



Memorial Sloan Kettering
Cancer Center

Integrating Quality Reporting into the Electronic Medical Record

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www.MSKCC.org

OVERVIEW

- ✓ Objectives
- ✓ Introduction
- ✓ Electronic Documentation development to support Quality Reporting
- ✓ Electronic Medical Record features to support Quality Reporting
- ✓ Conclusion

OBJECTIVES

- **Identify steps within building electronic documentation to support Quality Reporting**
- **Identify areas within the Electronic Medical Record to query data from for Quality Reporting**

INTRODUCTION

- **Hospitals are implementing Electronic Medical Records (EMR) at a growing rate.**
- **EMRs, designed well, can help monitor, improve, and report data on Quality and Safety.**



INTRODUCTION

- **American Recovery and Reinvestment Act of 2009**
 - Health Information Technology for Economic and Clinical Health (HITECH) Act
 - Incentive program for Medicaid and Medicare programs for demonstrating 'meaningful use'



INTRODUCTION

Meaningful Use

- Use of certified EMR technology to
 - Improve quality, safety, efficiency, and reduce health disparities
 - Engage patients and families in their health care
 - Improve care coordination
 - Improve population and public health
 - All the while maintaining privacy and security



INTRODUCTION

- Medicare & Medicaid EHR Incentive Program

Meaningful Use Stage 1 Requirements Overview

- http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/MU_Stage1_ReqOverview.pdf



ELECTRONIC MEDICAL RECORDS

- Efficient communication
- Enhanced care coordination
- Positive financial return
- Standardization

BENEFITS



- Free text fields
- Scanned laboratory reports
- Inconsistent Documentation

DRAWBACKS



ELECTRONIC MEDICAL RECORDS

- Important to determine what information will need to be retrieved from EMR, while determining what information needs to be captured/documentated in EMR.



QUALITY IN ELECTRONIC DOCUMENTATION

- Development of Electronic Documentation
 - Identify significant data routinely captured/ extracted from EMR related to Transplantation
 - Customization for individual department/services would need to be addressed



QUALITY IN ELECTRONIC DOCUMENTATION

EXAMPLE: Inpatient Progress/Outpatient Follow Up

- 'Significant Transplant Data' (HSCT Summary)
 - HSCT Date
 - Number of days pre/post Transplant
 - Diagnosis
 - Co-morbidities
 - Conditioning Regimen
 - Donor Type
 - Graft Source
 - Match
 - CMV/EBV/Toxo Status



QUALITY IN ELECTRONIC DOCUMENTATION

Inpatient Progress /Outpatient Follow Up Note

- Specific Fields
 - Query-able
- Standardization/Consistency
 - Populated into each note
- Logic/Calculation (Transplant Date)
 - Increases accuracy



EXAMPLES

Create **Preview**

Copy Forward Refer to Note Preview Modify Template |< << >> >|

Document Info

Sections

HSCTDate

HSCT DATE: / / SCT

DAY PRE/POST: Calculate DAY PRE/POST

HSCT Summary

PRIMARY CANCER DX:

CYTOGENETICS/MOLECULAR:

ADDITIONAL CANCER DX/COMORBIDITIES - PRE TRANSPLANT:

ADDITIONAL CANCER DX/COMORBIDITIES - POST TRANSPLANT:

PREPARATIVE REGIMEN: Protocol: Conditioning:

GRAFT: Allogeneic Autologous Stem Cell Source:

Manipulation:

Type: Unrelated Donor Related Donor Cord Blood Haplo Autologous

Match: 10/10 match Mismatched...

PATIENT: ABO:

CMV IgG: Positive Negative Equivocal N/A

EBV IgG: Positive Negative Equivocal N/A

Toxo IgG: Positive Negative Equivocal N/A



EXAMPLES

HSCT Date:

- HSCT DATE: 01/01/2013.
- DAY PRE/POST: +378.

HSCT Summary:

- PRIMARY CANCER DX: Acute Myelogenous Leukemia.
- ADDITIONAL CANCER DX/COMORBIDITIES - PRE TRANSPLANT: Diabetes.
- ADDITIONAL CANCER DX/COMORBIDITIES - POST TRANSPLANT: HTN.
- PREPARATIVE REGIMEN: Protocol: off protocol. . Conditioning: bu, mel, flu. Rabbit ATG.
- GRAFT: Allogeneic. Stem Cell Source: PBSC.
- Manipulation: unmodified.
- Type: Unrelated Donor.
- Match: 10/10 match.
- PATIENT: ABO: A pos; CMV IgG: Positive. EBV IgG: Negative. Toxo IgG: Negative.



QUALITY IN ELECTRONIC DOCUMENTATION

EXAMPLE: Cell Infusion Document

- Significant Data:
 - Cell Infusion Type
 - Cell Source
 - Method
 - Donor
 - Manipulation
 - Bag Number
 - Cell Doses



EXAMPLES

Create Preview

Sections Copy Forward Refer to Note Preview Modify Template

Cell Infusion Type:

Autologous progenitor cells... Allogeneic progenitor cells... Autologous peripheral blood lymphocytes... Allogeneic peripheral blood lymphocytes...

Cell Source: Peripheral Blood Bone Marrow Cord Blood

Method: Unmodified T Cell Depleted

Donor: Related Unrelated

Manipulation: None Red cell depleted Plasma depleted Volume reduction Cryopreserved/Thawed Other...

Number of aliquots/bags:

CD3+ (x10)[^] cells/kg

CD34+ (x10)[^] cells/kg

Nucleated cells (x10)[^] per/kg

Total Volume:

Protocol Number:

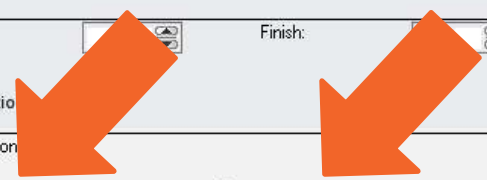
Procedure

Start: **Finish:**

Product Information

Cell Infusion:

Autologous progenitor cells... Allogeneic progenitor cells... Autologous peripheral blood lymphocytes... Allogeneic peripheral blood lymphocytes...



QUALITY IN ELECTRONIC DOCUMENTATION

Cell Infusion Document

- Required Fields
 - Increase compliance
- Data points specific to infusion type
 - Manipulation Options different for each Infusion type
 - CD 34+ and CD 3+ for Allogeneic Infusions
 - CD34+ Only for Autologous
- Infusion Reaction Logic



EXAMPLES

Reactions to Cellular Infusion

- No adverse reactions Adverse reactions...
- Nausea Vomiting Flushing Fever Chills/Rigors Erythema/rash Allergic reaction Anaphylaxis Headache Chest pain/tightness
- Bradycardia Hypotension Hypertension Dyspnea Hypoxia Bronchospasm Acute Respiratory Distress Seizure Other...

- Transferred to ICU Refer to Progress Note

! FEVER: Grade 3 - Severe Attributed to treatment: Suspicious for/Probable/Probably approx 75% Began with bag # 1

! CHILLS/RIGORS: Grade 3 - Severe Attributed to treatment: Possible/Possibly approx 50% Began with bag # 1

Adverse Reactions Details:



EXAMPLES

Procedure:

Start: 01:10 PM Finish: 01:40 PM.

Product Information:

- Cell Infusion Type: Allogeneic progenitor cells.
- Cell Source: Peripheral Blood.
- Method: T Cell Depleted.
- Donor: Related.
- Manipulation: None.
- Number of aliquots/bags: 1.
- Bag 1 Number: W1112223334.
- CD34+ 5.6 (x10)⁶ cells/kg.
- Total Volume: 50 ml.

Reactions to Cellular Infusion:

- FEVER: Grade 3 - Severe. Attributed to treatment: Suspicious for/Probable/Probably approx 75%. Began with bag #1.
- CHILLS/RIGORS: Grade 3 - Severe. Attributed to treatment: Possible/Possibly approx 50%. Began with bag #1.



EXAMPLES

The screenshot shows an Outlook window titled "Adverse Reaction - Message (Plain Text)". The ribbon includes "Message" and "Developer" tabs. The ribbon contains several groups of icons: "Respond" (Reply, Reply to All, Forward, Call), "Actions" (Delete, Move to Folder, Create Rule, Other Actions), "Options" (Categorize, Follow Up, Mark as Unread), and "Find" (Find, Related, Select). Below the ribbon, a notification states: "You forwarded this message on 11/18/2013 8:54 AM. This message was sent with High importance." The email header shows: "From: OMS_Alert@mskcc.org", "To: [Redacted]", "Cc:", and "Subject: Adverse Reaction". The main body of the email contains the text: "An adverse reaction occurred for patient [Redacted] ([Redacted]) at M 832 A. Please review the Cell Infusion - BMT document authored on 11/15/2013 20:58:00 in CIS."

QUALITY IN ELECTRONIC DOCUMENTATION

Cell Infusion Document

- Electronic Documentation use to increase data capture compliance
- Reports used to confirm volumes/statistics and accuracy of data captured in database.
 - Report 1: Complete vs Incomplete
Type of Transplant
 - Report 2: Detailed Data Query



EXAMPLES

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	BMT Cell Infusion Notes Entered into ClinDOC												
2													
3	<i>Produced by DataLine</i>												
4	Documents created prior to 2014-01-22 8:41:35 AM which are still marked as either incomplete or pending signature												
5	MRN	Patient Name	Authored Date/Time	Pending Signature	Authored By	Authored Role	Signed by Author	Co-signer	Co-signer Role	Signed by Co-signer	Visit Location	Incomplete	
6	██████████	██████████	2013-12-04 17:30:00	No	██████████	MD	Yes				Chemo 1275 Unit	Yes	
7	██████████	██████████	2013-12-09 12:14:00	Yes	██████████	MD	No				ICU 12	Yes	
8	██████████	██████████	2013-12-09 13:35:00	Yes	██████████	MD	No				M 1226 A	Yes	
9	██████████	██████████	2014-01-14 15:30:00	No	██████████	NP	Yes				ICU 16	Yes	
10	██████████	██████████	2014-01-15 12:44:00	No	██████████	NP	Yes				ICU 16	Yes	
11	██████████	██████████	2014-01-15 18:37:00	No	██████████	PA	Yes	██████████	MD	Yes	M 826 A	Yes	
12													
13	Documents created between Jan 22, 2014 and Jan 29, 2014												
14	MRN	Patient Name	Authored Date/Time	Pending Signature	Authored By	Authored Role	Signed by Author	Co-signer	Co-signer Role	Signed by Co-signer	Visit Location	Incomplete	Cell Infusion Type (when indicated on ClinDoc)
15	██████████	██████████	2014-01-22 10:34:00	No	██████████	NP	Yes	██████████	MD	Yes	M 1536 A	No	Autologous progenitor cells
16	██████████	██████████	2014-01-22 13:52:00	No	██████████	PA	Yes	██████████	MD	Yes	M 1428 A	No	Autologous progenitor cells
17	██████████	██████████	2014-01-22 15:03:00	No	██████████	PA	Yes	██████████	MD	Yes	M 801 A	No	Allogeneic progenitor cells
18	██████████	██████████	2014-01-22 18:37:00	No	██████████	MD	Yes				M 1439 A	No	Autologous progenitor cells
19	██████████	██████████	2014-01-22 18:37:00	No	██████████	NP	Yes				M 1439 A	No	Autologous progenitor cells
20	██████████	██████████	2014-01-23 13:25:00	No	██████████	NP	Yes	██████████	MD	Yes	Chemo 1275	No	Autologous progenitor cells
21	██████████	██████████	2014-01-22 14:21:00	No	██████████	MD	Yes				BM Med 1275	No	Allogeneic peripheral blood lymphocytes
22	██████████	██████████	2014-01-23 14:00:00	No	██████████	NP	Yes	██████████	MD	Yes	M 1407 A	No	Allogeneic peripheral blood lymphocytes
23	██████████	██████████	2014-01-23 16:40:00	No	██████████	NP	Yes	██████████	MD	Yes	M 1439 A	No	Autologous progenitor cells
24	██████████	██████████	2014-01-24 15:25:00	No	██████████	MD	Yes				M 929 A	No	Allogeneic peripheral blood lymphocytes
25	██████████	██████████	2014-01-24 18:08:00	No	██████████	NP	Yes	██████████	MD	Yes	M 818 A	No	Allogeneic progenitor cells
26	██████████	██████████	2014-01-25 18:28:00	No	██████████	MD	Yes				M 836 A	No	Allogeneic progenitor cells
27	██████████	██████████	2014-01-25 18:28:00	No	██████████	NP	Yes				M 836 A	No	Allogeneic progenitor cells
28	██████████	██████████	2014-01-27 14:10:00	No	██████████	NP	Yes	██████████	MD	Yes	M 021 A	No	Autologous progenitor cells
29	██████████	██████████	2014-01-27 15:50:00	No	██████████	NP	Yes	██████████	MD	Yes	M 836 A	No	Allogeneic progenitor cells
30	██████████	██████████	2014-01-28 13:37:00	Yes	██████████	NP	Yes	██████████	MD	No	BM Med 1275	Yes	Allogeneic peripheral blood lymphocytes
31	██████████	██████████	2014-01-28 15:23:00	Yes	██████████	NP	Yes	██████████	MD	No	BM Med 1275	Yes	Allogeneic peripheral blood lymphocytes

Report 1



Memorial Sloan Kettering Cancer Center

EXAMPLES

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Cell Infusion Documents Report														
2	Reporting Date Range : Jan 20, 2014 - Jan 29, 2014														
3	Patient MRN : All Patients														
4	MRN	Patient Name	Authored Date	Authored By	Document Status	Cell Source	Donor	Cell Infusion Type	Manipulation	Method	Total Volume	CD34 NUM	CD34 exponent	CD3 NUM	CD3 exponent
5	[Barcode]	[Barcode]	Jan 27, 2014	[Barcode]	Completed	Peripheral Blood		Autologous progenitor cells	None		60	4.45	6		
6	[Barcode]	[Barcode]	Jan 20, 2014	[Barcode]	Completed	DLI	Unrelated	Allogeneic peripheral blood lymphocytes	Cryopreserved/Thawed		60			1	6
7	[Barcode]	[Barcode]	Jan 22, 2014	[Barcode]	Completed	Peripheral Blood		Autologous progenitor cells	None		242ml	1.53	6		
8	[Barcode]	[Barcode]	Jan 23, 2014	[Barcode]	Completed	Peripheral Blood		Autologous progenitor cells	None		108ml	0.36	6		
9	[Barcode]	[Barcode]	Jan 22, 2014	[Barcode]	Completed	Peripheral Blood	Related	Allogeneic progenitor cells	Cryopreserved/Thawed	T Cell Depleted	10 ml	5.99	6	2.42	3
10	[Barcode]	[Barcode]	Jan 24, 2014	[Barcode]	Completed	Peripheral Blood	Unrelated	Allogeneic progenitor cells	None	Unmodified	250ml	6.23	6	1.29	8
11	[Barcode]	[Barcode]	Jan 20, 2014	[Barcode]	Completed	Peripheral Blood		Autologous progenitor cells	None		46mL	6.4	6		
12	[Barcode]	[Barcode]	Jan 22, 2014	[Barcode]	Completed	Peripheral Blood	Related	Allogeneic progenitor cells	None	Unmodified	415	7.14	6	1.2	8
13	[Barcode]	[Barcode]	Jan 25, 2014	[Barcode]	Completed	Peripheral Blood	Related	Allogeneic progenitor cells	Other: CD34 enrichment	T Cell Depleted	10	4.4	6	1.34	3
14	[Barcode]	[Barcode]	Jan 27, 2014	[Barcode]	Completed	Peripheral Blood	Related	Allogeneic progenitor cells	Cryopreserved/Thawed	T Cell Depleted	10	1.28	4	0.39	3
15	[Barcode]	[Barcode]	Jan 22, 2014	[Barcode]	Completed	Peripheral Blood		Autologous progenitor cells	Other: plasma reduced		108	4.48	6		
16	[Barcode]	[Barcode]	Jan 22, 2014	[Barcode]	Completed	Peripheral Blood		Autologous progenitor cells	None		108mL	8.7	6		
17	[Barcode]	[Barcode]	Jan 20, 2014	[Barcode]	Completed	Peripheral Blood		Autologous progenitor cells	None		168ml	4.18	6		
18	[Barcode]	[Barcode]	Jan 23, 2014	[Barcode]	Completed	Peripheral Blood		Autologous progenitor cells	None		100ml	6.1	6		
19	[Barcode]	[Barcode]	Jan 20, 2014	[Barcode]	Completed	Peripheral Blood		Autologous progenitor cells	Washed Other: thawed, reconstitutive		200 mL	5.17	6		
20															

Report 2



QUALITY IN ELECTRONIC DOCUMENTATION

Cell Infusion Document

○ Ways to Use Document Reports

— Compliance Audit

- Are all notes completed/signed out

— Statistic Report

- How many Autologous vs Allogeneic
- How many Related vs Unrelated

— Quality Audit

- How many infusion include cell dose less than 2×10^6 CD34+?



ELECTRONIC MEDICAL RECORDS

In addition to the Electronic Documentation, the Electronic Medical Record can be used to extract data and support quality improvement.



QUALITY IN ELECTRONIC MEDICAL RECORD

- Sources to Extract Data
 - Laboratory Orders
 - Laboratory Results
 - Medication Orders
 - Patient Care Orders
 - Flowsheets



EXAMPLES

Stem Cell Collection/Processing - CLINDOC, Batman

CLINDOC, Batman
 Periop-Main PACU
Allergies: ****Latex***, Peroxide

Order: Allo HPC Collection/Processing Order ID:

Requested By: Collum, Karen Template Name:

Messages:

Patient Measurements

Height (cm)	Weight (kg)	BSA
200	120	2.56
01/22/2014 10:12	01/22/2014 10:12	

Patient Blood Type: Blood Type Comments:

DONOR:

Donor Weight (kg):	Donor Blood Type:	Donor Diagnosis:	Type of HSCT:
75	O Neg	Allogeneic Donor	Primary HSCT
Relationship to Patient:	If Related, Donor Name:	If Related, Donor MRN:	
Sister	Catwomen	1234567	
Protocol:	Autologous Blood Unit Collected:	TDT Testing DONOR within 30 days:	
Off Protocol	N/A (PBPC)	Reviewed and positive, approved for collection	

Hep B Surface Antigen Hep B Core Hep C Antibody Hep C PCR HIV 1/2 Antibody
 HIV 1 PCR HTLV 1/2 Chagas RPR West Nile Virus

COLLECTION:

Component Needed:	PBPC Targeted Total #CD34 x10e6 Cells/kg
HPC, Apheresis	5 x 10e6

PROCESSING:

Component Needed:	Targeted #CD34 x 10e6 Cells/kg:	Cell Processing:	Final Volume of Progenitor Specimen:
HPC, Apheresis	5x 10e6	CD34+	50ml

Processing Special Instructions:

Allogeneic Collection/Processing Order

EXAMPLES

CLINDOC, Catwoman		
M 1220 B		
Allergies: No known allergies		
Order:	Allo Final Eligibility Donor	
Requested By:	Collum, Karen	
Messages:		
Stem Cell Source:	Donor Eligibility:	
HPC, Apheresis	Donor is Ineligible	
Health History Screening <input type="checkbox"/>	Physical Assessment <input type="checkbox"/>	Medical Records <input type="checkbox"/>
Testing not w/in 7days of TCell Coll <input type="checkbox"/>	Testing not w/in 30days of BM or PBPC <input type="checkbox"/>	Reactive Test Result <input checked="" type="checkbox"/>
Hep B Surface Antigen <input checked="" type="checkbox"/>	Hep B Core <input checked="" type="checkbox"/>	Hep C Antibody <input type="checkbox"/>
Hep C PCR <input type="checkbox"/>	HIV 1/2 Antibody <input type="checkbox"/>	HIV 1 PCR <input type="checkbox"/>
HTLV 1/2 <input type="checkbox"/>	Chagas <input type="checkbox"/>	RPR <input type="checkbox"/>
West Nile Virus <input type="checkbox"/>		
Comments:		
Ordering Clinician:	Pager #:	
Karen Collum, Administration		
Requested For	Time/Priority:	
01/28/2014	Routine	

Allogeneic Donor Eligibility Order



QUALITY IN ELECTRONIC MEDICAL RECORD

- Information can be extracted based on the Order Name or content of the order
 - Example: Allogeneic Collection/Processing Order
 - How many orders were placed?
 - Were the orders placed 48 hours prior to Collection?
 - Example: Allogeneic Donor Eligibility Order
 - How many orders were placed?
 - How many donors were Ineligible?



EXAMPLES

	A	B	C	D	E	F	G
1	CL4168 - Cytotherapy Orders Detail Report for Week of Sunday, January 19, 2014 to Saturday, January 25, 2014						
2	MRN	Patient Name	Ordering Physician	Order Name	Enter DateTime	Release DateTime	Order Status
3				Auto Final Eligibility Patient	1/20/2014 8:14:23 AM	1/20/2014 8:15:50 AM	AUC1 - Completed/Expired
4				Auto HPC Collection/Processing	1/20/2014 8:14:23 AM	1/20/2014 8:15:50 AM	AUA1 - Pending Auto-Completion
5				Allo HPC Collection/Processing	1/20/2014 9:42:36 AM	1/20/2014 9:42:36 AM	AUC1 - Completed/Expired
6				Allo DLI Thaw Order	1/20/2014 9:46:25 AM	1/20/2014 9:46:25 AM	AUC1 - Completed/Expired
7				Allo HPC Collection/Processing	1/20/2014 9:48:32 AM	1/20/2014 9:48:32 AM	AUC1 - Completed/Expired
8				Allo DLI Thaw Order	1/20/2014 10:11:18 AM	1/20/2014 10:11:27 AM	AUC1 - Completed/Expired
9				Allo Final Eligibility Patient	1/20/2014 10:14:11 AM	1/21/2014 4:16:15 PM	AUC1 - Completed/Expired
10				Allo DLI Thaw Order	1/20/2014 10:14:57 AM	1/20/2014 10:15:05 AM	AUC1 - Completed/Expired
11				Allo DLI Collection/Processing Order	1/20/2014 10:47:52 AM	1/20/2014 10:48:11 AM	AUC1 - Completed/Expired
12				Allo Final Eligibility Patient	1/20/2014 12:23:24 PM		HOLD - Hold
13				Allo HPC Collection/Processing	1/20/2014 12:30:31 PM	1/20/2014 12:30:47 PM	AUC1 - Completed/Expired
14				Allo HPC Collection/Processing	1/20/2014 12:34:19 PM	1/20/2014 12:34:30 PM	AUC1 - Completed/Expired
15				Allo HPC Collection/Processing	1/20/2014 1:07:16 PM	1/20/2014 1:07:27 PM	AUC1 - Completed/Expired
16				Allo DLI Collection/Processing Order	1/20/2014 6:10:42 PM	1/21/2014 11:34:43 AM	AUC1 - Completed/Expired
17				Auto Final Eligibility Patient	1/20/2014 6:30:02 PM	1/20/2014 6:30:20 PM	AUC1 - Completed/Expired
18				Auto HPC Collection/Processing	1/20/2014 6:30:02 PM	1/20/2014 6:30:20 PM	AUA1 - Pending Auto-Completion
19				Allo Final Eligibility Donor	1/21/2014 9:31:18 AM	1/23/2014 10:59:46 AM	AUC1 - Completed/Expired
20				Allo HPC Collection/Processing	1/22/2014 10:25:48 AM	1/22/2014 10:26:21 AM	AUC1 - Completed/Expired
21				Allo Final Eligibility Patient	1/22/2014 10:27:12 AM	1/22/2014 10:27:20 AM	AUC1 - Completed/Expired
22				Allo HPC Collection/Processing	1/22/2014 11:06:02 AM	1/22/2014 11:06:14 AM	AUC1 - Completed/Expired
23				Auto HPC Thaw	1/22/2014 12:00:08 PM	1/22/2014 12:00:18 PM	AUA1 - Pending Auto-Completion
24				Auto HPC Thaw	1/22/2014 12:00:08 PM	1/22/2014 12:00:22 PM	AUA1 - Pending Auto-Completion

Report 1 – Order Name



QUALITY IN ELECTRONIC MEDICAL RECORD

○ Audit Example

4th Quarter Results

- Orders Received same day or After product collected: **16%**
(15% in 3rd Quarter)
- Orders Received 24 hours or more before product received: 85%
- Collection/Orders cancelled: 16 orders (This also includes 'duplicate' orders)

TOTALS		
Data Breakdown	Number	Percentage
Late (after product collected)	1	1%
Day of Collection	18	15%
24 hours prior	17	14%
>24 hours prior	87	71%
Cancelled	16	
Total	139	100%



EXAMPLES

	A	B	C	D	E	F	G	H	I	J	K	L
	MRN	Last Name	First Name	Age	Enter Date	Order name	User	User Role	Requested For	Released Date	Stem Cell Source	Eligibility
1					11/25/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/15/2013	12/5/2013	HPC, Apheresis	Donor is Ineligible
2					12/5/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/05/2013	12/9/2013	HPC, Apheresis	Donor is Ineligible
3					12/5/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/22/2013	12/19/2013	HPC, Apheresis	Donor is Eligible
4					12/9/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/16/2013	12/11/2013	HPC, Apheresis	Donor is Ineligible
5					12/13/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/14/2013	12/17/2013	HPC, Apheresis	Donor is Eligible
6					12/13/2013	Allo Final Eligibility Donor		Attending	12/13/2013	12/13/2013	HPC, Apheresis	Donor is Ineligible
7					12/15/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/15/2013	12/16/2013	HPC, Apheresis	Donor is Ineligible
8					12/17/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/17/2013	12/17/2013	HPC, Apheresis	Donor is Eligible
9					12/19/2013	Allo Final Eligibility Donor		Attending	12/19/2013		HPC, Marrow	Donor is Eligible
10					12/21/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/21/2013	12/21/2013	HPC, Apheresis	Donor is Eligible
11					12/30/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/30/2013	12/30/2013	HPC, Apheresis	Donor is Eligible
12					12/30/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/30/2013	12/30/2013	HPC, Apheresis	Donor is Eligible
13					12/30/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/30/2013	12/30/2013	HPC, Apheresis	Donor is Eligible

Report 2 – Order Content

EXAMPLES

	A	B	C	D	E	F	G	H	I	J	K	L
	MRN	Last Name	First Name	Age	Enter Date	Order name	User	User Role	Requested For	Released Date	Stem Cell Source	Eligibility
1					11/25/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/15/2013	12/5/2013	HPC, Apheresis	Donor is Ineligible
2					12/5/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/05/2013	12/9/2013	HPC, Apheresis	Donor is Ineligible
3					12/5/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/22/2013	12/19/2013	HPC, Apheresis	Donor is Eligible
4					12/9/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/16/2013	12/11/2013	HPC, Apheresis	Donor is Ineligible
5					12/13/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/14/2013	12/17/2013	HPC, Apheresis	Donor is Eligible
6					12/13/2013	Allo Final Eligibility Donor		Attending	12/13/2013	12/13/2013	HPC, Apheresis	Donor is Ineligible
7					12/15/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/15/2013	12/16/2013	HPC, Apheresis	Donor is Ineligible
8					12/17/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/17/2013	12/17/2013	HPC, Apheresis	Donor is Eligible
9					12/19/2013	Allo Final Eligibility Donor		Attending	12/19/2013		HPC, Marrow	Donor is Eligible
10					12/21/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/21/2013	12/21/2013	HPC, Apheresis	Donor is Eligible
11					12/30/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/30/2013	12/30/2013	HPC, Apheresis	Donor is Eligible
12					12/30/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/30/2013	12/30/2013	HPC, Apheresis	Donor is Eligible
13					12/30/2013	Allo Final Eligibility Donor		Nurse Practitioner	12/30/2013	12/30/2013	HPC, Apheresis	Donor is Eligible

Report 2 – Order Content

EXAMPLES

	A	B	C	D	E	F	L	M	N	O
	MRN	Last Name	First Name	Age	Enter Date	Order name	Eligibility	Health History Screening	Testing not w/in 7days of TCell	Testing not w/in 30days of BM or PBPC
1										
2	██████████	██████████	██████████	██████████	11/25/2013	Allo Final Eligibility Donor	Donor is Ineligible		X	
3	██████████	██████████	██████████	██████████	12/5/2013	Allo Final Eligibility Donor	Donor is Ineligible		X	
4	██████████	██████████	██████████	██████████	12/5/2013	Allo Final Eligibility Donor	Donor is Eligible			
5	██████████	██████████	██████████	██████████	12/9/2013	Allo Final Eligibility Donor	Donor is Ineligible		X	
6	██████████	██████████	██████████	██████████	12/13/2013	Allo Final Eligibility Donor	Donor is Eligible			
7	██████████	██████████	██████████	██████████	12/13/2013	Allo Final Eligibility Donor	Donor is Ineligible	X		
8	██████████	██████████	██████████	██████████	12/15/2013	Allo Final Eligibility Donor	Donor is Ineligible			X
9	██████████	██████████	██████████	██████████	12/17/2013	Allo Final Eligibility Donor	Donor is Eligible			
10	██████████	██████████	██████████	██████████	12/19/2013	Allo Final Eligibility Donor	Donor is Eligible			
11	██████████	██████████	██████████	██████████	12/21/2013	Allo Final Eligibility Donor	Donor is Eligible			
12	██████████	██████████	██████████	██████████	12/30/2013	Allo Final Eligibility Donor	Donor is Eligible			
13	██████████	██████████	██████████	██████████	12/30/2013	Allo Final Eligibility Donor	Donor is Eligible			



Reasons for Ineligible as documented on the order

Report 2 – Order Content

CONCLUSION

- Electronic documentation should not be reproductions of paper forms.
- Utilize features of electronic system to enhance documentation and create smarter documents
 - Dropdown/multi-select checkboxes create data that can be extracted
 - Calculation logic for dates
 - Documentation reminders/notification alerts



CONCLUSION

- Identifying areas in the EMR where data in entered/captured will allow for development of reports for quality review.
- Reports have the ability to be conditional and repetitious



CONCLUSION

- Report Types
 - Delivered – Excel/PDF
 - Time based (weekly, quarterly)
 - On Demand/Self generated
 - Parameter based
 - Content pre built
 - Time frame variable



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 - Especially the DARWIN Team



QUESTIONS

