

Usage Patterns of a Web-based Application Integrating Cancer Registry Data into Survivorship Care Plans

Robin Vanderpool, Bront Davis,
Emily Dressler, Jason Jacob,
and Isaac Hands

NAACCR St. Louis – June 15, 2016

Funded through NCI: P30CA177558

**Kentucky
Cancer
Registry**

UK
UNIVERSITY OF
KENTUCKY
College of Public Health



A Cancer Center Designated by the
National Cancer Institute

*Markey Cancer Center is Kentucky's only
NCI-designated cancer center.*

Cancer Survivorship Care Planning

“Every cancer survivor should have a comprehensive care summary and follow-up plan once they complete their primary cancer care that reflects their treatment and addresses a myriad of post-treatment needs to improve their health and quality of life.”

Background

- ACOS CoC-accreditation requirements (Standard 3.3)
 - SCPs required for patients who are treated with curative intent and have complete active therapy → tx summary and f/up care plan

2015	2016	2017	2018
10%	25%	50%	75%

- Need to increase health facilities' capacity to generate & deliver SCPs
 - Data from electronic sources may enhance reliability and validity of information included in SCPs, and improve staff efficiency and effectiveness in preparing them
 - Tools and assistance from external organizations can help cancer programs implement new standard

Background

- KCR developed a web-based application that exports relevant data from the Cancer Patient Data Management System (CPDMS) into *Journey Forward*, providing a SCP starter-template for healthcare staff
- UK Markey Cancer Center pilot grant awarded to evaluate implementation of KCR application (Jan 2015)
 - Collaboration between UK, KCR, KCC, and 3 case study sites in central and eastern KY



St. Claire Regional
Medical Center



BAPTIST HEALTH

KING'S
DAUGHTERS
MEDICAL CENTER



- (Free) Site-specific templates available for breast, colon, lung, and lymphoma; a customizable generic template is available for other types of cancers
- Components of a *JF* SCP:
 - Care team information
 - Background information on diagnosis, staging, comorbid conditions
 - Treatment summary
 - Schedule for follow-up care (i.e., surveillance)
 - Psychosocial assessment
 - Information on symptom management, late effects of treatment

The CPDMS-*Journey Forward* Application: How it works

- Approximately, 25% the fields in each *JF* template can be prepopulated from CPDMS data.
- Users may query patients using data included in cancer abstracts such as MRN, SSN, pt name, dates, stage, etc.
- Once a patient(s) is identified, there is an export feature that exports relevant CPDMS into the chosen *JF* template
- The template can then be opened in the *JF* software program securely on a user's local computer for completion and additional tailoring.

Create Preliminary SCP History

Search Criteria for Patients

Choose Facility: TRAINING DATABASE (90201)

Care Plan Vendor: Journey Forward

First Name:

SSN: SSN1, SSN2,...

Date of Diagnosis:

Care Plan Template:

Last Name: Goodlife

Start Date: 01/01/2010

Generic

End Date:

Lung

Stage: Stage 0

MRN: MRN1, MRN2,...

Date of 1st Contact:

Colon

Stage I

Start Date:

Breast

Stage II

End Date:

Lymphoma

Stage III

Stage IV

Search Registry for Patients

Reset Search Criteria

Patient List

Create

Download

SSN	MRN	First Name	Last Name	DateCompleted	Care Plan Template	Created
000022909	QMCPG1	HADA	GOODLIFE	2010/07/07	Breast	
000026122	UFZBHL	HADA	GOODLIFE	2012/07/12	Breast	
000028574	ACC4HAR	HADA	GOODLIFE	2013/12/30	Breast	

Create Preliminary SCP History

Search Criteria for Patients

Choose Facility: TRAINING DATABASE (90201) Care Plan Vendor: Journey Forward

First Name: Last Name: goodlife

Stage: Stage 0 Stage I Stage II Stage III Stage IV

SSN: SSN1, SSN2,... MRN: MRN1, MRN2,...

Date of Diagnosis: Start Date: 01/01/2010 End Date: Date of 1st Contact: Start Date: End Date:

Care Plan Template: Generic Lung Colon Breast Lymphoma

Search Registry for Patients Reset Search Criteria

Patient List

Create Download

SSN	MRN	First Name	Last Name	DateCompleted	Care Plan Template	Created
000022909	QMQPG1	HADA	GOODLIFE	2010/07/07	Breast	2015-03-31 12:02:40 (jorbis)
000026122	UFZBHL	HADA	GOODLIFE	2012/07/12	Breast	2015-03-31 12:03:35 (jorbis)
000028574	ACC4HAR	HADA	GOODLIFE	2013/12/30	Breast	

Care Plan Creation Success!

SUCCESS: You can download the 1 SCP reports now.

Download

File Download

Do you want to open or save this file?

Name: JF_Breast_GOODLIFE_0000.scpb
Type: Survivorship Care Plan, 14.1KB
From: portal.kcr.uky.edu

Open Save Cancel

While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not open or save this file. [What's the risk?](#)

Cancer Survivorship Care Plan Builder

Care Plans

- New
- Open
- Save
- Print

Tools

- Regimens
- Library
- Templates
- Preferences
- User Guide
- Contact Us



Breast cancer Survivorship Care Plan for HADA GOODLIFE (TEST CARE PLAN, NOT FOR PATIE...

[General information](#) | [Background information](#) | [Treatment plan](#) | [Treatment summary](#) | [Follow-up care](#)

Care plan prepared by:

Care plan prepared on:

Practice site:

Patient name:

Medical record number:

Patient phone (home):

Patient phone (cell):

Patient email:

Age at diagnosis:

Date of birth:

Care Team

	Name	Phone	Email
Support contact	<input type="text"/>	<input type="text"/>	<input type="text"/>
Hematologist/oncologist	<input type="text"/>	<input type="text"/>	<input type="text"/>
General/breast surgeon	<input type="text"/>	<input type="text"/>	<input type="text"/>
Radiation oncologist	<input type="text"/>	<input type="text"/>	<input type="text"/>
Plastic surgeon	<input type="text"/>	<input type="text"/>	<input type="text"/>
Primary care physician	<input type="text"/>	<input type="text"/>	<input type="text"/>
OB-GYN	<input type="text"/>	<input type="text"/>	<input type="text"/>
Nurse/nurse practitioner	<input type="text"/>	<input type="text"/>	<input type="text"/>
Mental health/social worker	<input type="text"/>	<input type="text"/>	<input type="text"/>
Coordination of care	<input type="text"/>	<input type="text"/>	<input type="text"/>

Create Preliminary SC

Search Criteria for Pati

Choose Facility:

First Name:

Last Name:

Stage: Stage I
 Stage II
 Stage III
 Stage IV
 Stage V

Patient List

SSN	MRN
000022909	QMCPG
000026122	UFZBHKL
000028574	ACC4HA

Cancer Survivorship Care Plan Builder

Create Preliminary SCP | History

Search Criteria for Patients

Choose Facility: TRAINING DATA

First Name:

Last Name: goodlife

Stage: Stage 0
 Stage I
 Stage II
 Stage III
 Stage IV

Search Registry for Patients | Res

Patient List

Create

SSN	MRN	Fi
000022909	QMCPG1	HA
000026122	UFZBHL	HA
000028574	ACC4HAR	HA

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Breast cancer Survivorship Care Plan for HADA GOODLIFE (TEST CARE PLAN, NOT FOR PATIE...)

General information | Background information | Treatment plan | Treatment summary | Follow-up care

Affected breast(s) **Right**

Definitive breast surgery date

Breast surgery type

Sentinel node biopsy Yes No

Biopsy date

Axillary dissection Yes No

of lymph nodes removed

of lymph nodes positive

Tumor type **INFILTRATING DUCT C.**

T stage **T1b**

N stage **N0**

Pathologic stage **IA**

Oncotype DX recurrence score

ER status Positive Negative

PR status Positive Negative

HER2 status Positive Negative

Family history

Genetic testing

Other health concerns

Pre-treatment echocardiogram/MUGA EF = %

Additional comments



Cancer Survivorship Care Plan Builder

Create Preliminary SCP **History**

Search Criteria for Patients

Choose Facility: TRAINING DATA

First Name:

Last Name: goodlife

- Stage:
- Stage 0
 - Stage I
 - Stage II
 - Stage III
 - Stage IV

Search Registry for Patients Res

Patient List

Create

SSN	MRN	First Name
000022909	QMQPG1	HA
000026122	UFZBHL	HA
000028574	ACC4HAR	HA

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Breast cancer Survivorship Care Plan for HADA GOODLIFE (TEST CARE PLAN, NOT FOR PATIE...)

General information | Background information | **Treatment plan** | Treatment summary | Follow-up care

Chemotherapy start date: 01/01/2014

Height: _____ in

Pre-treatment weight: _____ lb

Last pre-treatment menstruation: _____

Pre-operative chemo administered: Yes No

Regimen: _____

Biologic therapy planned: Yes No

Treatment on clinical trial: Yes No

Possible side effects of regimen: _____

Radiation therapy planned: Yes No

Reconstruction planned: Yes No

Endocrine therapy planned: _____

Pre-treatment comments: _____

Logout

Download

Cancer Survivorship Care Plan Builder

Create Preliminary SCP History

Search Criteria for Patients

Choose Facility: TRAINING DATA

First Name:

Last Name: goodlife

Stage: Stage 0
 Stage I
 Stage II
 Stage III
 Stage IV

Search Registry for Patients Res

Patient List

Create

SSN	MRN	First Name
000022909	QMCPG1	HA
000026122	UFZBHL	HA
000028574	ACC4HAR	HA

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Breast cancer Survivorship Care Plan for HADA GOODLIFE (TEST CARE PLAN, NOT FOR PATIE...

General information | Background information | Treatment plan | Treatment summary | Follow-up care

Chemotherapy end date: 01/01/2014

Post-treatment weight: lb

Last post-treatment menstruation:

Biologic therapy administered: Yes No

Pre-biologic therapy ejection fraction: %

Most recent ejection fraction: %

Biologic therapy treatment dates: 03/31/2014 - 03/31/2014

Serious toxicities during treatment:

Hospitalization for toxicities: Yes No

Neurotoxicity that impairs activities: Yes No

Reason for stopping chemotherapy:

Disease status at end of treatment:

Growth factor given: Yes No

Radiation completed: Yes No Date: 03/31/2014

Radiation dose:

Reconstruction completed: Yes No

Endocrine therapy start date:

Post-treatment comments:

Cancer Survivorship Care Plan Builder

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MCM0001692600

Breast cancer Survivorship Care Plan for HADA GOODLIFE (TEST CARE PLAN, NOT FOR PATIE...

[General information](#) | [Background information](#) | [Treatment plan](#) | [Treatment summary](#) | [Follow-up care](#)

Needs, Concerns & Suggested Interventions

Chief need or concern Depression

- Bone health/osteoporosis risk**
 - Bone densitometry every 1 to 2 years after initiation of aromatase inhibitor (if applicable) and/or at age 65 or older
 - Calcium and Vitamin D
 - Weight-bearing exercise
 - Avoidance of smoking/smoking cessation counseling, if appropriate
 - Bisphosphonate, if indicated per bone densitometry
- Hot flashes**
 - Venlafaxine (Effexor) 37.5mg up to 75 mg daily OR Gabapentin (Neurontin) 300mg at bedtime up to 3 times/day OR referral to gynecologist
- Clinical breast exam status**
 - General anxiety
 - Screening for other cancers
 - Fatigue
 - Lymphedema
 - Joint aches and pains
 - Pain with intercourse/vaginal dryness
 - Marital/partner/family relationships
 - Genetic risk
 - Wellness (e.g., diet, exercise, smoking cessation)
- Depression**
 - Referral for psychiatric care or counseling and/or initiation of pharmacotherapy
- Weight gain or overweight**
 - BMI: 0.0 m² (weight change of 0 lb)
- Mammography status**
 - Annual mammography needed
- Concerns about risk of recurrence
- Insomnia
- Memory problems and/or confusion
- Decreased range of motion in shoulder
- Other persistent pain
- Intimacy and sexuality
- Fertility
- Employment, health insurance, finances

* Suggested interventions provided by the UCLA Survivorship Center.

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Create Preliminary SCP History

Search Criteria for Patients

Choose Facility: TRAINING DATA

First Name:

Last Name: goodlife

- Stage:
- Stage 0
 - Stage I
 - Stage II
 - Stage III
 - Stage IV

Search Registry for Patients Results

Patient List

Create

SSN	MRN	File
000022909	QMMPG1	HA
000026122	UFZBHL	HA
000028574	ACC4HAR	HA

Logout

Download

Cancer Survivorship Care Plan Builder

Create Preliminary SCP | History

Refresh Delete

History

Created
2015/03/31 12:12:46 (jorbis)
2015/03/31 12:03:35 (jorbis)
2015/03/31 12:02:40 (jorbis)

Care Plans

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- Open
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Breast cancer Survivorship Care Plan for HADA GOODLIFE (TEST CARE PLAN, NOT FOR PATIE...)

General information | Background information | Treatment plan | Treatment summary | Follow-up care

Needs, Concerns & Suggested Interventions

Print Options

Print Survivorship Care Plan
Patient: HADA GOODLIFE (TEST CARE PLAN, NOT FOR PATIENT USE)
DOB: 7/27/1947

Documents listed below will be included with this Care Plan.

(No documents selected)

Full care plan Abridged

- Joint aches and pains
- Pain with intercourse/vaginal dryness
- Marital/partner/family relationships
- Genetic risk
- Wellness (e.g., diet, exercise, smoking cessation)
- Decreased range of motion in shoulder
- Other persistent pain
- Intimacy and sexuality
- Fertility
- Employment, health insurance, finances

* Suggested interventions provided by the UCLA Survivorship Center.

< Previous

Logout

Download

Create Preliminary CP History

Refresh Delete

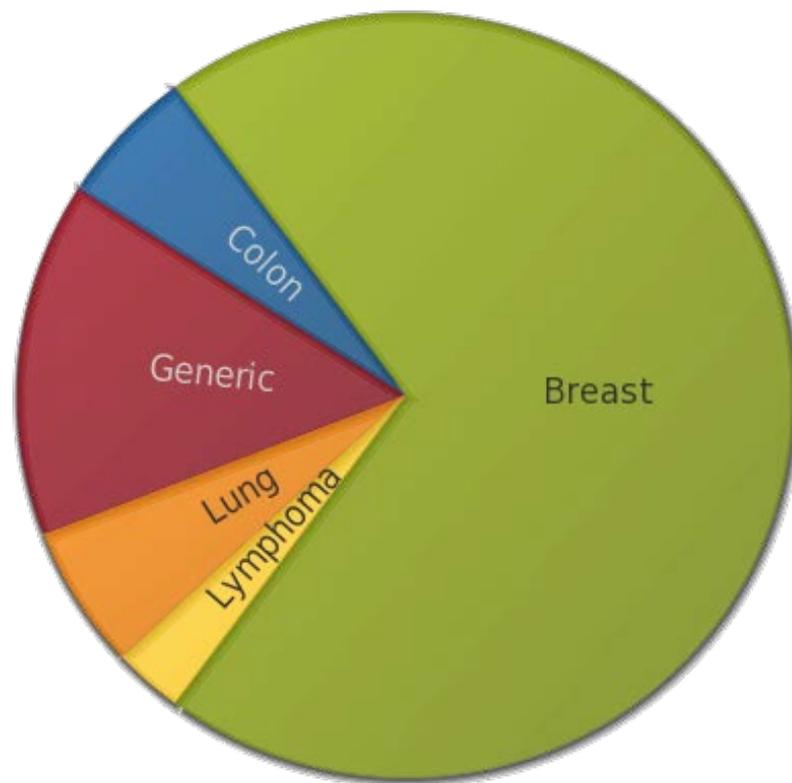
Download

History

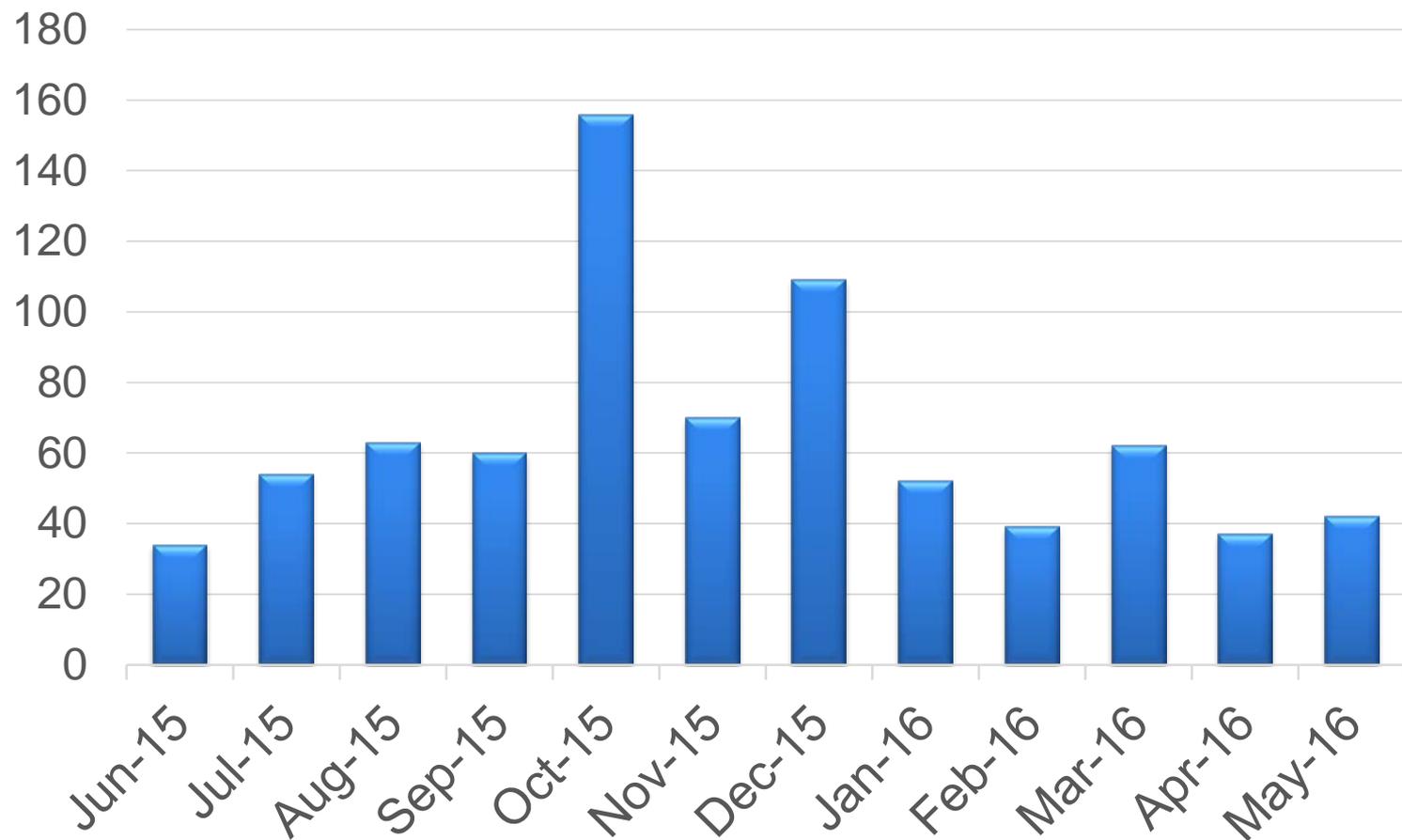
Created	Care Plan Template..	SSN	MRN	First Name	Last Name	DateCompleted
2015/03/31 12:03:35 (jorbis)	Breast	000026122	UFZBHL	HADA	GOODLIFE	2012/07/12
2015/03/31 12:02:40 (jorbis)	Breast	000022909	QMCPG1	HADA	GOODLIFE	2010/07/07

Application Usage (June 2015-May 2016)

- 778 total SCPs have been generated
 - 70% created for breast cancer (n=546)
 - 15% created using the “generic” template (n=120)
 - 84% of care plans have been created for women (n=657)
 - The average patient age at SCP creation is 61 years.



SCP Generated Per Month



Median number of plans created was 57 (range 34-156);
increases in SCP generation in Oct and Dec 2015
(156 and 109 plans, respectively)

Application Usage (June 2015-May 2016)

- 460 individual patients
 - 324 patients have had 1 report generated
 - 121 patients have had 2-5 reports generated
 - 15 patients have had >6 reports generated
 - Likely user practice / test cases
- Almost 2/3 of SCP (n=492, 63%) were created within 1-year of the patient's date of diagnosis, aligning with overall CoC guidelines.
 - Similarly, the average number of years between age at diagnosis and age at SCP generation was 1.44.

Application Users

- 48 individuals representing 19 Kentucky hospitals have requested access to the application:
 - ✓ 15 hospitals are CoC-accredited
 - ✓ 8 hospitals are MCC Affiliate Network members
 - ✓ 4 hospitals are MCC Research Network members
 - ✓ 7 hospitals are located in Appalachian KY
 - ✓ 3 hospitals account for 46% of SCP generated to date
 - ✓ 66% (n=32) of application users are cancer registrars; the remainder are nurses and other hospital staff.

Conclusions

- Almost 800 total SCPs have been generated since the statewide launch of the KCR application in June 2015.
- Development of the application was a significant undertaking, but has resulted in a new method for prepopulating SCP with registry data that may ease logistical burdens that KY hospitals face in meeting CoC-accreditation requirements.
- Additional qualitative and quantitative data collection and analysis will allow us to assess trends over time and continue to make application improvements.