed elevation, Compression, Suspension, Commercial appliance, Sling, Wedge, Pillow, Orthopedic appliance/set-up, Bedside tables(s), Other
❖	Other Edema Control Practice	
	Definition	If other selected from practice options above, users were instructed to complete this field using free text.
	Velos Field ID	other_practicetype
	Case Report Form	Daily Log Part 1 of 2
	Type	Text

DAILY LOG EXPOSED BONE/JOINT

❖	Patient ID	
	Definition	A unique patient study ID was created using the format ACT-####-#### for each subject at the time of enrollment. This identifier is contained in each spreadsheet and can be used to link data for a specific patient across spreadsheets.
	Velos Field ID	Patient ID, Patient Study ID, Facility ID
	Case Report Form	All
	Type	Text
❖	Date of Treatment	
	Definition	date of data collection Note: This field is from the CRF Daily Log Part 1 of 2 which was split into 3 spreadsheets (Daily Log General Status, Daily Log Edema control and Daily Log Exposed Bone/Joint) and is contained in those spreadsheets under the same name.
	Velos Field ID	treatment_date
	Case Report Form	Daily Log Part 1 of 2
	Type	Date
❖	Exposed Bone/Joint (except hand & fingers)	
	Definition	exposed bone/joint (except hand & fingers) Users were instructed to complete this section each day during the hospitalization that the bone/joint was exposed.
	Velos Field ID	exposed_bone
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	Right posterior elbow/Olecranon, Right forearm, Right wrist/ulnar head, Right knee, Right leg, Right ankle/malleolus, Right foot/toe(s), Left posterior elbow/Olecranon, Left forearm, Left wrist/ulnar head, Left knee, Left leg, Left ankle/malleolus, Left foot/toe(s) Note: Posterior elbow/Olecranon – includes the olecranon, either humeral condyle or shaft of humerus, Forearm – includes both the radius and/or ulna exposure excluding the olecranon process, Wrist/Ulnar head – includes ulnar and radial head and any carpal bones, Knee – includes the patella and/or either condyles of the femur and/or tibia, tibial tuberosity, and fibular head, Leg – involve bone exposure below the area of the knee explained including the anterior crest of the tibia, Ankle/Malleolus – includes either malleoli or any tarsal bone, Foot/Toes – includes metatarsal bones or toe phalanx
❖	Right Hand – Exposed Bone/Joint	
	Definition	identifies which rays (1-5) have exposed bone/joints This field presented as a checkbox (multi-select) on the eCRF. These data are not separated into distinct columns as they function to indicate which rays should contain information in the following fields: (Right Hand – Exposed Bone/Joint – 1 st Ray, Right Hand – Exposed Bone/Joint – 2 nd Ray, Right Hand – Exposed Bone/Joint – 3 rd Ray, Right Hand – Exposed Bone/Joint – 4 th Ray, Right Hand – Exposed Bone/Joint – 5 th Ray).
	Velos Field ID	exp_bone_righthand
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	1st Ray, 2nd Ray, 3rd Ray, 4th Ray, 5th Ray

DAILY LOG EXPOSED BONE/JOINT

❖	Right Hand – Exposed Bone/Joint 1st Ray
Definition	1 st ray right hand – bone exposed anywhere along the combined length of an individual metacarpal and associated phalanges
Velos Field ID	1st_ray_right
Case Report Form	Daily Log Part 1 of 2
Type	Select
Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx

❖	Right Hand – Exposed Bone/Joint 2nd Ray
Definition	2nd ray right hand – bone exposed anywhere along the combined length of an individual metacarpal and associated phalanges
Velos Field ID	2nd_ray_right
Case Report Form	Daily Log Part 1 of 2
Type	Select
Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx

❖	Right Hand – Exposed Bone/Joint 3rd Ray
Definition	3rd ray right hand – bone exposed anywhere along the combined length of an individual metacarpal and associated phalanges
Velos Field ID	3rd_ray_right
Case Report Form	Daily Log Part 1 of 2
Type	Select
Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx

❖	Right Hand – Exposed Bone/Joint 4th Ray
Definition	4th ray right hand – bone exposed anywhere along the combined length of an individual metacarpal and associated phalanges
Velos Field ID	4th_ray_right
Case Report Form	Daily Log Part 1 of 2
Type	Select
Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx

❖	Right Hand – Exposed Bone/Joint 5th Ray
Definition	5 th ray right hand – bone exposed anywhere along the combined length of an individual metacarpal and associated phalanges
Velos Field ID	5th_ray_right
Case Report Form	Daily Log Part 1 of 2
Type	Select
Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx

DAILY LOG EXPOSED BONE/JOINT

❖	Left Hand – Exposed Bone/Joint	
	Definition	identifies which rays (1-5) have exposed bone/joints This field presented as a checkbox (multi-select) on the CRF. These data are not separated into distinct columns as they function to indicate which rays should contain information in the following fields: (Right Hand – Exposed Bone/Joint – 1 st Ray, Right Hand – Exposed Bone/Joint – 2 nd Ray, Right Hand – Exposed Bone/Joint – 3 rd Ray, Right Hand – Exposed Bone/Joint – 4 th Ray, Right Hand – Exposed Bone/Joint – 5 th Ray).
	Velos Field ID	Exp_bone_lefthand
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	1st Ray, 2nd Ray, 3rd Ray, 4th Ray, 5th Ray
❖	Left Hand – Exposed Bone/Joint 1st Ray	
	Definition	1st ray left hand – bone exposed anywhere along the combined length of an individual metacarpal and associated phalanges
	Velos Field ID	1st_ray_left
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx
❖	Left Hand – Exposed Bone/Joint 2nd Ray	
	Definition	2nd ray left hand – bone exposed anywhere along the combined length of an individual metacarpal and associated phalanges
	Velos Field ID	2nd_ray_left
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx
❖	Left Hand – Exposed Bone/Joint 3rd Ray	
	Definition	3rd ray left hand – bone exposed anywhere along the combined length of an individual metacarpal and associated phalanges
	Velos Field ID	3rd_ray_left
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx
❖	Left Hand – Exposed Bone/Joint 4th Ray	
	Definition	4th ray left hand – bone exposed anywhere along the combined length of an individual metacarpal and associated phalanges
	Velos Field ID	4th_ray_left
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx

DAILY LOG EXPOSED BONE/JOINT

❖	Left Hand – Exposed Bone/Joint 5th Ray	
	Definition	5th ray left hand – bone exposed anywhere along the combined length of an individual metacarpal and associated phalanges
	Velos Field ID	5th_ray_left
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx
❖	Exposed Tendon(s) – Except extensors in hand/finger(s) (_1-_5)	
	Definition	exposed tendon(s) (except hand & fingers) This field presented on the eCRF as a checkbox (multi-select) and stored as an array. These data have been divided into separate columns for analysis. Columns are identified as Column Heading followed by an underscore and sequential number. (i.e. Exposed Tendon(s) – Except extensors in hand/finger(s)_1).
	Velos Field ID	exposed_tendons
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	Right Elbow Extensors, Right Elbow Flexors, Right Wrist/Digital Extensors, Right Wrist/Digital Flexors, Right Palmar Digital Extensors, Right Palmar Digital Flexors, Left Elbow Extensors, Left Elbow Flexors, Left Wrist/Digital Extensors, Left Wrist/Digital Flexors, Left Palmar Digital Extensors, Left Palmar Digital Flexors, Right Knee Extensors, Right Knee Flexors, Right Ankle Dorsiflexors, Right Ankle Plantarflexors, Right Toe Extensors, Right Toe Flexors, Left Knee Extensors, Left Knee Flexors, Left Ankle Dorsiflexors, Left Ankle Plantarflexors, Left Toe Extensors, Left Toe Flexors
❖	Right Hand / Finger – Exposed Extensor Tendon(s)	
	Definition	identifies which rays (1-5) of right hand had exposed extensor tendons This field presented as a checkbox (multi-select) on the eCRF. These data are not separated into distinct columns as they function to indicate which rays should contain information in the following fields: (Right Hand / Finger – Exposed Extensor Tendon(s)– 1 st Ray, Right Hand / Finger – Exposed Extensor Tendon(s) – 2 nd Ray, Right Hand / Finger – Exposed Extensor Tendon(s)– 3 rd Ray, Right Hand / Finger – Exposed Extensor Tendon(s)– 4 th Ray, Right Hand / Finger – Exposed Extensor Tendon(s)– 5 th Ray).
	Velos Field ID	exp_tendons_righthand
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	1st Ray, 2nd Ray, 3rd Ray, 4th Ray, 5th Ray
❖	Right Hand / Finger – Exposed Extensor Tendon(s) – 1st Ray	
	Definition	1st ray right hand – tendon exposed anywhere along the combined length of an individual metacarpal and associated phalanges
	Velos Field ID	1st_ray_right_ten
	Case Report Form	Daily Log Part 1 of 2
	Type	Select
	Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx

DAILY LOG EXPOSED BONE/JOINT

❖	Right Hand / Finger – Exposed Extensor Tendon(s) – 2nd Ray
Definition	2nd ray right hand – tendon exposed anywhere along the combined length of an individual metacarpal and associated phalanges
Velos Field ID	2nd_ray_right_ten
Case Report Form	Daily Log Part 1 of 2
Type	Select
Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx
❖	Right Hand / Finger – Exposed Extensor Tendon(s) – 3rd Ray
Definition	3rd ray right hand – tendon exposed anywhere along the combined length of an individual metacarpal and associated phalanges
Velos Field ID	3rd_ray_right_ten
Case Report Form	Daily Log Part 1 of 2
Type	Select
Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx
❖	Right Hand / Finger – Exposed Extensor Tendon(s) – 4th Ray
Definition	4th ray right hand – tendon exposed anywhere along the combined length of an individual metacarpal and associated phalanges
Velos Field ID	4th_ray_right_ten
Case Report Form	Daily Log Part 1 of 2
Type	Select
Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx
❖	Right Hand / Finger – Exposed Extensor Tendon(s) – 5th Ray
Definition	5th ray right hand – tendon exposed anywhere along the combined length of an individual metacarpal and associated phalanges
Velos Field ID	5th_ray_right_ten
Case Report Form	Daily Log Part 1 of 2
Type	Select
Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx
❖	Left Hand / Finger – Exposed Extensor Tendon(s)
Definition	identifies which rays (1-5) of left hand that had exposed extensor tendons This field presented as a checkbox (multi-select) on the eCRF. These data are not separated into distinct columns as they function to indicate which rays should contain information in the following fields: (Left Hand / Finger – Exposed Extensor Tendon(s)– 1 st Ray, Left Hand / Finger – Exposed Extensor Tendon(s) – 2 nd Ray, left Hand / Finger – Exposed Extensor Tendon(s)– 3 rd Ray, Left Hand / Finger – Exposed Extensor Tendon(s)– 4 th Ray, Left Hand / Finger – Exposed Extensor Tendon(s)– 5 th Ray).
Velos Field ID	exp_tendons_lefthand
Case Report Form	Daily Log Part 1 of 2
Type	Select
Options	1st Ray, 2nd Ray, 3rd Ray, 4th Ray, 5th Ray

DAILY LOG EXPOSED BONE/JOINT

❖	Left Hand / Finger – Exposed Extensor Tendon(s) – 1st Ray
Definition	1st ray left hand – tendon exposed anywhere along the combined length of an individual metacarpal and associated phalanges
Velos Field ID	1st_ray_left_ten
Case Report Form	Daily Log Part 1 of 2
Type	Select
Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx

❖	Left Hand / Finger – Exposed Extensor Tendon(s) – 2nd Ray
Definition	2nd ray left hand – tendon exposed anywhere along the combined length of an individual metacarpal and associated phalanges
Velos Field ID	2nd_ray_left_ten
Case Report Form	Daily Log Part 1 of 2
Type	Select
Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx

❖	Left Hand / Finger – Exposed Extensor Tendon(s) – 3rd Ray
Definition	3rd ray left hand – tendon exposed anywhere along the combined length of an individual metacarpal and associated phalanges
Velos Field ID	3rd_ray_left_ten
Case Report Form	Daily Log Part 1 of 2
Type	Select
Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx

❖	Left Hand / Finger – Exposed Extensor Tendon(s) – 4th Ray
Definition	4th ray left hand – tendon exposed anywhere along the combined length of an individual metacarpal and associated phalanges
Velos Field ID	4th_ray_left_ten
Case Report Form	Daily Log Part 1 of 2
Type	Select
Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx

❖	Left Hand / Finger – Exposed Extensor Tendon(s) – 5th Ray
Definition	5th ray left hand – tendon exposed anywhere along the combined length of an individual metacarpal and associated phalanges
Velos Field ID	5th_ray_left_ten
Case Report Form	Daily Log Part 1 of 2
Type	Select
Options	Metacarpal, Metacarpal Phalangeal Joint, Proximal Phalanx, Interphalangeal Joint, Distal Phalanx

DAILY LOG SPLINTING/POSITIONING

❖	Patient ID	
	Definition	A unique patient study ID was created using the format ACT-###-### for each subject at the time of enrollment. This identifier is contained in each spreadsheet and can be used to link data for a specific patient across spreadsheets.
	Velos Field ID	Patient ID, Patient Study ID, Facility ID
	Case Report Form	All
	Type	Text
❖	Date of Treatment	
	Definition	Date of splinting/positioning intervention
	Velos Field ID	treatment_date
	Case Report Form	Daily Log Part 2 of 2
	Type	Date
❖	Body Area splint/position	
	Definition	body area treated with splinting/positioning intervention
	Velos Field ID	body_treated
	Case Report Form	Daily Log Part 2 of 2
	Type	Select
	Options	Mouth, Neck, Right Anterior Axilla, Right Posterior Axilla, Left Anterior Axilla, Left Posterior Axilla, Right Anterior Elbow, Right Posterior Elbow, Left Anterior Elbow, Left Posterior Elbow, Right Anterior Forearm, Left Anterior Forearm, Right Wrist Dorsal, Left Wrist Dorsal, Right Wrist/hand/finger/thumb dorsal, Left Wrist/hand/finger/thumb dorsal, Right Wrist Volar, Left Wrist Volar, Right Wrist/hand/finger/thumb volar, Left Wrist/hand/finger/thumb volar, Right Wrist/hand/finger/thumb combo, Left Wrist/hand/finger/thumb combo, Right Hand Digit Combo-Dorsal, Left Hand Digit Combo-Dorsal, Right Hand Digit Combo-Volar, Left Hand Digit Combo-Volar, Right Index Finger Dorsum, Left Index Finger Dorsum, Right Middle Finger Dorsum, Left Middle Finger Dorsum, Right Ring Finger Dorsum, Left Ring Finger Dorsum, Right Small Finger Dorsum, Left Small Finger Dorsum, Right Index Finger Volar, Left Index Finger Volar, Right Middle Finger Volar, Left Middle Finger Volar, Right Ring Finger Volar, Left Ring Finger Volar, Right Small Finger Volar, Left Small Finger Volar, Right Thumb Dorsal, Left Thumb Dorsal, Right Thumb Volar, Left Thumb Volar, Right Thumb Web Dorsal, Left Thumb Web Dorsal, Right Thumb Web Volar, Left Thumb Web Volar, Right Posterior Hip (Buttock), Right Anterior Hip (Inguinal), Right Medial Thigh, Left Posterior Hip (Buttock), Left Anterior Hip (Inguinal), Left Medial Thigh, Right Anterior Knee, Right Posterior Knee, Left Anterior Knee, Left Posterior Knee, Right Posterior Ankle, Right Anterior Ankle, Left Posterior Ankle, Left Anterior Ankle, Right Dorsal Foot / Toes, Right Plantar Foot / Toes, Left Dorsal Foot / Toes, Left Plantar Foot / Toes

DAILY LOG SPLINTING/POSITIONING

❖	Intervention	
	Definition	type of splinting/positioning intervention
	Velos Field ID	intervention_1
	Case Report Form	Daily Log Part 2 of 2
	Type	Select
	Options	Positioned, Splinted, Positioned & Splinted, K-Wire, Bulky Dressing, Neg Pressure Dressing, Casted, Other Intervention
❖	Other Intervention	
	Definition	If other selected from 'Intervention' field, users were instructed to complete this field using free text.
	Velos Field ID	other_intervention
	Case Report Form	Daily Log Part 2 of 2
	Type	Text
❖	Intervention Direction	
	Definition	anti-contracture direction of the above intervention
	Velos Field ID	intervention_direction
	Case Report Form	Daily Log Part 2 of 2
	Type	Select
	Options	Wrist extension - MCP ext-IP flx w/ thumb mid- position, Wrist neutral - MCP flx-IP ext w/ radial abduction, Wrist neutral - MCP flx-IP flx w/ radial abduction, Wrist neutral - MCP ext-IP ext w/ radial abduction, Wrist neutral - MCP ext-IP flx w/ radial abduction, Wrist neutral - MCP flx-IP ext w/ palmar abduction, Wrist neutral - MCP flx-IP flx w/ palmar abduction, Wrist neutral - MCP ext-IP ext w/ palmar abduction, Wrist neutral - MCP ext-IP flx w/ palmar abduction, Wrist neutral - MCP flx-IP ext w/ thumb mid- position, Wrist neutral - MCP flx-IP flx w/ thumb mid- position, Wrist neutral - MCP ext-IP ext w/ thumb mid- position, Wrist neutral - MCP ext-IP flx w/ thumb mid- position, MCP flx, MCP ext, PIP flx, PIP ext, DIP flx, DIP ext, MCP flx & IP flx, MCP flx & IP ext, MCP ext & IP flx, PIP flx & DIP flx, PIP ext & DIP ext, PIP ext & DIP flx, PIP flx & DIP ext, Radial Abduction, Palmar Abduction, MCP ext & IP ext, Abduction, Plantarflexion, Dorsiflexion, Not Applicable
❖	Time Splinted/Positioned Per Session (Minutes)	
	Definition	time in minutes that patient underwent the above splinting/positioning intervention each Note: Excludes splinting/positioning when the primary intent is skin graft protection after surgery. Excludes edema reduction unless used for both contracture prevention and/or treatment AND edema reduction. Users were instructed to enter each time a patient returned to a prescribed anti-contracture position or placed in a splint to prevent or treat a burn scar throughout the day and night as a separate entry.
	Velos Field ID	time_splinted
	Case Report Form	Daily Log Part 2 of 2
	Type	Number

DAILY LOG SPLINTING/POSITIONING



Reason For Discontinuation

Definition	Reason splinting/positioning treatment discontinued
Velos Field ID	reason_discontinuation
Case Report Form	Daily Log Part 2 of 2
Type	Select
Options	End of Prescribed Time, Pain, Meal / Feeding, Dressing Change / Wound Care, Physician Order, Rehab Intervention, Patient/Family Request, Walking, Out of Bed Activity, Fitting Issue, Access Line, Other Reason

DISCHARGE OUTCOMES

❖	Patient ID	
	Definition	A unique patient study ID was created using the format ACT-###-### for each subject at the time of enrollment. This identifier is contained in each spreadsheet and can be used to link data for a specific patient across spreadsheets.
	Velos Field ID	Patient ID, Patient Study ID, Facility ID
	Case Report Form	All
	Type	Text
❖	Date of Discharge	
	Definition	Date of discharge Note: may be date of discharge from the acute care hospital or date a patient is discharged from an in-hospital step-down of rehabilitation
	Velos Field ID	date_discharge
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Date
❖	Discharge Weight (kg)	
	Definition	Measured weight at the time of discharge • Within 1 week for 30 day LOS • Within 2 weeks if >30 LOS Note: '13' indicates that no accurate weight measurement obtainable/available at the time of discharge.
	Velos Field ID	weight_discharge
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number
❖	Pain Tolerance - (Therapist Opinion)	
	Definition	Primary burn rehabilitation therapist's determination of patient pain tolerance during overall hospital course • Excellent – patient stoic, rarely allowed pain issues to interfere with rehabilitation treatments. Use of pain medicine as prescribed or limited to as needed. • Good – participated in rehabilitation treatments despite pain issues the majority of the time; few pain complaints which interfered with treatments. Use of pain medication as prescribed. • Fair – needed to constantly convince patient to work through pain issues; "good days, bad days;" always utilizing pain medicine as eligible; frequent requests for additional pain medication. • Poor – patient complained of pain most of the time; pain complaints interfered with performance of rehabilitation treatments on a consistent basis; pain complaints prevented rehabilitation frequently.
	Velos Field ID	pain_tolerance
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	Excellent, Good, Fair, Poor

DISCHARGE OUTCOMES

❖	Rehabilitation Compliance - (Therapist Opinion)	
	Definition	Primary therapist's viewpoint based on the patient's overall hospital course. • Excellent – Patient cooperative with rehabilitation treatments an estimated > 85% of time. • Good – Patient cooperative with rehabilitation treatments an estimated > 70% but < 85% of time. • Fair – Patient cooperative with rehabilitation treatments an estimated > 50% but < 70% of time. • Poor - Patient cooperative with rehabilitation treatments < 50% of time
	Velos Field ID	patient_compliance
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	Excellent, Good, Fair, Poor
❖	Heterotopic Ossification Development	
	Definition	Development of HO during hospitalization
	Velos Field ID	heterotopic_ossification
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	yes, no
❖	Heterotopic Ossification Body Area	
	Definition	Area(s) where heterotopic ossification was identified
	Velos Field ID	body_locationhet
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	Shoulder (Right), Elbow (Right), Forearm (Right), Wrist (Right), Fingers (Right), Hip (Right), Knee (Right), Ankle (Right), Shoulder (Left), Elbow (Left), Forearm (Left), Wrist (Left), Fingers (Left), Hip (Left), Knee (Left), Ankle (Left), Spine, Other
❖	Other Heterotopic Ossification Location	
	Definition	Free text description if 'Other' Area(s) entered in "Heterotopic Ossification Body Area" field.
	Velos Field ID	other_location
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Text
❖	How Heterotopic Ossification Development Diagnosed	
	Definition	HO diagnosis methods-may include more than one method.
	Velos Field ID	how_diagnosedhet
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	X-Ray, MRI, Bone Scan, CT Scan, Clinical Assessment
❖	Neuropathy	
	Definition	Neuropathy developed during hospitalization
	Velos Field ID	neuropathy_1
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	None, Mononeuropathy, Polyneuropathy

DISCHARGE OUTCOMES

❖	Neuropathy Type	
	Definition	Type of Neuropathy-may include both
	Velos Field ID	neuropathy_type
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	Sensory, Motor
❖	How Neuropathy Diagnosed	
	Definition	Neuropathy diagnosis methods-may include both
	Velos Field ID	how_neuro_diagnosed
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	EMG\NCS, Clinical Assessment
❖	Nerve(s) Involved	
	Definition	Nerve(s) involved in neuropathy-multiple selections may be included Note: Includes only Motor involvement due to the variability in sensory nerve disturbances
	Velos Field ID	nerve_involved
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	Brachial Plexus- Right (Mono Only), Radial- Right, Ulnar- Right, Median- Right, Peroneal- Right, Tibial- Right, Brachial Plexus- Left (Mono Only), Radial- Left, Ulnar- Left, Median- Left, Peroneal- Left, Tibial- Left, Other
❖	Other Nerve(s) Involved	
	Definition	Free text description if 'Other' Area(s) entered in "Nerve(s) Involved" field
	Velos Field ID	other_nerve
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Text
❖	VTE Prophylaxis (_1-_4)	
	Definition	Initial venous thromboembolic prophylaxis treatment regimen Note: Checkbox array distributed to separate columns identified by column header followed by an underscore and sequential number 1-4.
	Velos Field ID	vtproph_treatment
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	None, Unfractionated Heparin (units), SCD, Fondaparinux (mg), IVC Filter, Lovenox (mg), Other Medication
❖	Other VTE Prophylaxis	
	Definition	Free text description if 'Other Medication' Area(s) entered in "Venous Thromboembolic Prophylaxis" field.
	Velos Field ID	other_proph
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Text

DISCHARGE OUTCOMES

❖	VTE Prophylaxis Dosage	
	Definition	dosage amount
	Velos Field ID	dosage_1
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number
❖	VTE Prophylaxis Dosage Frequency	
	Definition	dosage frequency
	Velos Field ID	med_frequency
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	QD, BID, TID, Other
❖	Other VTE Prophylaxis Dosage Frequency	
	Definition	Free text description if 'Other' entered in "Venous Thromboembolic Prophylaxis Dosage Frequency" field
	Velos Field ID	other_frequency
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Text
❖	VTE Event	
	Definition	Type of VTE Event
	Velos Field ID	venous_thromboembolic
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	None, DVT, PE, PE/DVT
❖	DVT Location(s)	
	Definition	general location of DVT
	Velos Field ID	dvt_location
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	Right - Upper Extremity, Left - Upper Extremity, Right - Lower Extremity, Left - Lower Extremity, Other
❖	Other DVT Location	
	Definition	Free text description if 'Other' entered in "DVT Location(s)" field
	Velos Field ID	other_dvtlocation
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Text
❖	How VTE Diagnosed	
	Definition	method of diagnosis Note: single entry allowed-users were instructed to select the most "exacting" method
	Velos Field ID	how_diagnosedven
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	CT Scan, VQ Scan, Ultrasound, Venogram, Pulmonary Angiogram, Clinical Assessment

DISCHARGE OUTCOMES

❖	Anabolic agent administered	
	Definition	Anabolic agent administered during hospitalization
	Velos Field ID	anabolic_agent
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	Yes, No
❖	Anabolic Agent (_1-_3)	
	Definition	Anabolic agent Note: Checkbox array distributed to separate columns identified by column header followed by an underscore and sequential number 1-3.
	Velos Field ID	specific_agent
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	Oxandrolone, Growth Hormone, Propranolol, Insulin, Other
❖	Other Anabolic agent(s)	
	Definition	Free text description if 'Other' entered in "Anabolic Agent" field
	Velos Field ID	other_anabolic
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Text
❖	Hand Strength - Grip (Right) Attempt 1	
	Definition	Right hand grip strength measured in pounds (Jamar Dynamometer)-1 st attempt
	Velos Field ID	gripstrength_right1
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number
❖	Hand Strength - Grip (Left) Attempt 1	
	Definition	Left hand grip strength measured in pounds (Jamar Dynamometer)-1 st attempt
	Velos Field ID	gripstrength_left1
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number
❖	Hand Strength - Lateral Pinch (Right) Attempt 1	
	Definition	Right hand lateral pinch measured in pounds (Jamar Dynamometer)-1 st attempt
	Velos Field ID	lateralpinch_right1
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number
❖	Hand Strength - Lateral Pinch (Left) Attempt 1	
	Definition	Left hand lateral pinch measured in pounds (Jamar Dynamometer)-1 st attempt
	Velos Field ID	lateralpinch_left1
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number

DISCHARGE OUTCOMES

❖	Hand Strength - Grip (Right) Attempt 2 Definition Right hand grip strength measured in pounds (Jamar Dynamometer)- 2 nd attempt Velos Field ID gripstrength_right2 Case Report Form Discharge Data - Part 1 of 3 Type Number
❖	Hand Strength - Grip (Left) Attempt 2 Definition Left hand grip strength measured in pounds (Jamar Dynamometer)- 2 nd attempt Velos Field ID gripstrength_left2 Case Report Form Discharge Data - Part 1 of 3 Type Number
❖	Hand Strength - Lateral Pinch (Right) Attempt 2 Definition Right hand lateral pinch measured in pounds (Jamar Dynamometer)-2 nd attempt Velos Field ID lateralpinch_right2 Case Report Form Discharge Data - Part 1 of 3 Type Number
❖	Hand Strength - Lateral Pinch (Left) Attempt 2 Definition Left hand lateral pinch measured in pounds (Jamar Dynamometer)-2 nd attempt Velos Field ID lateralpinch_left2 Case Report Form Discharge Data - Part 1 of 3 Type Number
❖	Hand Strength - Grip (Right) Attempt 3 Definition Right hand grip strength measured in pounds (Jamar Dynamometer)-3 rd attempt Velos Field ID gripstrength_right3 Case Report Form Discharge Data - Part 1 of 3 Type Number
❖	Hand Strength - Grip (Left) Attempt 3 Definition Left hand grip strength measured in pounds (Jamar Dynamometer)-3 rd attempt Velos Field ID gripstrength_left3 Case Report Form Discharge Data - Part 1 of 3 Type Number
❖	Hand Strength - Lateral Pinch (Right) Attempt 3 Definition Right hand lateral pinch measured in pounds (Jamar Dynamometer)-3 rd attempt Velos Field ID lateralpinch_right3 Case Report Form Discharge Data - Part 1 of 3 Type Number
❖	Hand Strength - Lateral Pinch (Left) Attempt 3 Definition Left hand lateral pinch measured in pounds (Jamar Dynamometer)-3 rd attempt Velos Field ID lateralpinch_left3 Case Report Form Discharge Data - Part 1 of 3 Type Number

DISCHARGE OUTCOMES

❖	LE Strength - (Right Quadricep) Attempt 1	
	Definition	Right quadriceps strength measured in Newton Meters-1 st attempt Note: data collected only by facilities with Baltimore Therapeutic Equipment (BTE)-inputted from BTE graph. Both affected and non-affected lower extremities tested.
	Velos Field ID	lowerstrength_rightquad1
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number
❖	LE Strength - (Right Hamstring) Attempt 1	
	Definition	Right hamstring strength measured in Newton Meters-1 st attempt Note: data collected only by facilities with Baltimore Therapeutic Equipment (BTE)-inputted from BTE graph. Both affected and non-affected lower extremities tested.
	Velos Field ID	lowerstrength_righthamstring1
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number
❖	LE Strength - (Left Quadricep) Attempt 1	
	Definition	Left quadriceps strength measured in Newton Meters-1 st attempt Note: data collected only by facilities with Baltimore Therapeutic Equipment (BTE)-inputted from BTE graph. Both affected and non-affected lower extremities tested.
	Velos Field ID	lowerstrength_leftquad1
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number
❖	LE Strength - (Left Hamstring) Attempt 1	
	Definition	Left hamstring strength measured in Newton Meters-1 st attempt Note: data collected only by facilities with Baltimore Therapeutic Equipment (BTE)-inputted from BTE graph. Both affected and non-affected lower extremities tested.
	Velos Field ID	lowerstrength_lefthamstring1
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number
❖	LE Strength - (Right Quadricep) Attempt 2	
	Definition	Right quadriceps strength measured in Newton Meters-2 nd attempt Note: data collected only by facilities with Baltimore Therapeutic Equipment (BTE)-inputted from BTE graph. Both affected and non-affected lower extremities tested.
	Velos Field ID	lowerstrength_rightquad2
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number
❖	LE Strength - (Right Hamstring) Attempt 2	
	Definition	Right hamstring strength measured in Newton Meters-2 nd attempt Note: data collected only by facilities with Baltimore Therapeutic Equipment (BTE)-inputted from BTE graph. Both affected and non-affected lower extremities tested.
	Velos Field ID	lowerstrength_righthamstring2
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number

DISCHARGE OUTCOMES

❖	LE Strength - (Left Quadricep) Attempt 2	
	Definition	Left quadriceps strength measured in Newton Meters-2 nd attempt Note: data collected only by facilities with Baltimore Therapeutic Equipment (BTE)-inputted from BTE graph. Both affected and non-affected lower extremities tested.
	Velos Field ID	lowerstrength_leftquad2
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number
❖	LE Strength - (Left Hamstring) Attempt 2	
	Definition	Left hamstring strength measured in Newton Meters-2 nd attempt Note: data collected only by facilities with Baltimore Therapeutic Equipment (BTE)-inputted from BTE graph. Both affected and non-affected lower extremities tested.
	Velos Field ID	lowerstrength_lefthamstring2
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number
❖	LE Strength - (Right Quadricep) Attempt 3	
	Definition	Right quadriceps strength measured in Newton Meters-3 rd attempt Note: data collected only by facilities with Baltimore Therapeutic Equipment (BTE)-inputted from BTE graph. Both affected and non-affected lower extremities tested.
	Velos Field ID	lowerstrength_rightquad3
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number
❖	LE Strength - (Right Hamstring) Attempt 3	
	Definition	Right hamstring strength measured in Newton Meters-3 rd attempt Note: data collected only by facilities with Baltimore Therapeutic Equipment (BTE)-inputted from BTE graph. Both affected and non-affected lower extremities tested.
	Velos Field ID	lowerstrength_righthamstring3
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number
❖	LE Strength - (Left Quadricep) Attempt 3	
	Definition	left quadriceps strength measured in Newton Meters-3 rd attempt Note: data collected only by facilities with Baltimore Therapeutic Equipment (BTE)-inputted from BTE graph. Both affected and non-affected lower extremities tested.
	Velos Field ID	lowerstrength_leftquad3
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number
❖	LE Strength - (Left Hamstring) Attempt 3	
	Definition	Left hamstring strength measured in Newton Meters-3 rd attempt Note: data collected only by facilities with Baltimore Therapeutic Equipment (BTE)-inputted from BTE graph. Both affected and non-affected lower extremities tested.
	Velos Field ID	lowerstrength_lefthamstring3
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Number

DISCHARGE OUTCOMES

❖	Facial Contractures (_1-_8)	
	Definition	Facial contractures as indicated by SAGE Program Note: Checkbox array distributed to separate columns identified by column header followed by an underscore and sequential number 1-8.
	Velos Field ID	unique_contractures
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	None, Eye Medial Canthus – Right, Eye Lateral Canthus – Right, Lower Eyelid Ectropion – Right, Mouth Commissure – Right, Lower Lip Eversion, Eye Medial Canthus – Left, Eye Lateral Canthus – Left, Lower Eyelid Ectropion – Left, Mouth Commissure - Left
❖	Breast Contractures (female only)	
	Definition	Breast contractures (female only) as indicated by SAGE program • Right and/or Left Inframammary Crease contracture-breast tissue is adherent to thorax and non-displaceable • Synmastia-both breasts are contracted/joined together across the cleavage crease
	Velos Field ID	breast_contracture
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	Not Applicable, None, Right - Inframammary Crease, Left - Inframammary Crease, Synmastia
❖	Hand/Finger Contractures (_1-_4)	
	Definition	Specific Hand/Finger Contractures or Deformity Contractures • Swan neck deformity – hyperextension of the PIP joint with concomitant flexion of the DIP joint • Mallet finger deformity – flexion of the DIP joint • Boutonniere deformity – flexion of the PIP joint with concomitant hyperextension of the DIP joint • Thumb MCP hyperextension deformity – hyperextension angle between the proximal phalanx of the thumb and the metacarpal bone • Claw hand deformity – hyperextension of the MCP joints with concomitant flexion of the PIP and possible DIP joints • Benediction hand deformity – involvement of the ring and small fingers displaying MCP extension with concomitant PIP and possible DIP joint flexion • Ape hand deformity – median nerve loss with inability to oppose thumb or palmarly abduct thumb • Palmar cupping deformity – scar tissue banding between the thenar and hypothenar eminences leading to a narrowing of the hand width and possible accentuation of the longitudinal palmar crease • 5th finger deformity – fixed flexion of one or more of the phalangeal joints with concomitant torsion toward the palm. May be mild to severe. Note: Checkbox array distributed to separate columns identified by column header followed by an underscore and sequential number 1-4.
	Velos Field ID	unique_contractures
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select

DISCHARGE OUTCOMES

❖	Hand/Finger Contractures (_1-_4)	
	Options	Swan Neck Deformity - Index Right, Swan Neck Deformity - Middle Right, Swan Neck Deformity - Ring Right, Swan Neck Deformity - Small Right, Swan Neck Deformity - Index Left, Swan Neck Deformity - Middle Left, Swan Neck Deformity - Ring Left, Swan Neck Deformity - Small Left, Mallet Finger Deformity - Index Right, Mallet Finger Deformity - Middle Right, Mallet Finger Deformity - Ring Right, Mallet Finger Deformity - Small Right, Mallet Finger Deformity - Index Left, Mallet Finger Deformity - Middle Left, Mallet Finger Deformity - Ring Left, Mallet Finger Deformity - Small Left, Boutonniere Deformity - Index Right, Boutonniere Deformity - Middle Right, Boutonniere Deformity - Ring Right, Boutonniere Deformity - Small Right, Boutonniere Deformity - Index Left, Boutonniere Deformity - Middle Left, Boutonniere Deformity - Ring Left, Boutonniere Deformity - Small Left, Thumb MCP Hyperextension Right, Thumb MCP Hyperextension Left, Thumb IP Hyperextension Right, Thumb IP Hyperextension Left, Claw Hand Deformity – Right, Claw Hand Deformity – Left, Benediction Hand – Right, Benediction Hand – Left, Ape Hand – Right, Ape Hand – Left, Palm Cupping Deformity – Right, Palm Cupping Deformity – Left, 5th Finger Deformity – Right, 5th Finger Deformity – Left, None, Not Applicable
❖	Toe Contractures (_1-_10)	
	Definition	Specific toe contractures Note: Checkbox array distributed to separate columns identified by column header followed by an underscore and sequential number 1-10.
	Velos Field ID	bodyarea_toes
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select
	Options	Great toe extension – Right, Great toe extension – Left, Great toe flexion – Right, Great toe flexion – Left, 2nd toe extension – Right, 2nd toe extension – Left, 2nd toe flexion – Right, 2nd toe flexion – Left, 3rd toe extension – Right, 3rd toe extension – Left, 3rd toe flexion – Right, 3rd toe flexion – Left, 4th toe extension – Right, 4th toe extension – Left, 4th toe flexion – Right, 4th toe flexion – Left, 5th toe extension – Right, 5th toe extension – Left, 5th toe flexion – Right, 5th toe flexion – Left, None, Not Applicable
❖	Amputation Location(s) (_1-_10)	
	Definition	Amputation level(s) If the exact level was not available, users were instructed to select the option closest to the actual amputation level i.e. the level that removes the next distal joint(s). Note: Checkbox array distributed to separate columns identified by column header followed by an underscore and sequential number 1-10.
	Velos Field ID	amputation_location1
	Case Report Form	Discharge Data - Part 1 of 3
	Type	Select

DISCHARGE OUTCOMES

❖	Amputation Location(s) (_1_10)	
	Options	Right Shoulder Disarticulation, Right Above Elbow, Right Below Elbow, Right Wrist Disarticulation, Left Shoulder Disarticulation, Left Above Elbow, Left Below Elbow, Left Wrist Disarticulation, Right Index Terminal Tip, Right Middle Terminal Tip, Right Ring Terminal Tip, Right Small Terminal Tip, Left Index Terminal Tip, Left Middle Terminal Tip, Left Ring Terminal Tip, Left Small Terminal Tip, Right Index Distal Interphalangeal, Right Middle Distal Interphalangeal, Right Ring Distal Interphalangeal, Right Small Distal Interphalangeal, Left Index Distal Interphalangeal, Left Middle Distal Interphalangeal, Left Ring Distal Interphalangeal, Left Small Distal Interphalangeal, Right Index Proximal Interphalangeal, Right Middle Proximal Interphalangeal, Right Ring Proximal Interphalangeal, Right Small Proximal Interphalangeal, Left Index Proximal Interphalangeal, Left Middle Proximal Interphalangeal, Left Ring Proximal Interphalangeal, Left Small Proximal Interphalangeal, Right Index Metacarpo-phalangeal, Right Middle Metacarpo-phalangeal, Right Ring Metacarpo-phalangeal, Right Small Metacarpo-phalangeal, Left Index Metacarpo-phalangeal, Left Middle Metacarpo-phalangeal, Left Ring Metacarpo-phalangeal, Left Small Metacarpo-phalangeal, Right Thumb Terminal Tip, Right Thumb Interphalangeal, Right Thumb Metacarpo-phalangeal, Right Thumb 1st Ray, Left Thumb Terminal Tip, Left Thumb Interphalangeal, Left Thumb Metacarpophalangeal, Left Thumb 1st Ray, Right Partial Hand, Left Partial Hand, Right Hip Disarticulation, Right Above Knee, Right Below Knee, Right Ankle Disarticulation, Left Hip Disarticulation, Left Above Knee, Left Below Knee, Left Ankle Disarticulation, Right Partial-Foot, Right Great Toe Metatarsophalangeal, Right Great Toe Interphalangeal, Right Great Toe Tip, Left Partial-Foot, Left Great Toe Metatarsophalangeal, Left Great Toe Interphalangeal, Left Great Toe Tip, Right 2nd Toe Partial, Right 3rd Toe Partial, Right 4th Toe Partial, Right 5th Toe Partial, Right 2nd Toe Complete, Right 3rd Toe Complete, Right 4th Toe Complete, Right 5th Toe Complete, Left 2nd Toe Partial, Left 3rd Toe Partial, Left 4th Toe Partial, Left 5th Toe Partial, Left 2nd Toe Complete, Left 3rd Toe Complete, Left 4th Toe Complete, Left 5th Toe Complete, None

DISCHARGE ROM (EXCEPT HAND)

❖	Patient ID	
	Definition	A unique patient study ID was created using the format ACT-####-#### for each subject at the time of enrollment. This identifier is contained in each spreadsheet and can be used to link data for a specific patient across spreadsheets.
	Velos Field ID	Patient ID, Patient Study ID, Facility ID
	Case Report Form	All
	Type	Text
	Options	
❖	Area/Movement Affected (Except Hand)	
	Definition	Area/Movement of ROM (except hand) measurement using standard goniometer or Inclinometer
	Velos Field ID	body_rom
	Case Report Form	Discharge Part 2 of 3
	Type	Select
	Options	Mouth opening (vertical in mm), Neck flexion, Neck extension, Neck rotation - Right, Neck lateral flexion - Right, Shoulder abduction - Right, Shoulder flexion - Right, Shoulder external rotation - Right, Elbow extension - Right, Elbow flexion - Right, Forearm supination - Right, Wrist extension - Right, Wrist flexion - Right, Hip extension - Right, Hip flexion - Right, Hip abduction - Right, Knee extension-Right, Knee flexion - Right, Ankle dorsiflexion - Right, Ankle plantarflexion - Right, Neck rotation - Left, Neck lateral flexion - Left, Shoulder abduction - Left, Shoulder flexion - Left, Shoulder external rotation - Left, Elbow extension - Left, Elbow flexion - Left, Forearm supination - Left, Wrist extension - Left, Wrist flexion - Left, Hip extension - Left, Hip flexion - Left, Hip abduction - Left, Knee extension - Left, Knee flexion - Left, Ankle dorsiflexion - Left, Ankle plantarflexion – Left NOTE: Removed sequencing numbers from Discharge Data Part 2, column Body Area / Movement Affected
❖	Passive ROM (Except Hand)	
	Definition	ROM measurement Note: mouth measured in millimeters) Field in text format to accommodate negative number values
	Velos Field ID	range_measurement
	Case Report Form	Discharge Part 2 of 3
	Type	Text
❖	ROM Contributing Conditions (Except Hand) (_1-_5)	
	Definition	Comorbid condition(s) contributing to ROM deficit. Checkbox array distributed to separate columns identified by column header followed by an underscore and sequential number
	Velos Field ID	rom_comorbid
	Case Report Form	Discharge Part 2 of 3
	Type	Select
	Options	None, Scar Tissue, Other Soft Tissue, Pain, Edema, Open Wound, Joint Deformity, Joint Fusion, Fracture, Tendon Rupture, Muscle Weakness, Heterotopic Ossification, Peripheral Neuropathy, Arthritis, Spasticity, Pre-Burn Physical Condition, Other, Unable To Test

DISCHARGE ROM HAND

❖	Patient ID	
	Definition	A unique patient study ID was created using the format ACT-###-### for each subject at the time of enrollment. This identifier is contained in each spreadsheet and can be used to link data for a specific patient across spreadsheets.
	Velos Field ID	Patient ID, Patient Study ID, Facility ID
	Case Report Form	All
	Type	Text
❖	Area/Movement Affected ROM Hand	
	Definition	Area/Movement of ROM of hand/fingers measurement using standard goniometer or Inclinator
	Velos Field ID	hands_rom
	Case Report Form	Discharge 3 of 3
	Type	Select
	Options	See Appendix 4 for list of options
❖	Passive ROM Hand	
	Definition	ROM measurement of hand/fingers Note: Field in text format to accommodate negative number values
	Velos Field ID	rom_3
	Case Report Form	Discharge 3 of 3
	Type	Text
❖	ROM Contributing Conditions Hand (-1-_4)	
	Definition	Comorbid condition contributing to ROM deficit of hand/fingers Note: Checkbox array distributed to separate columns identified by column header followed by an underscore and sequential number
	Velos Field ID	contrib_comorbid_hand
	Case Report Form	Discharge 3 of 3
	Type	Select
	Options	None, Scar Tissue, Other Soft Tissue, Pain, Edema, Open Wound, Joint Deformity, Joint Fusion, Fracture, Tendon Rupture, Muscle Weakness, Heterotopic Ossification, Peripheral Neuropathy, Arthritis, Spasticity, Pre-Burn Physical Condition, Other, Unable To Test

SAGE TOTAL BURN

❖	Patient ID	
	Definition	A unique patient study ID was created using the format ACT-###-### for each subject at the time of enrollment. This identifier is contained in each spreadsheet and can be used to link data for a specific patient across spreadsheets.
	SAGE Field ID	cfuPtId
	Case Report Form	All
	Type	Text
❖	Age (SAGE)	
	Definition	Age at the time of acute burn admission Age was entered into Admission eCRF (Admission Demographics) and the SAGE diagram (SAGE Total Burn)
	SAGE Field ID	pt_age
	Case Report Form	SAGE Diagram
	Type	Number
❖	SAGE Total Partial Thickness	
	Definition	total area of partial thickness burn autogenerated by SAGE Diagram Users were instructed to update throughout the hospitalization and enter this value into the Admission eCRF.
	SAGE Field ID	pct_partial
	Case Report Form	SAGE Diagram
	Type	Number
❖	SAGE Total Full Thickness	
	Definition	total area of full thickness burn autogenerated by SAGE Diagram Users were instructed to update throughout the hospitalization and enter this value into the Admission eCRF.
	SAGE Field ID	pct_deep
	Case Report Form	SAGE Diagram
	Type	Number

SAGE TOTAL BURN

❖	SAGE Total grafted	
	Definition	total area grafted autogenerated by SAGE Diagram Users were instructed to update throughout the hospitalization and enter this value into the Admission eCRF.
	SAGE Field ID	pct_grafted
	Case Report Form	SAGE Diagram
	Type	Number
❖	SAGE Total donor	
	Definition	total donor sites autogenerated by SAGE Diagram Users were instructed to update throughout the hospitalization and enter this value into the Admission eCRF.
	SAGE Field ID	pct_donor
	Case Report Form	SAGE Diagram
	Type	Number
❖	SAGE Total TBSA Burn	
	Definition	total percent burn TBSA autogenerated by SAGE Diagram Users were instructed to update throughout the hospitalization and enter this value into the Admission eCRF.
	SAGE Field ID	pct_tbsa
	Case Report Form	SAGE Diagram
	Type	Number
❖	SAGE Total Amputation	
	Definition	total amputations autogenerated by SAGE Diagram Users were instructed to update throughout the hospitalization and enter this value into the Admission eCRF.
	Velos Field ID	pct_ampu
	Case Report Form	SAGE Diagram
	Type	Number

SAGE PERCENT BODY AREA

❖	Patient ID	
	Definition	A unique patient study ID was created using the format ACT-###-### for each subject at the time of enrollment. This identifier is contained in each spreadsheet and can be used to link data for a specific patient across spreadsheets.
	SAGE Field ID	cfuPtId
	Case Report Form	All
	Type	Text
❖	Burn Area ID	
	Definition	burn area ID number assigned by SAGE program Burn area ID and description key attached as Appendix 6
	SAGE Field ID	brn_id
	Case Report Form	Sage Diagram
	Type	Number
❖	Burn Area Description	
	Definition	Body area linked to above ID by SAGE program Burn area ID and description key attached as Appendix 6
	SAGE Field ID	brn_id_desc
	Case Report Form	SAGE Diagram
	Type	Auto-generated by SAGE program
❖	SAGE by Burn Area TBSA	
	Definition	percent burn by specific body areas (total of partial-thickness, full-thickness, and grafted)
	SAGE Field ID	brn_tbsa
	Case Report Form	SAGE Diagram
	Type	Number
❖	SAGE by Burn Area Partial Thickness	
	Definition	Percent partial-thickness burn by specific body areas
	SAGE Field ID	brn_partial
	Case Report Form	SAGE Diagram
	Type	Number
❖	SAGE by Burn Area Full Thickness	
	Definition	Percent full-thickness burn by specific body areas
	SAGE Field ID	brn_deep
	Case Report Form	SAGE Diagram
	Type	Number

SAGE PERCENT BODY AREA



SAGE by Burn Area Grafted

Definition	Percent grafted by specific body areas
SAGE Field ID	brn_grafted
Case Report Form	SAGE Diagram
Type	Number



SAGE by Body Area Donor Sites

Definition	Percent donor site by body areas
SAGE Field ID	brn_donor
Case Report Form	SAGE Diagram
Type	Number



SAGE by Body Area Amputation

Definition	Demarcation of amputations by percent body area
SAGE Field ID	brn_amputate
Case Report Form	SAGE Diagram
Type	Number

SAGE CFU

❖	Patient ID	
	Definition	A unique patient study ID was created using the format ACT-###-### for each subject at the time of enrollment. This identifier is contained in each spreadsheet and can be used to link data for a specific patient across spreadsheets.
	SAGE Field ID	cfuPtId
	Case Report Form	All
	Type	Text
❖	SAGE Body Area CFU	
	Definition	CFU segment numerical id Adapted from Richard R, Jones JA, Parshley P. Hierarchical Decomposition of Burn Body Diagram Based on cutaneous Functional Units and Its Utility J Burn Care Res 2015 36: (1):33-43 CFU Body Location Reference Chart attached as Appendix 7
	SAGE Field ID	cfu_id
	Case Report Form	SAGE Diagram
	Type	Number
❖	SAGE CFU TBSA	
	Definition	total percent burn by CFU segments (total of partial-thickness, full-thickness, and grafted)
	SAGE Field ID	Cfu_tbsa
	Case Report Form	SAGE Diagram
	Type	Number
❖	SAGE CFU Partial Thickness	
	Definition	Percent-partial thickness burn by CFU segments
	SAGE Field ID	cfu_partial
	Case Report Form	SAGE Diagram
	Type	Number
❖	SAGE CFU Full Thickness	
	Definition	Percent full-thickness burn by CFU segments
	SAGE Field ID	cfu_deep
	Case Report Form	SAGE Diagram
	Type	Number
❖	SAGE CFU Grafted	
	Definition	Percent grafted by CFU segments
	SAGE Field ID	cfu_grafted
	Case Report Form	Sage Diagram
	Type	Number

SAGE CFU



SAGE CFU Donor

Definition	Percent donor sites by CFU segments
SAGE Field ID	cfu_donor
Case Report Form	SAGE Diagram
Type	Number



SAGE CFU Amputation

Definition	Percent amputation by CFU segments
SAGE Field ID	cfu_amputate
Case Report Form	SAGE Diagram
Type	Number

APPENDIX 1

ACT Study Synopsis

TITLE	Burn Patient Acuity Demographics, Scar Contractures and Rehabilitation Treatment Time Related to Patient Outcomes (ACT)
OBJECTIVES	Create database of information associated with burn injury and the development of burn scar contractures in patients: • To determine the association of time spent in rehabilitation and patient outcome • To ascertain how much time patients spend in rehabilitation compared to their acuity • To relate patient acuity to burn scar contracture development • To establish minimal time requirements for various rehabilitation patients outcomes • To determine the influence of clinical parameters such as percent total body burn, skin grafted areas, development of heterotopic ossification and peripheral neuropathy on patient outcomes • To globally relate patient treatment interventions to the prevention of burn scar contractures
DESIGN	This was a multicenter, observational, non-interventional, descriptive project designed to collect standard of care rehabilitation treatment practices and factors that may affect or contribute to the formation of burn scar contracture. Data was collected at three primary time points: 1) admission, 2) during acute hospitalization, and 3) at the time of discharge from the acute care setting. Information gathered during acute hospitalization was collected daily to include physical rehabilitation interventions utilized with time recorded for each intervention. Total time of each intervention and aggregate time on a daily and hospital course basis was used in the analysis related to scar contracture prevention or development at involved anatomic sites.
POPULATION	Adult patients who were admitted to a burn treatment facility with a cutaneous burn injury
ENROLLMENT	A total of 386 subjects were enrolled in the study, forty four (44) of those subjects were later excluded due to eligibility/consent criteria. This final dataset includes three hundred and forty two (342) subjects.
DURATION OF PARTICIPATION	Subjects were enrolled into the study at the time of admission and participated throughout their acute hospitalization.
INCLUSION CRITERIA	• Primary diagnosis of a cutaneous burn injury • Age range: 18 years or older • Patients with equal to or greater than 5 days length of hospitalization
EXCLUSION CRITERIA	• less than 18 years old • Inhalation injury without cutaneous burn • Non-burn injury diagnosis • High or low voltage electrical burn injury • Patients with less than or equal to a 4 day hospitalization • Patients with 2% or less deep partial thickness burn except a hand burn which may be less than 2% deep partial thickness. • Patients with non-survivable burn as determined by the attending burn surgeon

APPENDIX 2
ACT STUDY PARTICIPATING SITES

Site	Location	Site PI
*US Army Institute of Surgical Research	Fort Sam Houston, TX	**Reginald Richard, MS, PT
Arizona Burn Center Maricopa Integrated Health System	Phoenix, AZ	Michael Peck, MD
Loyola University Medical Center	Maywood, IL	Richard Gamelli, MD
NY Presbyterian Weill Cornell Medical Center	New York, NY	Delia Gorga, PhD, OTR/L
Oregon Burn Center Legacy Emanuel Hospital	Portland, OR	Nathan Kemalyan, MD
Regions Hospital Burn Center	St. Paul, MN	Beth Franzen, OTR/L
St Elizabeth Regional Medical Center	Lincoln, NE	David Voigt, MD
St Joseph Regional Burn Center Lutheran Health Network	Fort Wayne, IN	Paul Young, PT
University of California Davis Medical Center	Sacramento, CA	Tina Palmieri, MD
University of California Irvine	Orange, CA	Jennifer Kemp-Offenberg, BS, OTR/L
University of Iowa Hospitals and Clinics	Iowa City, IA	Melinda Shetler, BS, OT
University of North Carolina Jaycee Burn Center	Chapel Hill, NC	Bruce Cairns, MD
University of Utah Intermountain Burn Center	Salt Lake City, UT	Stephen Morris, MD
Via Christi Regional Burn Center	Wichita, KS	Sarah Fischer, RN

* Lead Site

** Study PI

APPENDIX 3

Case Report Forms

Note: The following are “snapshots” of study CRFs. Sections with repeating identical data entry options (for more than two pages) are condensed.

Admission Data

Section 1

Signature _____		Date _____	
Data Entry Date	02/10/2015	Date of Burn	_____
		Date of Admission (BTF)	_____
		Age	_____
Height (Centimeters)	_____	Weight Before Injury (Kg)	_____
		Hand Dominance	☐ Right ☐ Left ☐ Ambidextrous ☐ Unknown ☐ To Be Determined
Cause of Burn	☐ Flame ☐ Hot Gas	☐ Chemical ☐ Radiation	☐ Hot Liquid ☐ Friction ☐ Tar/Grease/Oil ☐ Contact
Education Level	☐ Did Not Graduate High School ☐ College Graduate	☐ High School Graduate ☐ Advanced Degree	☐ Some College ☐ Unknown
Learning Impairment	☐ Yes ☐ No ☐ Not Documented	☐ Yes ☐ No ☐ Not Documented	☐ Yes ☐ No ☐ Unknown
	Psych Problems (Previous)	Current ETOH / Drug Abuse	Positive Toxicology Screen?
Pre-Existing Physical Condition	☐ None ☐ Visual impairment ☐ Paraplegia ☐ Other	☐ Contracture / Limitation of Motion ☐ Closed Head Injury ☐ Quadriplegia ☐ Unknown	☐ Rotator cuff ☐ Peripheral Neuropathy ☐ Multiple sclerosis ☐ Guillian-Barre
		☐ Rheumatoid Arthritis ☐ Right Hemiparesis/plegia ☐ Left Hemiparesis/plegia ☐ Amyotrophic lateral sclerosis	
If Other, Please Explain	_____		
Pre-Existing Medical Conditions	☐ None ☐ Renal Insufficiency ☐ Pulmonary Diagnosis	☐ Diabetes ☐ Hepatitis ☐ Dementia	☐ Lupus ☐ HIV/AIDS ☐ Other
		☐ Circulatory Disorder ☐ Cancer ☐ Unknown	☐ Hypertension ☐ Seizure History
If Other, Please Explain	_____		
Concomitant Medical Problems	☐ None ☐ Quadriplegia ☐ Vascular Damage	☐ Fracture(s) ☐ Soft Tissue Injury ☐ Pulmonary Injury	☐ Traumatic Brain Injury ☐ Vision Problem ☐ Seizure Activity
		☐ Amputation ☐ Hearing Problem ☐ Other	☐ Paraplegia ☐ Internal Organ Problem ☐ Unknown
If Other Concomitant,	_____		

Body Area -
Fracture Site

☐ Cervical	☐ Thoracic	☐ Lumbar	☐ Pelvis
☐ Right arm	☐ Right forearm	☐ Right wrist	☐ Right hand
☐ Left arm	☐ Left forearm	☐ Left wrist	☐ Left hand
☐ Right index finger	☐ Right middle finger	☐ Right ring finger	☐ Right small finger
☐ Left index finger	☐ Left middle finger	☐ Left ring finger	☐ Left small finger
☐ Right thumb	☐ Blank1- Do Not Check	☐ Blank2- Do Not Check	☐ Blank3- Do Not Check
☐ Left thumb	☐ Blank4- Do Not Check	☐ Blank5- Do Not Check	☐ Blank6- Do Not Check
☐ Right thigh	☐ Right leg	☐ Right foot	☐ Right toe(s)
☐ Left thigh	☐ Left leg	☐ Left foot	☐ Left toe(s)

Body Area - Soft
Tissue Damage

☐ Right Shoulder	☐ Left Shoulder	☐ Right Anterior Arm	☐ Left Anterior Arm	☐ Right Posterior Arm	☐ Left Posterior Arm
☐ Right Elbow	☐ Left Elbow	☐ Right Anterior Forearm	☐ Left Anterior Forearm	☐ Right Posterior Forearm	☐ Left Posterior Forearm
☐ Right Anterior Wrist	☐ Left Anterior Wrist	☐ Right Posterior Wrist	☐ Left Posterior Wrist	☐ Right Dorsal Hand	☐ Left Dorsal Hand
☐ Right Palmar Hand	☐ Left Palmar Hand	☐ Right Dorsal Fingers	☐ Left Dorsal Fingers	☐ Right Palmar Fingers	☐ Left Palmar Fingers
☐ Right Buttock	☐ Left Buttock	☐ Right Anterior Thigh	☐ Left Anterior Thigh	☐ Right Posterior Thigh	☐ Left Posterior Thigh
☐ Right Knee	☐ Left Knee	☐ Right Anterior Leg	☐ Left Anterior Leg	☐ Right Posterior Leg	☐ Left Posterior Leg
☐ Right Ankle	☐ Left Ankle	☐ Right Dorsal Foot	☐ Left Dorsal Foot	☐ Right Plantar Foot	☐ Left Plantar Foot

Body Area -
Vascular Damage

☐ Right arm	☐ Right forearm	☐ Right hand/finger(s)	☐ Right thigh	☐ Right leg	☐ Right foot/toes
☐ Left arm	☐ Left forearm	☐ Left hand/finger(s)	☐ Left thigh	☐ Left leg	☐ Left foot/toes

Inhalation Injury

☐ None
 ☐ Mild
 ☐ Moderate
 ☐ Severe
 ☐ Undeterminable

Escharotomy / Fasciotomy

Date of Procedure

Escharotomy /
Fasciotomy

Body Location(s)

_____	☐ Escharotomy	☐ Arm (Right)	☐ Forearm (Right)	☐ Hand (Right)	☐ Finger (s)- (Right)	☐ Thigh (Right)	☐ Leg (Right)	☐ Foot (Right)
	☐ Fasciotomy	☐ Arm (Left)	☐ Forearm (Left)	☐ Hand (Left)	☐ Finger (s)- (Left)	☐ Thigh (Left)	☐ Leg (Left)	☐ Foot (Left)
		☐ Thorax						
_____	☐ Escharotomy	☐ Arm (Right)	☐ Forearm (Right)	☐ Hand (Right)	☐ Finger (s)- (Right)	☐ Thigh (Right)	☐ Leg (Right)	☐ Foot (Right)
	☐ Fasciotomy	☐ Arm (Left)	☐ Forearm (Left)	☐ Hand (Left)	☐ Finger (s)- (Left)	☐ Thigh (Left)	☐ Leg (Left)	☐ Foot (Left)
		☐ Thorax						
_____	☐ Escharotomy	☐ Arm (Right)	☐ Forearm (Right)	☐ Hand (Right)	☐ Finger (s)- (Right)	☐ Thigh (Right)	☐ Leg (Right)	☐ Foot (Right)
	☐ Fasciotomy	☐ Arm (Left)	☐ Forearm (Left)	☐ Hand (Left)	☐ Finger (s)- (Left)	☐ Thigh (Left)	☐ Leg (Left)	☐ Foot (Left)
		☐ Thorax						

	☐ Escharotomy	☐ Arm (Right)	☐ Forearm (Right)	☐ Hand (Right)	☐ Finger (s)- (Right)	☐ Thigh (Right)	☐ Leg (Right)	☐ Foot (Right)
	☐ Fasciotomy	☐ Arm (Left)	☐ Forearm (Left)	☐ Hand (Left)	☐ Finger (s)- (Left)	☐ Thigh (Left)	☐ Leg (Left)	☐ Foot (Left)
		☐ Thorax						
	☐ Escharotomy	☐ Arm (Right)	☐ Forearm (Right)	☐ Hand (Right)	☐ Finger (s)- (Right)	☐ Thigh (Right)	☐ Leg (Right)	☐ Foot (Right)
	☐ Fasciotomy	☐ Arm (Left)	☐ Forearm (Left)	☐ Hand (Left)	☐ Finger (s)- (Left)	☐ Thigh (Left)	☐ Leg (Left)	☐ Foot (Left)
		☐ Thorax						
	☐ Escharotomy	☐ Arm (Right)	☐ Forearm (Right)	☐ Hand (Right)	☐ Finger (s)- (Right)	☐ Thigh (Right)	☐ Leg (Right)	☐ Foot (Right)
	☐ Fasciotomy	☐ Arm (Left)	☐ Forearm (Left)	☐ Hand (Left)	☐ Finger (s)- (Left)	☐ Thigh (Left)	☐ Leg (Left)	☐ Foot (Left)
		☐ Thorax						
	☐ Escharotomy	☐ Arm (Right)	☐ Forearm (Right)	☐ Hand (Right)	☐ Finger (s)- (Right)	☐ Thigh (Right)	☐ Leg (Right)	☐ Foot (Right)
	☐ Fasciotomy	☐ Arm (Left)	☐ Forearm (Left)	☐ Hand (Left)	☐ Finger (s)- (Left)	☐ Thigh (Left)	☐ Leg (Left)	☐ Foot (Left)
		☐ Thorax						
	☐ Escharotomy	☐ Arm (Right)	☐ Forearm (Right)	☐ Hand (Right)	☐ Finger (s)- (Right)	☐ Thigh (Right)	☐ Leg (Right)	☐ Foot (Right)
	☐ Fasciotomy	☐ Arm (Left)	☐ Forearm (Left)	☐ Hand (Left)	☐ Finger (s)- (Left)	☐ Thigh (Left)	☐ Leg (Left)	☐ Foot (Left)
		☐ Thorax						
	☐ Escharotomy	☐ Arm (Right)	☐ Forearm (Right)	☐ Hand (Right)	☐ Finger (s)- (Right)	☐ Thigh (Right)	☐ Leg (Right)	☐ Foot (Right)
	☐ Fasciotomy	☐ Arm (Left)	☐ Forearm (Left)	☐ Hand (Left)	☐ Finger (s)- (Left)	☐ Thigh (Left)	☐ Leg (Left)	☐ Foot (Left)
		☐ Thorax						

SAGE Diagram Instructions

1- Click On the Following Link:

<https://burn.ucdmc.ucdavis.edu>

2- Enter SAGE User Name and SAGE Password provided via automated SAGE email to you.

3- Enter Patient ID - (Same as ID in this database.)

4- Draw SAGE Diagram and save results.

TBSA Burn (Enter All Values From SAGE)

Superficial Partial Thickness		Deep Partial Thickness		Skin Grafted		Percent TBSA	
-------------------------------------	-------	---------------------------	-------	--------------	-------	-----------------	-------

Note - The Final Percent TBSA entered must equal the TBSA of the Final SAGE Diagram submitted.

Skin Graft Information

Section 1

Signature_____

Date _____

Data Entry Date 02/10/2015

Sage Diagram Instructions

- 1- Click On the Following Link:

<https://burn.ucdmc.ucdavis.edu>

- 2- Enter SAGE User Name and SAGE Password provided via automated SAGE email to you.

- ### 3- Select Previously Created Patient Diagram

- #### 4- Revise SAGE Diagram to Reflect Updated Skin Graft Information

- ### 5- Save Results And Print Burn TBSA Information

- [6- Return To Admissions Form and Update TBSA Information](#)

Skin Graft Information

[illegible]

Daily Log Part 1 of 2

Data Entry Date 02/10/2015

Date of Treatment _____

Level Of
Consciousness

☐ Comatose /
Chemically Paralyzed

☐ Stupor / Obtunded

☐ Lethargic

☐ Conscious

Was the patient in
intensive care today?

☐ Yes

☐ No

Was the patient on a
ventilator today?

☐ Yes

☐ No

Was the patient on
bedrest today?

☐ Yes

☐ No

Was the patient out of
bed today?

☐ Yes

☐ No

Was the patient
ambulated today?

☐ Yes

☐ No

Edema Control (If Applicable)

Body Area

Edema Control Practice Type

If other, explain

Daily Observation

Exposed
Bone/Joint
(except hand &
fingers)

☐ Right
posterior
elbow/Olecranon

☐ Right
forearm

☐ Right
wrist /
ulnar head

☐ Right
knee

☐ Right
leg

☐ Right
ankle/malleolus

☐ Right
foot/toe(s)

☐ Left posterior
elbow/Olecranon

☐ Left
forearm

☐ Left
wrist /
ulnar head

☐ Left
knee

☐ Left
leg

☐ Left
ankle/malleolus

☐ Left
foot/toe(s)

Right Hand -
Exposed
Bone/Joint

☐ 1st Ray

☐ 2nd Ray

☐ 3rd Ray

☐ 4th Ray

☐ 5th Ray

Right Hand -
Exposed
Bone/Joint – 1st
Ray

☐ Metacarpal

☐ Metacarpal
Phalangeal Joint

☐ Proximal
Phalanx

☐ Interphalangeal
Joint

☐ Distal Phalanx

Right Hand -
Exposed

☐ Metacarpal

☐ Proximal

☐ Proximal

☐ Middle

☐ Distal

☐ Distal

Bone/Joint ? 2nd Ray	☐ Metacarpal	Phalangeal Joint	Phalanx	Interphalangeal Joint	Phalanx	Interphalangeal Joint	Phalanx
Right Hand - Exposed Bone/Joint ? 3rd Ray	☐ Metacarpal	☐ Metacarpal Phalangeal Joint	☐ Proximal Phalanx	☐ Proximal Interphalangeal Joint	☐ Middle Phalanx	☐ Distal Interphalangeal Joint	☐ Distal Phalanx
Right Hand - Exposed Bone/Joint ? 4th Ray	☐ Metacarpal	☐ Metacarpal Phalangeal Joint	☐ Proximal Phalanx	☐ Proximal Interphalangeal Joint	☐ Middle Phalanx	☐ Distal Interphalangeal Joint	☐ Distal Phalanx
Right Hand - Exposed Bone/Joint ? 5th Ray	☐ Metacarpal	☐ Metacarpal Phalangeal Joint	☐ Proximal Phalanx	☐ Proximal Interphalangeal Joint	☐ Middle Phalanx	☐ Distal Interphalangeal Joint	☐ Distal Phalanx
Left Hand - Exposed Bone/Joint	☐ 1st Ray	☐ 2nd Ray	☐ 3rd Ray	☐ 4th Ray	☐ 5th Ray		
Left Hand - Exposed Bone/Joint – 1st Ray	☐ Metacarpal	☐ Metacarpal Phalangeal Joint	☐ Proximal Phalanx	☐ Interphalangeal Joint	☐ Distal Phalanx		
Left Hand - Exposed Bone/Joint ? 2nd Ray	☐ Metacarpal	☐ Metacarpal Phalangeal Joint	☐ Proximal Phalanx	☐ Proximal Interphalangeal Joint	☐ Middle Phalanx	☐ Distal Interphalangeal Joint	☐ Distal Phalanx
Left Hand - Exposed Bone/Joint ? 3rd Ray	☐ Metacarpal	☐ Metacarpal Phalangeal Joint	☐ Proximal Phalanx	☐ Proximal Interphalangeal Joint	☐ Middle Phalanx	☐ Distal Interphalangeal Joint	☐ Distal Phalanx
Left Hand - Exposed Bone/Joint ? 4th Ray	☐ Metacarpal	☐ Metacarpal Phalangeal Joint	☐ Proximal Phalanx	☐ Proximal Interphalangeal Joint	☐ Middle Phalanx	☐ Distal Interphalangeal Joint	☐ Distal Phalanx
Left Hand - Exposed Bone/Joint ? 5th Ray	☐ Metacarpal	☐ Metacarpal Phalangeal Joint	☐ Proximal Phalanx	☐ Proximal Interphalangeal Joint	☐ Middle Phalanx	☐ Distal Interphalangeal Joint	☐ Distal Phalanx

Exposed Tendon
(s) - Except
extensors in
hand / finger(s)

☐ Right Elbow Extensors	☐ Right Elbow Flexors	☐ Right Wrist/Digital Extensors	☐ Right Wrist/Digital Flexors	☐ Right Palmar Digital Flexors	☐ Blank1 (Do Not Check Box)
☐ Left Elbow Extensors	☐ Left Elbow Flexors	☐ Left Wrist/Digital Extensors	☐ Left Wrist/Digital Flexors	☐ Left Palmar Digital Flexors	☐ Blank2 (Do Not Check Box)
☐ Right Knee Extensors	☐ Right Knee Flexors	☐ Right Ankle Dorsiflexors	☐ Right Ankle Plantarflexors	☐ Right Toe Extensors	☐ Right Toe Flexors
☐ Left Knee Extensors	☐ Left Knee Flexors	☐ Left Ankle Dorsiflexors	☐ Left Ankle Plantarflexors	☐ Left Toe Extensors	☐ Left Toe Flexors

Right Hand /
Finger - Exposed
Extensor Tendon
(s)

☐ 1st Ray

☐ 2nd Ray

☐ 3rd Ray

☐ 4th Ray

☐ 5th Ray

Right Hand -
Exposed Extensor
Tendon(s) ? 1st
Ray

☐ Metacarpal

☐ Metacarpal
Phalangeal Joint

☐ Proximal
Phalanx

☐ Interphalangeal
Joint

☐ Distal Phalanx

Right Hand -
Exposed
Extensor

☐ Metacarpal

☐ Metacarpal
Phalangeal

☐ Proximal

☐ Proximal
Interphalangeal

☐ Middle

☐ Distal
Interphalangeal

☐ Distal

Tendon(s) ?
2nd Ray

Joint

Phalanx

Joint

Phalanx

Joint

Phalanx

Right Hand -
Exposed
Extensor
Tendon(s) ?
3rd Ray

☐ Metacarpal

☐ Metacarpal
Phalangeal
Joint

☐ Proximal
Phalanx

☐ Proximal
Interphalangeal
Joint

☐ Middle
Phalanx

☐ Distal
Interphalangeal
Joint

☐ Distal
Phalanx

Right Hand -
Exposed
Extensor
Tendon(s) ?
4th Ray

☐ Metacarpal

☐ Metacarpal
Phalangeal
Joint

☐ Proximal
Phalanx

☐ Proximal
Interphalangeal
Joint

☐ Middle
Phalanx

☐ Distal
Interphalangeal
Joint

☐ Distal
Phalanx

Right Hand -
Exposed
Extensor
Tendon(s)?
5th Ray

☐ Metacarpal

☐ Metacarpal
Phalangeal
Joint

☐ Proximal
Phalanx

☐ Proximal
Interphalangeal
Joint

☐ Middle
Phalanx

☐ Distal
Interphalangeal
Joint

☐ Distal
Phalanx

Left Hand / Finger
- Exposed
Extensor Tendon
(s)

☐ 1st Ray

☐ 2nd Ray

☐ 3rd Ray

☐ 4th Ray

☐ 5th Ray

Left Hand -
Exposed Extensor
Tendon(s) - 1st
Ray

☐ Metacarpal

☐ Metacarpal
Phalangeal Joint

☐ Proximal
Phalanx

☐ Interphalangeal
Joint

☐ Distal Phalanx

Left Hand -
Exposed
Extensor
Tendon(s) ?
2nd Ray

☐ Metacarpal

☐ Metacarpal
Phalangeal
Joint

☐ Proximal
Phalanx

☐ Proximal
Interphalangeal
Joint

☐ Middle
Phalanx

☐ Distal
Interphalangeal
Joint

☐ Distal
Phalanx

Left Hand -
Exposed
Extensor
Tendon(s) ?
3rd Ray

☐ Metacarpal

☐ Metacarpal
Phalangeal
Joint

☐ Proximal
Phalanx

☐ Proximal
Interphalangeal
Joint

☐ Middle
Phalanx

☐ Distal
Interphalangeal
Joint

☐ Distal
Phalanx

Left Hand -
Exposed
Extensor
Tendon(s) ?
4th Ray

☐ Metacarpal

☐ Metacarpal
Phalangeal
Joint

☐ Proximal
Phalanx

☐ Proximal
Interphalangeal
Joint

☐ Middle
Phalanx

☐ Distal
Interphalangeal
Joint

☐ Distal
Phalanx

Left Hand -
Exposed
Extensor
Tendon(s) ?
5th Ray

☐ Metacarpal

☐ Metacarpal
Phalangeal
Joint

☐ Proximal
Phalanx

☐ Proximal
Interphalangeal
Joint

☐ Middle
Phalanx

☐ Distal
Interphalangeal
Joint

☐ Distal
Phalanx

Direct Patient
Treatment Time
(Minutes)

Non-Billable
Patient Time
(Minutes)

Total Daily Rehab
Time (Minutes) -
CALCULATION

Daily Log Part 1 of 2

Daily General Information

Signature_____ Date_____

Data Entry Date 02/10/2015

Date of Treatment _____

Splint / Positioning Time Log

[illegible]

Discharge Part 1 of 3

Data Entry Date 02/10/2015

Date of Discharge _____

Patient Discharge Information

Weight (kg)	_____	Pain Tolerance - (Therapist Opinion)	☐ Excellent ☐ Good ☐ Fair ☐ Poor	Rehabilitation Compliance - (Therapist Opinion)	☐ Excellent ☐ Good ☐ Fair ☐ Poor
Heterotopic Ossification Development	☐ Yes ☐ No	Body Area	☐ Shoulder (Right) ☐ Elbow (Right) ☐ Forearm (Right) ☐ Wrist (Right) ☐ Fingers (Right) ☐ Hip (Right) ☐ Knee (Right) ☐ Ankle (Right) ☐ Shoulder (Left) ☐ Elbow (Left) ☐ Forearm (Left) ☐ Wrist (Left) ☐ Fingers (Left) ☐ Hip (Left) ☐ Knee (Left) ☐ Ankle (Left) ☐ Spine ☐ Other		
Other Location	_____				
How Diagnosed	☐ X-Ray ☐ MRI ☐ Bone Scan ☐ CT Scan ☐ Clinical Assessment				
Neuropathy	☐ None ☐ Mononeuropathy ☐ Polyneuropathy	Type	☐ Sensory ☐ Motor	How Diagnosed	☐ EMG/NCs ☐ Clinical Assessment
Nerve(s) Involved	☐ Brachial Plexus-Right (Mono Only) ☐ Brachial Plexus-Left (Mono Only) ☐ Other	☐ Radial- Right ☐ Ulnar- Right ☐ Median- Right ☐ Peroneal- Right ☐ Tibial- Right ☐ Radial- Left ☐ Ulnar- Left ☐ Median- Left ☐ Peroneal- Left ☐ Tibial- Left			
Other	_____				
Venous Thromboembolic Prophylaxis	☐ None ☐ SCD ☐ IVC Filter ☐ Blank (Do Not Use)	☐ Unfractionated Heparin (units) ☐ Fondaparinux (mg) ☐ Lovenox (mg) ☐ Other Medication	Other _____	Dosage _____	Frequency _____
					☐ QD ☐ BID ☐ TID ☐ Other
Venous Thromboembolic Event	☐ None ☐ DVT ☐ PE ☐ PE/DVT	Location(s) - If DVT Selected	☐ Right - Upper Extremity ☐ Left - Upper Extremity ☐ Right - Lower Extremity ☐ Left - Lower Extremity ☐ Other	Other DVT Location	_____
How Diagnosed	☐ CT Scan ☐ VQ Scan ☐ Ultrasound ☐ Venogram ☐ Pulmonary Angiogram ☐ Clinical Assessment				
Anabolic agent administered to the patient during hospitalization?	☐ Yes ☐ No	If Yes, Which One(s)?	☐ Oxandrolone ☐ Growth Hormone ☐ Propranolol ☐ Insulin ☐ Other	If Other, List	_____

Hand Strength Measurements

If patient is unable to perform, enter 0 (Zero) in appropriate categories.

Attempt #1 Hand Strength - _____ Hand Strength - _____ Hand Strength - Lateral Pinch _____ Hand Strength - Lateral Pinch (Left) _____

	Grip (Right) (lbs)		Grip (Left) (lbs)		(Right) (lbs)		(lbs)
Attempt #2	Hand Strength - Grip (Right) (lbs)	_____	Hand Strength - Grip (Left) (lbs)	_____	Hand Strength - Lateral Pinch (Right) (lbs)	_____	Hand Strength - Lateral Pinch (Left) (lbs)
Attempt #3	Hand Strength - Grip (Right) (lbs)	_____	Hand Strength - Grip (Left) (lbs)	_____	Hand Strength - Lateral Pinch (Right) (lbs)	_____	Hand Strength - Lateral Pinch (Left) (lbs)

Lower Extremity Strength Measurements

(Only Facilities With BTE)

Attempt #1	Lower Extremity Strength - (Right Quadricep)	_____	Lower Extremity Strength - (Right Hamstring)	_____	Lower Extremity Strength - (Left Quadricep)	_____	Lower Extremity Strength - (Left Hamstring)
Attempt #2	Lower Extremity Strength - (Right Quadricep)	_____	Lower Extremity Strength - (Right Hamstring)	_____	Lower Extremity Strength - (Left Quadricep)	_____	Lower Extremity Strength - (Left Hamstring)
Attempt #3	Lower Extremity Strength - (Right Quadricep)	_____	Lower Extremity Strength - (Right Hamstring)	_____	Lower Extremity Strength - (Left Quadricep)	_____	Lower Extremity Strength - (Left Hamstring)

Facial Contractures

Check for facial contractures only if indicated by the SAGE Diagram Program, accessed by clicking on the following link:

<https://burn.ucdmc.ucdavis.edu>

Contractures (Select Applicable Sites)	☐ None	☐ Eye Medial Canthus - Right	☐ Eye Lateral Canthus - Right	☐ Lower Eyelid Ectropion - Right	☐ Mouth Commissure - Right
	☐ Lower Lip Eversion	☐ Eye Medial Canthus - Left	☐ Eye Lateral Canthus - Left	☐ Lower Eyelid Ectropion - Left	☐ Mouth Commissure - Left

Breast Contractures - Female Only

Check for breast contractures only if indicated by the SAGE Diagram Program, accessed by clicking on the following link:

<https://burn.ucdmc.ucdavis.edu>

Contracture Site	☐ Not Applicable	☐ None	☐ Right - Inframammary Crease	☐ Left - Inframammary Crease	☐ Synmastia
------------------	---	-------------------------------	--	---	------------------------------------

Specific Hand/Finger Contracture Or Deformity

Contractures (Select Applicable Sites)	☐ Swan Neck Deformity - Index Right	☐ Swan Neck Deformity - Middle Right	☐ Swan Neck Deformity - Ring Right	☐ Swan Neck Deformity - Small Right	☐ Swan Neck Deformity - Index Left	☐ Swan Neck Deformity - Middle Left	☐ Swan Neck Deformity - Ring Left	☐ Swan Neck Deformity - Small Left
	☐ Mallet Finger Deformity - Index Right	☐ Mallet Finger Deformity - Middle Right	☐ Mallet Finger Deformity - Ring Right	☐ Mallet Finger Deformity - Small Right	☐ Mallet Finger Deformity - Index Left	☐ Mallet Finger Deformity - Middle Left	☐ Mallet Finger Deformity - Ring Left	☐ Mallet Finger Deformity - Small Left
	☐ Boutonniere Deformity - Index Right	☐ Boutonniere Deformity - Middle Right	☐ Boutonniere Deformity - Ring Right	☐ Boutonniere Deformity - Small Right	☐ Boutonniere Deformity - Index Left	☐ Boutonniere Deformity - Middle Left	☐ Boutonniere Deformity - Ring Left	☐ Boutonniere Deformity - Small Left
	☐ Thumb MCP Hyperextension Right	☐ Thumb MCP Hyperextension Left	☐ Thumb IP Hyperextension Right	☐ Thumb IP Hyperextension Left	☐ Claw Hand Deformity - Right	☐ Claw Hand Deformity - Left	☐ Benediction Hand - Right	☐ Benediction Hand - Left
	☐ Ape Hand - Right	☐ Ape Hand - Left	☐ Palm Cupping Deformity - Right	☐ Palm Cupping Deformity - Left	☐ 5th Finger Deformity ? Right	☐ 5th Finger Deformity ? Left	☐ None	☐ Not Applicable

Specific Toe Contractures

Select All Toe Areas With Contractures

Body Area - Toes	☐ Great toe extension - Right	☐ Great toe extension - Left	☐ Great toe flexion - Right	☐ Great toe flexion - Left
	☐ 2nd toe extension - Right	☐ 2nd toe extension - Left	☐ 2nd toe flexion - Right	☐ 2nd toe flexion - Left
	☐ 3rd toe extension - Right	☐ 3rd toe extension - Left	☐ 3rd toe flexion - Right	☐ 3rd toe flexion - Left
	☐ 4th toe extension - Right	☐ 4th toe extension - Left	☐ 4th toe flexion - Right	☐ 4th toe flexion - Left
	☐ 5th toe extension - Right	☐ 5th toe extension - Left	☐ 5th toe flexion - Right	☐ 5th toe flexion - Left
	☐ None	☐ Not Applicable		

Amputation(s)

☐ Right Shoulder Disarticulation	☐ Right Above Elbow	☐ Right Below Elbow	☐ Right Wrist Disarticulation	☐ Left Shoulder Disarticulation	☐ Left Above Elbow	☐ Left Below Elbow	☐ Left Wrist Disarticulation
☐ Right Index Terminal Tip	☐ Right Middle Terminal Tip	☐ Right Ring Terminal Tip	☐ Right Small Terminal Tip	☐ Left Index Terminal Tip	☐ Left Middle Terminal Tip	☐ Left Ring Terminal Tip	☐ Left Small Terminal Tip
☐ Right Index Distal Interphalangeal	☐ Right Middle Distal Interphalangeal	☐ Right Ring Distal Interphalangeal	☐ Right Small Distal Interphalangeal	☐ Left Index Distal Interphalangeal	☐ Left Middle Distal Interphalangeal	☐ Left Ring Distal Interphalangeal	☐ Left Small Distal Interphalangeal
☐ Right Index Proximal Interphalangeal	☐ Right Middle Proximal Interphalangeal	☐ Right Ring Proximal Interphalangeal	☐ Right Small Proximal Interphalangeal	☐ Left Index Proximal Interphalangeal	☐ Left Middle Proximal Interphalangeal	☐ Left Ring Proximal Interphalangeal	☐ Left Small Proximal Interphalangeal
☐ Right Index Metacarpophalangeal	☐ Right Middle Metacarpophalangeal	☐ Right Ring Metacarpophalangeal	☐ Right Small Metacarpophalangeal	☐ Left Index Metacarpophalangeal	☐ Left Middle Metacarpophalangeal	☐ Left Ring Metacarpophalangeal	☐ Left Small Metacarpophalangeal

Amputation Location
(S)

☐ Right Thumb Terminal Tip	☐ Right Thumb Interphalangeal	☐ Right Thumb Metacarpophalangeal	☐ Right Thumb 1st Ray	☐ Left Thumb Terminal Tip	☐ Left Thumb Interphalangeal	☐ Left Thumb Metacarpophalangeal	☐ Left Thumb 1st Ray
☐ Right Partial Hand	☐ Left Partial Hand	☐ Blank1 (Do Not Check Box)	☐ Blank2 (Do Not Check Box)	☐ Blank3 (Do Not Check Box)	☐ Blank4 (Do Not Check Box)	☐ Blank5 (Do Not Check Box)	☐ Blank6 (Do Not Check Box)
☐ Right Hip Disarticulation	☐ Right Above Knee	☐ Right Below Knee	☐ Right Ankle Disarticulation	☐ Left Hip Disarticulation	☐ Left Above Knee	☐ Left Below Knee	☐ Left Ankle Disarticulation
☐ Right Partial-Foot	☐ Right Great Toe Metatarsophalangeal	☐ Right Great Toe Interphalangeal	☐ Right Great Toe Tip	☐ Left Partial-Foot	☐ Left Great Toe Metatarsophalangeal	☐ Left Great Toe Interphalangeal	☐ Left Great Toe Tip
☐ Right 2nd Toe Partial	☐ Right 3rd Toe Partial	☐ Right 4th Toe Partial	☐ Right 5th Toe Partial	☐ Right 2nd Toe Complete	☐ Right 3rd Toe Complete	☐ Right 4th Toe Complete	☐ Right 5th Toe Complete
☐ Left 2nd Toe Partial	☐ Left 3rd Toe Partial	☐ Left 4th Toe Partial	☐ Left 5th Toe Partial	☐ Left 2nd Toe Complete	☐ Left 3rd Toe Complete	☐ Left 4th Toe Complete	☐ Left 5th Toe Complete
☐ None							

Discharge Part 2 of 3

General Information

Signature _____ Date _____

Data Entry Date 02/10/2015

Sage Instructions

Print, measure, and record, range of motion measurements per the SAGE Diagram, accessed by clicking on the following link:

<https://burn.ucdmc.ucdavis.edu>

Range of Motion Measurements (Body)

Body Area / Movement Affected	Range of Motion Measurement (Passive)	ROM Contributing Co-Morbid Conditions
		☐ None ☐ Scar Tissue ☐ Other Soft Tissue ☐ Pain ☐ Edema ☐ Open Wound ☐ Joint Deformity ☐ Joint Fusion ☐ Fracture ☐ Tendon Rupture ☐ Muscle Weakness ☐ Heterotopic Ossification ☐ Peripheral Neuropathy ☐ Arthritis ☐ Spasticity ☐ Pre-Burn Physical Condition ☐ Other ☐ Unable To Test
		☐ None ☐ Scar Tissue ☐ Other Soft Tissue ☐ Pain ☐ Edema ☐ Open Wound ☐ Joint Deformity ☐ Joint Fusion ☐ Fracture ☐ Tendon Rupture ☐ Muscle Weakness ☐ Heterotopic Ossification ☐ Peripheral Neuropathy ☐ Arthritis ☐ Spasticity ☐ Pre-Burn Physical Condition ☐ Other ☐ Unable To Test
		☐ None ☐ Scar Tissue ☐ Other Soft Tissue ☐ Pain ☐ Edema ☐ Open Wound ☐ Joint Deformity ☐ Joint Fusion ☐ Fracture ☐ Tendon Rupture ☐ Muscle Weakness ☐ Heterotopic Ossification ☐ Peripheral Neuropathy ☐ Arthritis ☐ Spasticity ☐ Pre-Burn Physical Condition ☐ Other ☐ Unable To Test
		☐ None ☐ Scar Tissue ☐ Other Soft Tissue ☐ Pain ☐ Edema ☐ Open Wound ☐ Joint Deformity ☐ Joint Fusion ☐ Fracture ☐ Tendon Rupture ☐ Muscle Weakness ☐ Heterotopic Ossification ☐ Peripheral Neuropathy ☐ Arthritis ☐ Spasticity ☐ Pre-Burn Physical Condition ☐ Other ☐ Unable To Test

Discharge Part 3 of 3

General Information

Signature _____ Date _____

Data Entry Date 02/10/2015

Range Of Motion (Hand/Finger)

Print, measure, and record, range of motion measurements per the SAGE Diagram, accessed by clicking on the following link:

<https://burn.ucdmc.ucdavis.edu>

Measurements

Body Area / Movement Affected	Range of Motion Measurement (Passive)	ROM Contributing Co-Morbid Conditions
		☐ None ☐ Scar Tissue ☐ Other Soft Tissue ☐ Pain ☐ Edema ☐ Open Wound ☐ Joint Deformity ☐ Joint Fusion ☐ Fracture ☐ Tendon Rupture ☐ Muscle Weakness ☐ Heterotopic Ossification ☐ Peripheral Neuropathy ☐ Arthritis ☐ Spasticity ☐ Pre-Burn Physical Condition ☐ Other ☐ Unable To Test
		☐ None ☐ Scar Tissue ☐ Other Soft Tissue ☐ Pain ☐ Edema ☐ Open Wound ☐ Joint Deformity ☐ Joint Fusion ☐ Fracture ☐ Tendon Rupture ☐ Muscle Weakness ☐ Heterotopic Ossification ☐ Peripheral Neuropathy ☐ Arthritis ☐ Spasticity ☐ Pre-Burn Physical Condition ☐ Other ☐ Unable To Test
		☐ None ☐ Scar Tissue ☐ Other Soft Tissue ☐ Pain ☐ Edema ☐ Open Wound ☐ Joint Deformity ☐ Joint Fusion ☐ Fracture ☐ Tendon Rupture ☐ Muscle Weakness ☐ Heterotopic Ossification ☐ Peripheral Neuropathy ☐ Arthritis ☐ Spasticity ☐ Pre-Burn Physical Condition ☐ Other ☐ Unable To Test
		☐ None ☐ Scar Tissue ☐ Other Soft Tissue ☐ Pain ☐ Edema ☐ Open Wound ☐ Joint Deformity ☐ Joint Fusion ☐ Fracture ☐ Tendon Rupture ☐ Muscle Weakness ☐ Heterotopic Ossification ☐ Peripheral Neuropathy ☐ Arthritis ☐ Spasticity ☐ Pre-Burn Physical Condition ☐ Other ☐ Unable To Test

APPENDIX 4
Body Area option list ROM Wrist Hand

Option
Index finger - Left DIP extension (Composite)
Index finger - Left DIP extension (Isolated)
Index finger - Left DIP flexion (+ PIP flexion in Combination)
Index finger - Left DIP flexion (Composite)
Index finger - Left DIP flexion (Isolated)
Index finger - Left MCP extension (Composite)
Index finger - Left MCP extension (Isolated)
Index finger - Left MCP flexion (Composite)
Index finger - Left MCP flexion (Isolated)
Index finger - Left PIP extension (Composite)
Index finger - Left PIP extension (with MCP flexed & DIP extended)
Index finger - Left PIP flexion (+ DIP flexion in Combination)
Index finger - Left PIP flexion (Composite)
Index finger - Left PIP flexion (Isolated)
Index finger - Right DIP extension (Composite)
Index finger - Right DIP extension (Isolated)
Index finger - Right DIP flexion (+ PIP flexion in Combination)
Index finger - Right DIP flexion (Composite)
Index finger - Right DIP flexion (Isolated)
Index finger - Right MCP extension (Composite)
Index finger - Right MCP extension (Isolated)
Index finger - Right MCP flexion (Composite)
Index finger - Right MCP flexion (Isolated)
Index finger - Right PIP extension (Composite)
Index finger - Right PIP extension (with MCP flexed & DIP extended)
Index finger - Right PIP flexion (+ DIP flexion in Combination)
Index finger - Right PIP flexion (Composite)
Index finger - Right PIP flexion (Isolated)
Middle finger - Left DIP extension (Composite)
Middle finger - Left DIP extension (Isolated)
Middle finger - Left DIP flexion (+ PIP flexion in Combination)
Middle finger - Left DIP flexion (Composite)
Middle finger - Left DIP flexion (Isolated)
Middle finger - Left MCP extension (Composite)
Middle finger - Left MCP extension (Isolated)
Middle finger - Left MCP flexion (Composite)
Middle finger - Left MCP flexion (Isolated)
Middle finger - Left PIP extension (Composite)
Middle finger - Left PIP extension (with MCP flexed & DIP extended)
Middle finger - Left PIP flexion (+ DIP flexion in Combination)
Middle finger - Left PIP flexion (Composite)
Middle finger - Left PIP flexion (Isolated)
Middle finger - Right DIP extension (Composite)
Middle finger - Right DIP extension (Isolated)
Middle finger - Right DIP flexion (+ PIP flexion in Combination)
Middle finger - Right DIP flexion (Composite)

Option
Middle finger - Right DIP flexion (Isolated)
Middle finger - Right MCP extension (Composite)
Middle finger - Right MCP extension (Isolated)
Middle finger - Right MCP flexion (Composite)
Middle finger - Right MCP flexion (Isolated)
Middle finger - Right PIP extension (Composite)
Middle finger - Right PIP extension (with MCP flexed & DIP extended)
Middle finger - Right PIP flexion (+ DIP flexion in Combination)
Middle finger - Right PIP flexion (Composite)
Middle finger - Right PIP flexion (Isolated)
Ring finger - Left DIP extension (Composite)
Ring finger - Left DIP extension (Isolated)
Ring finger - Left DIP flexion (+ PIP flexion in Combination)
Ring finger - Left DIP flexion (Composite)
Ring finger - Left DIP flexion (Isolated)
Ring finger - Left MCP extension (Composite)
Ring finger - Left MCP extension (Isolated)
Ring finger - Left MCP flexion (Composite)
Ring finger - Left MCP flexion (Isolated)
Ring finger - Left PIP extension (Composite)
Ring finger - Left PIP extension (with MCP flexed & DIP extended)
Ring finger - Left PIP flexion (+ DIP flexion in Combination)
Ring finger - Left PIP flexion (Composite)
Ring finger - Left PIP flexion (Isolated)
Ring finger - Right DIP extension (Composite)
Ring finger - Right DIP extension (Isolated)
Ring finger - Right DIP flexion (+ PIP flexion in Combination)
Ring finger - Right DIP flexion (Composite)
Ring finger - Right DIP flexion (Isolated)
Ring finger - Right MCP extension (Composite)
Ring finger - Right MCP extension (Isolated)
Ring finger - Right MCP flexion (Composite)
Ring finger - Right MCP flexion (Isolated)
Ring finger - Right PIP extension (Composite)
Ring finger - Right PIP extension (with MCP flexed & DIP extended)
Ring finger - Right PIP flexion (+ DIP flexion in Combination)
Ring finger - Right PIP flexion (Composite)
Ring finger - Right PIP flexion (Isolated)
Small finger - Left DIP extension (Composite)
Small finger - Left DIP extension (Isolated)
Small finger - Left DIP flexion (+ PIP flexion in Combination)
Small finger - Left DIP flexion (Composite)
Small finger - Left DIP flexion (Isolated)
Small finger - Left MCP extension (Composite)
Small finger - Left MCP extension (Isolated)
Small finger - Left MCP flexion (Composite)
Small finger - Left MCP flexion (Isolated)
Small finger - Left PIP extension (Composite)
Small finger - Left PIP extension (with MCP flexed & DIP extended)

Option
Small finger - Left PIP flexion (+ DIP flexion in Combination)
Small finger - Left PIP flexion (Composite)
Small finger - Left PIP flexion (Isolated)
Small finger - Right DIP extension (Composite)
Small finger - Right DIP extension (Isolated)
Small finger - Right DIP flexion (+ PIP flexion in Combination)
Small finger - Right DIP flexion (Composite)
Small finger - Right DIP Flexion (Isolated)
Small finger - Right MCP extension (Composite)
Small finger - Right MCP extension (Isolated)
Small finger - Right MCP flexion (Composite)
Small finger - Right MCP flexion (Isolated)
Small finger - Right PIP extension (Composite)
Small finger - Right PIP extension (with MCP flexed & DIP extended)
Small finger - Right PIP flexion (+ DIP flexion in Combination)
Small finger - Right PIP flexion (Composite)
Small finger - Right PIP flexion (Isolated)
Thumb - Left CMC flexion (Composite toward Distal Palmar Crease below Small Finger)
Thumb - Left CMC flexion (Isolated), Thumb - Left MCP flexion (Isolated)
Thumb - Left CMC Palmar abduction
Thumb - Left CMC Radial abduction (Composite)
Thumb - Left CMC Radial abduction (Isolated)
Thumb - Left IP extension (Combination w/ MCP extended-CMC flexed)
Thumb - Left IP extension (Composite)
Thumb - Left IP extension (Isolated w/ CMC flexed-MCP flexed)
Thumb - Left IP flexion (Composite toward Distal Palmar Crease below Small Finger)
Thumb - Left MCP extension (Combination w/ IP extended-CMC flexed)
Thumb - Left MCP extension (Composite)
Thumb - Left MCP extension (Isolated w/ CMC flexed-IP relaxed)
Thumb - Left MCP flexion (Composite toward Distal Palmar Crease below Small Finger)
Thumb - Left MCP flexion w/ CMC flexed-IP extended
Thumb - Right CMC flexion (Composite toward Distal Palmar Crease below Small Finger)
Thumb - Right CMC flexion (Isolated)
Thumb - Right CMC Palmar abduction
Thumb - Right CMC Radial abduction (Composite)
Thumb - Right CMC Radial abduction (Isolated)
Thumb - Right IP extension (Combination w/ MCP extended-CMC flexed)
Thumb - Right IP extension (Composite)
Thumb - Right IP extension (Isolated w/ CMC and MCP flexed)
Thumb - Right IP flexion (Composite toward Distal Palmar Crease below Small Finger)
Thumb - Right MCP extension (Combination w/ IP extended-CMC flexed)
Thumb - Right MCP extension (Composite)
Thumb - Right MCP extension (Isolated w/ CMC flexed-IP relaxed)
Thumb - Right MCP flexion (Composite toward Distal Palmar Crease below Small Finger)
Thumb - Right MCP flexion (Isolated)
Thumb - Right MCP flexion w/ CMC flexed-IP extended

APPENDIX 5

SAGE DIAGRAM

SAGE II Surface Area Graphic Evaluation © 1987- 114 SageDiagram, LLC

Restart

Delete

trace

undo

Calculate

Change

open

save

☐ Text

☒ Partial

☐ Deep

☐ Amputate

☐ autogra ▼

☐ donor ▼

ucdmc

Patient name

Patient ID

Age 18

Kilos

Ht.(cm)

Image:n/a

User

Feb 5, 2015 1:18:06 PM

<

>

Burn TBSA			
	Antr%	Postr%	
Head	-----	-----	
Neck	-----	-----	
Lt.Arm	-----	-----	tbsa ****
Lt.Forearm	-----	-----	prtl ****
Lt.Hand	-----	-----	dp ****
Rt.Arm	-----	-----	amp ****
Rt.Forearm	-----	-----	auto ****
Rt.Hand	-----	-----	dnr ****
Trunk	-----	-----	
Lt.Thigh	-----	-----	
Lt.Leg	-----	-----	
Lt.Foot	-----	-----	
Rt.Thigh	-----	-----	
Rt.Leg	-----	-----	
Rt.Foot	-----	-----	
Perineum	-----	-----	
Lt.Buttock	-----	-----	
Rt.Buttock	-----	-----	

Parkland fluids

4.00 -ml/kg/%

Sage II © 1987-2014

APPENDIX 6
SAGE BURN ID REFERENCE CHART

SAGE Burn ID Lund-Browder Body Area List

brn_id	lba_desc
0	Antr.Head
1	Antr.Neck
2	Antr.Lt.Arm
3	Antr.Lt.Forearm
4	Antr.Lt.Hand
5	Antr.Rt.Arm
6	Antr.Rt.Forearm
7	Antr.Rt.Hand
8	Antr.Trunk
9	Antr.Lt.Thigh
10	Antr.Lt.Leg
11	Antr.Lt.Foot
12	Antr.Rt.Thigh
13	Antr.Rt.Leg
14	Antr.Rt.Foot
15	Perineum
16	Postr.Head
17	Postr.Neck
18	Postr.Lt.Arm
19	Postr.Lt.Forearm
20	Postr.Lt.Hand
21	Postr.Rt.Arm
22	Postr.Rt.Forearm
23	Postr.Rt.Hand
24	Postr.Trunk
25	Postr.Lt.Thigh
26	Postr.Lt.Leg
27	Postr.Lt.Foot
28	Postr.Rt.Thigh
29	Postr.Rt.Leg
30	Postr.Rt.Foot
31	Lt.Buttock
32	Rt.Buttock

APPENDIX 7
SAGE BODY LOCATION REFERENCE CHART

Descriptive	Numerical Reference
Head	10000
Eye Medial Canthus - Left	12211
Eye Lateral Canthus - Left	12212
Lower Eyelid Ectropion - Left	12213
Eye Medial Canthus - Right	12221
Eye Lateral Canthus - Right	12222
Lower Eyelid Ectropion - Right	12223
Mouth	12400
Mouth Commissure - Left	12410
Mouth Commissure - Right	12420
Lower Lip Eversion	12510
Neck flexion	21000
Neck	22000
Neck rotation - Left	22001
Neck rotation - Right	22002
Neck lateral flexion - Left	22011
Neck lateral flexion - Right	22012
Cervical	23000
Other	30000
Spine	31000
Shoulder flexion - Left	31001
Shoulder flexion - Right	31002
Left Posterior Axilla	31120
Right Posterior Axilla	31220
Lumbar	31310
Thoracic	31320
Shoulder abduction - Left	32001
Shoulder abduction - Right	32002
Left Anterior Hip (Inguinal)	32011
Right Anterior Hip (Inguinal)	32012
Pelvis	32013
Shoulder external rotation - Left	32103
Hip abduction - Left	32111
Hip abduction - Right	32112
Left Anterior Axilla	32120
Shoulder external rotation - Right	32203
Right Anterior Axilla	32220

Descriptive	Numerical Reference
Synmastia	32320
Thorax	33000
Right - Upper Extremity	40000
Right Shoulder	40004
Right Posterior Arm	41000
Right Wrist Dorsal	41100
Right Posterior Wrist	41110
Right Posterior Elbow	41200
Right posterior elbow/Olecranon	41210
Right Anterior Arm	42000
Right Wrist/Digital Flexors	42100
Right Wrist Volar	42101
Right Anterior Wrist	42110
Right Elbow Flexors	42200
Right forearm	43100
Right Below Elbow	43106
Right wrist / ulnar head	43110
Right Wrist Disarticulation	43116
Right arm	43200
Right Above Elbow	43206
Right Elbow	43210
Shoulder (Right)	43220
Right Shoulder Disarticulation	43226
Left - Upper Extremity	50000
Left Shoulder	50005
Left Posterior Arm	51000
Left Wrist/Digital Extensors	51100
Left Posterior Wrist	51110
Left Posterior Elbow	51200
Left posterior elbow/Olecranon	51210
Right Ring Terminal Tip	51536
Left Anterior Arm	52000
Left Wrist/Digital Flexors	52100
Left Wrist Volar	52101
Left Anterior Wrist	52110
Left Elbow Flexors	52200
Left forearm	53100
Left Below Elbow	53106
Left wrist / ulnar head	53110
Left Wrist Disarticulation	53116

Descriptive	Numerical Reference
Left arm	53200
Left Above Elbow	53206
Left Elbow	53210
Shoulder (Left)	53220
Left Shoulder Disarticulation	53226
Right hand/finger(s)	60000
Right hand	61000
2nd Ray	61100
Proximal Phalanx	61110
Index finger - Right PIP flexion (Composite)	61113
Boutonniere Deformity - Index Right	61117
Proximal Phalanx	61120
Middle finger - Right PIP flexion (Composite)	61123
Boutonniere Deformity - Middle Right	61127
Proximal Phalanx	61130
Proximal Interphalangeal Joint	61131
Metacarpal Phalangeal Joint	61132
Distal Interphalangeal Joint	61133
Boutonniere Deformity - Ring Right	61137
Proximal Phalanx	61140
Small finger - Right PIP flexion (Composite)	61143
Boutonniere Deformity - Small Right	61147
3rd Ray	61200
Metacarpal	61220
Middle finger - Right MCP flexion (Composite)	61223
Metacarpal	61230
Proximal Interphalangeal Joint	61231
Metacarpal Phalangeal Joint	61232
Distal Interphalangeal Joint	61233
Metacarpal	61240
Small finger - Right MCP flexion (Composite)	61243
Right Dorsal Fingers	61300
Finger(s)- (Right)	61302
Middle Phalanx	61310
Right Index Finger Dorsum	61312
Index finger - Right DIP flexion (Composite)	61313
Index finger - Right PIP flexion (+ DIP flexion in Combination)	61315
Index finger - Right DIP flexion (+ PIP flexion in Combination)	61316
Mallet Finger Deformity - Index Right	61318
Middle Phalanx	61320

Descriptive	Numerical Reference
Right Middle Finger Dorsum	61322
Middle finger - Right DIP flexion (Composite)	61323
Middle finger - Right PIP flexion (+ DIP flexion in Combination)	61325
Middle finger - Right DIP flexion (+ PIP flexion in Combination)	61326
Mallet Finger Deformity - Middle Right	61328
Middle Phalanx	61330
Proximal Interphalangeal Joint	61331
Metacarpal Phalangeal Joint	61332
Distal Interphalangeal Joint	61333
Ring finger - Right PIP flexion (+ DIP flexion in Combination)	61335
Ring finger - Right DIP flexion (+ PIP flexion in Combination)	61336
Mallet Finger Deformity - Ring Right	61338
Middle Phalanx	61340
Right Small Finger Dorsum	61342
Small finger - Right DIP flexion (Composite)	61343
Small finger - Right PIP flexion (+ DIP flexion in Combination)	61345
Small finger - Right DIP flexion (+ PIP flexion in Combination)	61346
Mallet Finger Deformity - Small Right	61348
5th Ray	61400
Swan Neck Deformity - Index Right	61419
Swan Neck Deformity - Middle Right	61429
Proximal Interphalangeal Joint	61431
Metacarpal Phalangeal Joint	61432
Distal Interphalangeal Joint	61433
Swan Neck Deformity - Ring Right	61439
Swan Neck Deformity - Small Right	61449
Distal Phalanx	61510
Right Index Terminal Tip	61516
Right middle finger	61520
Right Middle Terminal Tip	61526
Distal Phalanx	61530
Distal Phalanx	61540
Right Small Terminal Tip	61546
Right Partial Hand	63006
Right Index Metacarpo-phalangeal	63216
Right Middle Metacarpo-phalangeal	63226
Right Ring Metacarpo-phalangeal	63236
Right Small Metacarpo-phalangeal	63246
Right Index Proximal Interphalangeal	63316
Right Middle Proximal Interphalangeal	63326

Descriptive	Numerical Reference
Right Ring Proximal Interphalangeal	63336
Right Small Proximal Interphalangeal	63346
Right Index Distal Interphalangeal	63416
Right Middle Distal Interphalangeal	63426
Right Ring Distal Interphalangeal	63436
Right Small Distal Interphalangeal	63446
Fingers (Right)	64000
Claw Hand Deformity - Right	64900
Left hand/finger(s)	70000
Hand (Left)	71000
Proximal Phalanx	71110
Index finger - Left PIP flexion (Composite)	71113
Boutonniere Deformity - Index Left	71117
Proximal Phalanx	71120
Middle finger - Left PIP flexion (Composite)	71123
Boutonniere Deformity - Middle Left	71127
Proximal Phalanx	71130
Proximal Interphalangeal Joint	71131
Metacarpal Phalangeal Joint	71132
Distal Interphalangeal Joint	71133
Boutonniere Deformity - Ring Left	71137
Proximal Phalanx	71140
Small finger - Left PIP flexion (Composite)	71143
Boutonniere Deformity - Small Left	71147
3rd Ray	71200
Metacarpal	71210
Index finger - Left MCP flexion (Composite)	71213
Metacarpal	71220
Middle finger - Left MCP flexion (Composite)	71223
Metacarpal	71230
Proximal Interphalangeal Joint	71231
Metacarpal Phalangeal Joint	71232
Distal Interphalangeal Joint	71233
Metacarpal	71240
Small finger - Left MCP flexion (Composite)	71243
Left Dorsal Fingers	71300
Finger(s)- (Left)	71302
Middle Phalanx	71310
Left Index Finger Dorsum	71312
Index finger - Left DIP flexion (Composite)	71313

Descriptive	Numerical Reference
Index finger - Left PIP flexion (+ DIP flexion in Combination)	71315
Index finger - Left DIP flexion (+ PIP flexion in Combination)	71316
Mallet Finger Deformity - Index Left	71318
Middle Phalanx	71320
Left Middle Finger Dorsum	71322
Middle finger - Left DIP flexion (Composite)	71323
Middle finger - Left PIP flexion (+ DIP flexion in Combination)	71325
Middle finger - Left DIP flexion (+ PIP flexion in Combination)	71326
Mallet Finger Deformity - Middle Left	71328
Ring finger - Left DIP flexion (Isolated)	71330
Proximal Interphalangeal Joint	71331
Metacarpal Phalangeal Joint	71332
Distal Interphalangeal Joint	71333
Ring finger - Left PIP flexion (+ DIP flexion in Combination)	71335
Ring finger - Left DIP flexion (+ PIP flexion in Combination)	71336
Mallet Finger Deformity - Ring Left	71338
Middle Phalanx	71340
Left Small Finger Dorsum	71342
Small finger - Left DIP flexion (Composite)	71343
Small finger - Left PIP flexion (+ DIP flexion in Combination)	71345
Small finger - Left DIP flexion (+ PIP flexion in Combination)	71346
Mallet Finger Deformity - Small Left	71348
5th Ray	71400
Swan Neck Deformity - Index Left	71419
Middle Phalanx	71420
Swan Neck Deformity - Middle Left	71429
Proximal Interphalangeal Joint	71431
Metacarpal Phalangeal Joint	71432
Distal Interphalangeal Joint	71433
Swan Neck Deformity - Small Left	71449
Distal Phalanx	71510
Left Index Terminal Tip	71516
Distal Phalanx	71520
Left Middle Terminal Tip	71526
Distal Phalanx	71530
Left Ring Terminal Tip	71536
Left small finger	71540
Left Small Terminal Tip	71546
Swan Neck Deformity - Ring Left	71739
Left Partial Hand	73006

Descriptive	Numerical Reference
Left Index Metacarpo-phalangeal	73216
Left Middle Metacarpo-phalangeal	73226
Left Ring Metacarpo-phalangeal	73236
Left Small Metacarpo-phalangeal	73246
Left Index Proximal Interphalangeal	73316
Left Middle Proximal Interphalangeal	73326
Left Ring Proximal Interphalangeal	73336
Left Small Proximal Interphalangeal	73346
Left Index Distal Interphalangeal	73416
Left Middle Distal Interphalangeal	73426
Left Ring Distal Interphalangeal	73436
Left Small Distal Interphalangeal	73446
Fingers (Left)	74000
Claw Hand Deformity - Left	74900
Right Thumb Dorsal	81000
Metacarpal	81100
Thumb - Right CMC flexion (Composite toward Distal Palmar Crease below Small Finger)	81103
Proximal Phalanx	81200
Thumb - Right MCP flexion (Composite toward Distal Palmar Crease below Small Finger)	81203
Thumb MCP Hyperextension Right	81205
Distal Phalanx	81300
Thumb - Right IP flexion (Composite toward Distal Palmar Crease below Small Finger)	81303
Thumb IP Hyperextension Right	81305
Right thumb	81400
Interphalangeal Joint	81410
Metacarpal Phalangeal Joint	81420
Right Thumb 1st Ray	83106
Right Thumb Metacarpo-phalangeal	83206
Right Thumb Interphalangeal	83306
Right Thumb Terminal Tip	83406
Left Thumb Dorsal	91000
Metacarpal	91100
Thumb - Left CMC flexion (Composite toward Distal Palmar Crease below Small Finger)	91103
Proximal Phalanx	91200
Thumb - Left MCP flexion (Composite toward Distal Palmar Crease below Small Finger)	91203
Thumb MCP Hyperextension Left	91205
Distal Phalanx	91300
Thumb - Left IP flexion (Composite toward Distal Palmar Crease below Small Finger))	91303
Thumb IP Hyperextension Left	91305
Left thumb	91400

Descriptive	Numerical Reference
Interphalangeal Joint	91410
Metacarpal Phalangeal Joint	91420
Left Thumb 1st Ray	93106
Left Thumb Metacarpophalangeal	93206
Left Thumb Interphalangeal	93306
Left Thumb Terminal Tip	93406
Right Palmar Digital Flexors	100000
Right Palmar Fingers	101300
Right Index Finger Volar	101312
Right Middle Finger Volar	101322
Right Ring Finger Volar	101332
Right Small Finger Volar	101342
Right Palmar Hand	102000
Index finger - Right PIP extension (with MCP flexed & DIP extended)	102110
Index finger - Right PIP extension (Composite)	102113
Middle finger - Right PIP extension (with MCP flexed & DIP extended)	102120
Middle finger - Right PIP extension (Composite)	102123
Ring finger - Right PIP extension (with MCP flexed & DIP extended)	102130
Ring finger - Right PIP extension (Composite)	102133
Small finger - Right PIP extension (with MCP flexed & DIP extended)	102140
Small finger - Right PIP extension (Composite)	102143
Index finger - Right MCP extension (Isolated)	102210
Index finger - Right MCP extension (Composite)	102213
Middle finger - Right MCP extension (Isolated)	102220
Middle finger - Right MCP extension (Composite)	102223
Ring finger - Right MCP extension (Isolated)	102230
Ring finger - Right MCP extension (Composite)	102233
Small finger - Right MCP extension (Isolated)	102240
Small finger - Right MCP extension (Composite)	102243
Index finger - Right DIP extension (Isolated)	102310
Index finger - Right DIP extension (Composite)	102313
Middle finger - Right DIP extension (Isolated)	102320
Middle finger - Right DIP extension (Composite)	102323
Ring finger - Right DIP extension (Isolated)	102330
Ring finger - Right DIP extension (Composite)	102333
Small finger - Right DIP extension (Isolated)	102340
Small finger - Right DIP extension (Composite)	102343
Benediction Hand - Right	104900
Left Palmar Digital Flexors	110000
Left Palmar Fingers	111300

Descriptive	Numerical Reference
Left Index Finger Volar	111312
Left Middle Finger Volar	111322
Left Ring Finger Volar	111332
Left Small Finger Volar	111342
Left Palmar Hand	112000
Index finger - Left PIP extension (with MCP flexed & DIP extended)	112110
Index finger - Left PIP extension (Composite)	112113
Middle finger - Left PIP extension (with MCP flexed & DIP extended)	112120
Middle finger - Left PIP extension (Composite)	112123
Ring finger - Left PIP extension (with MCP flexed & DIP extended)	112130
Ring finger - Left PIP extension (Composite)	112133
Small finger - Left PIP extension (with MCP flexed & DIP extended)	112140
Small finger - Left PIP extension (Composite)	112143
Index finger - Left MCP extension (Isolated)	112210
Index finger - Left MCP extension (Composite)	112213
Middle finger - Left MCP extension (Isolated)	112220
Middle finger - Left MCP extension (Composite)	112223
Ring finger - Left MCP extension (Isolated)	112230
Ring finger - Left MCP extension (Composite)	112233
Small finger - Left MCP extension (Isolated)	112240
Small finger - Left MCP extension (Composite)	112243
Index finger - Left DIP extension (Isolated)	112310
Index finger - Left DIP extension (Composite)	112313
Middle finger - Left DIP extension (Isolated)	112320
Middle finger - Left DIP extension (Composite)	112323
Ring finger - Left DIP extension (Isolated)	112330
Ring finger - Left DIP extension (Composite)	112333
Small finger - Left DIP extension (Isolated)	112340
Small finger - Left DIP extension (Composite)	112343
Benediction Hand - Left	114900
Right Thumb Volar	122000
Thumb - Right IP extension (Composite)	122013
Thumb - Right CMC Radial abduction (Isolated)	122100
Thumb - Right CMC Radial abduction (Composite)	122103
Thumb - Right MCP extension (Isolated w/ CMC flexed-IP relaxed)	122200
Thumb - Right MCP extension (Combination w/ IP extended-CMC flexed)	122202
Thumb - Right IP extension (Isolated w/ CMC and MCP flexed)	122300
Thumb - Right IP extension (Combination w/ MCP extended-CMC flexed)	122302
Thumb - Right MCP extension (Composite)	122303
Ape Hand - Right	124900

Descriptive	Numerical Reference
Left Thumb Volar	132000
Thumb - Left IP extension (Composite)	132013
Thumb - Left MCP extension (Composite)	132023
Thumb - Left CMC Radial abduction (Isolated)	132100
Thumb - Left CMC Radial abduction (Composite)	132103
Thumb - Left MCP extension (Isolated w/ CMC flexed-IP relaxed)	132200
Thumb - Left MCP extension (Combination w/ IP extended-CMC flexed)	132202
Thumb - Left IP extension (Isolated w/ CMC flexed-MCP flexed)	132300
Thumb - Left IP extension (Combination w/ MCP extended-CMC flexed)	132302
Ape Hand - Left	134900
Palm Cupping Deformity - Left	141190
Palm Cupping Deformity - Right	142190
Left Thumb Web Dorsal	151100
Right Thumb Web Dorsal	151200
Left Thumb Web Volar	152100
Right Thumb Web Volar	152200
5th Finger Deformity - Left	161090
5th Finger Deformity - Right	162090
Left Posterior Hip (Buttock)	181000
Right Posterior Hip (Buttock)	182000
Left - Lower Extremity	190000
Left Hip Disarticulation	190006
Left Posterior Thigh	191200
Left Above Knee	193206
Hip (Left)	193220
Left Below Knee	193306
Left Ankle Disarticulation	193316
Right Hip Disarticulation	200006
Right Above Knee	203206
Hip (Right)	203220
Right Below Knee	203306
Right Ankle Disarticulation	203316
Left Partial-Foot	210006
Great toe extension - Left	211101
2nd toe extension - Left	211102
3rd toe extension - Left	211103
4th toe extension - Left	211104
5th toe extension - Left	211105
Great toe flexion - Left	212101
2nd toe flexion - Left	212102

Descriptive	Numerical Reference
3rd toe flexion - Left	212103
4th toe flexion - Left	212104
5th toe flexion - Left	212105
Left toe(s)	213100
Left Great Toe Tip	213116
Left Great Toe Interphalangeal	213126
Left Great Toe Metatarsophalangeal	213136
Left 2nd Toe Partial	213216
Left 2nd Toe Complete	213226
Left 3rd Toe Partial	213316
Left 3rd Toe Complete	213326
Left 4th Toe Partial	213416
Left 4th Toe Complete	213426
Left 5th Toe Partial	213516
Left 5th Toe Complete	213526
Right Partial-Foot	220006
Great toe extension - Right	221101
2nd toe extension - Right	221102
3rd toe extension - Right	221103
4th toe extension - Right	221104
5th toe extension - Right	221105
Great toe flexion - Right	222101
2nd toe flexion - Right	222102
3rd toe flexion - Right	222103
4th toe flexion - Right	222104
5th toe flexion - Right	222105
Right toe(s)	223100
Right Great Toe Tip	223116
Right Great Toe Interphalangeal	223126
Right Great Toe Metatarsophalangeal	223136
Right 2nd Toe Partial	223216
Right 2nd Toe Complete	223226
Right 3rd Toe Partial	223316
Right 3rd Toe Complete	223326
Right 4th Toe Partial	223416
Right 4th Toe Complete	223426
Right 5th Toe Partial	223516
Right 5th Toe Complete	223526
Right Wrist/hand/finger/thumb volar	410120
Right Wrist/hand/finger/thumb dorsal	468000

Descriptive	Numerical Reference
Right Wrist/hand/finger/thumb combo	481002
Left Wrist/hand/finger/thumb volar	511130
Left Wrist/hand/finger/thumb dorsal	579000
Left Wrist/hand/finger/thumb combo	591102