SKIN CANCER SCREENING AT UPMC

Laura K. Ferris, MD, PhD
Associate Professor of Dermatology

UPMC

UNIVERSITY OF PITTSBURGH
VERITAS 1787 VIRTUS

UPMC

- **Largest health care system in Western PA**
- 21+ hospitals with >5,100 licensed beds
- More than 500 outpatient sites
- More than 3.9 million outpatient visits annually
  - 61% medical-surgical market share in Allegheny County
  - 41% medical-surgical market share in western Pennsylvania (29 counties)
- 5,500 affiliated physicians, including 3,500 employed by UPMC
- **UPMC Insurance Services Division**
  - More than 2.5 million members covered by UPMC Insurance Services products

http://www.upmc.com/about/facts/numbers/Pages/default.aspx

The Vision

- Modeled after Schleswig-Holstein experience
- Designed as a “Quality Initiative” and not as research
- Collaborative effort: oncology, dermatology, UPMC Health Plan, UPMC administration, medical informatics, public health and epidemiology
- Screening performed by PCPs, annually, on patients 35 year and older
- PCPs trained in the identification of skin cancer (melanoma and NMSC)
- Screening performed as part of routine wellness or physical exams
- Use of the integrate EHR to alert clinicians of eligible patients by adding to the health maintenance module
- Unique aspects:
  - PCP vs patient initiation of screening
  - PCP determines disposition of patient with concerning lesion: biopsy vs refer
  - PCP not compensated for screening
  - Quality initiative, not research- no tracking of screening outcomes at level of individual patient
  - Ability to get some health care utilization data from UPMC Health Plan

PCP TRAINING

- UPMC-employed PCPs were invited to participate
- Information about skin cancer diagnosis and discussion of intervention occurred at series of town hall style meetings prior to start of screening
- PCPs were invited take INFORMED training, an on-line course designed to improve early detection of melanoma and SCC, BCC
- Previous validation study, among PCPs at 2 sites who completed INFORMED:
  - Mean score for appropriate diagnosis / management increased from 36.1% to 46.7% (OR, 1.6; 95% confidence interval, 1.4-1.9)
  - Dermatology referrals for suspicious lesions or new visits by participants' patients decreased at both sites after the course (from 630 to 607 and from 726 to 266, respectively)

❖http://www.skinsight.com/info/for_professionals/dermatology-education-resources

J Am Board Fam Med. 2013 Nov-Dec;26(6):648-57.

OUTCOME MEASURES

- # screen-eligible patients seen by PCPs
- Disposition of screen-eligible patients
  - Screened
  - Patient declined
- Demographics of screened population
- Impact of INFORMED training on screening by PCPs
- Differences in heath care utilization by population targeted for screening vs. control population among those patients with UPMC Health Plan
- Melanoma depth in UPMC melanoma tumor registry pre vs. post initiation of screening
- Procedures preformed by PCPs during visits in which screening occurred
- New diagnoses of melanoma and other skin cancers subsequent to screening

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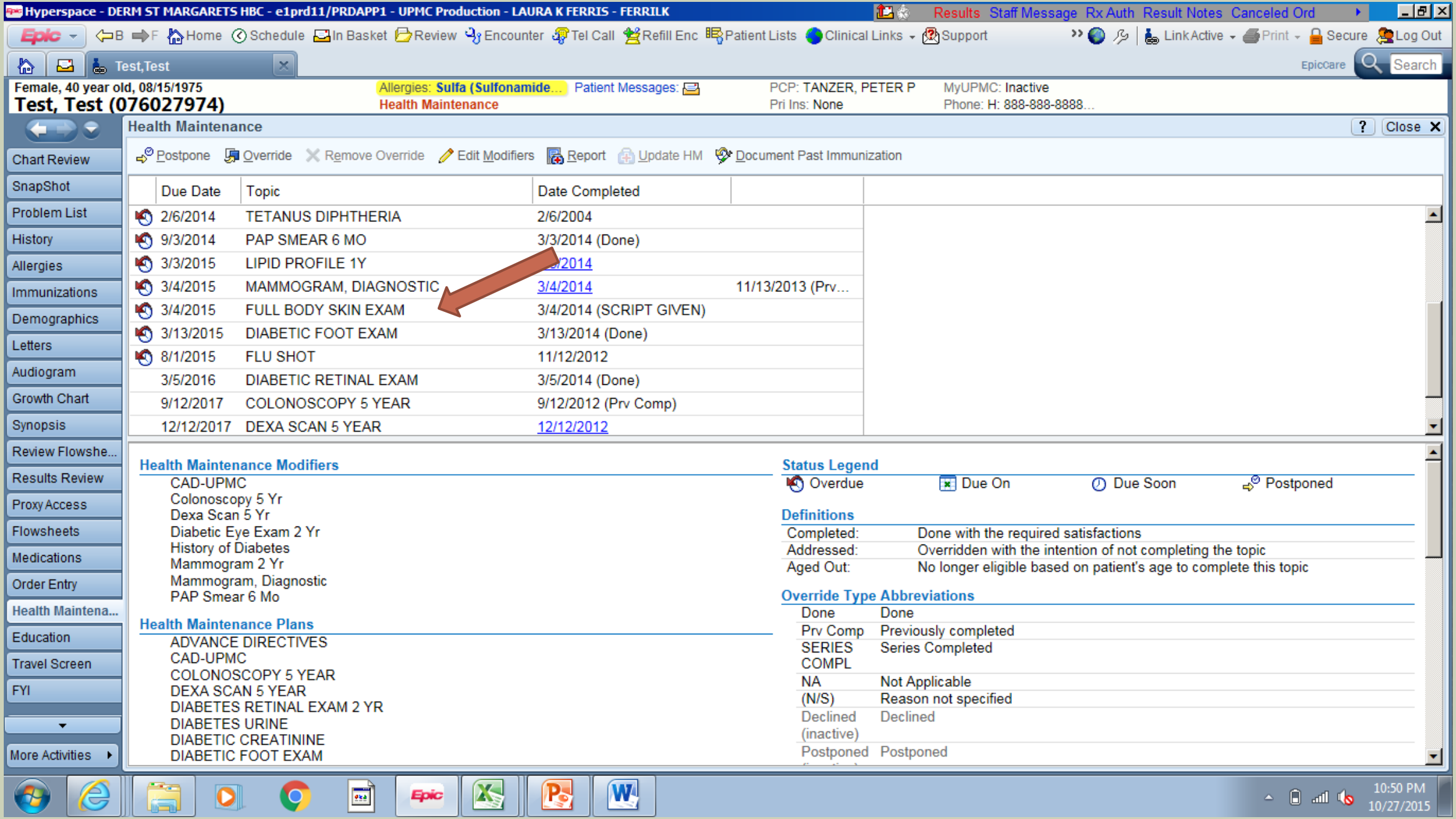
Hyperspace - DERM ST MARGARETS HBC - e1prd11/PRDAPP1 - UPMC Production - LAURA K FERRIS - FERRILK
Results Staff Message Rx Auth Result Notes Canceled Ord
Epic B F Home Schedule In Basket Review Encounter Tel Call Refill Enc Patient Lists Clinical Links Support Link Active Print Secure Log Out
Test,Test
EpicCare Search
Female, 40 year old, 08/15/1975
Test, Test (076027974)
Allergies: Sulfa (Sulfonamide...
Patient Messages:
Health Maintenance
PCP: TANZER, PETER P
Pri Ins: None
MyUPMC: Inactive
Phone: H: 888-888-8888...
Health Maintenance
Close
Postpone Override Remove Override Edit Modifiers Report Update HM Document Past Immunization
Due Date Topic Date Completed
2/6/2014 TETANUS DIPHTHERIA 2/6/2004
9/3/2014 PAP SMEAR 6 MO 3/3/2014 (Done)
3/3/2015 LIPID PROFILE 1Y /2014
3/4/2015 MAMMOGRAM, DIAGNOSTIC 3/4/2014 11/13/2013 (Prv...
3/4/2015 FULL BODY SKIN EXAM 3/4/2014 (SCRIPT GIVEN)
3/13/2015 DIABETIC FOOT EXAM 3/13/2014 (Done)
8/1/2015 FLU SHOT 11/12/2012
3/5/2016 DIABETIC RETINAL EXAM 3/5/2014 (Done)
9/12/2017 COLONOSCOPY 5 YEAR 9/12/2012 (Prv Comp)
12/12/2017 DEXA SCAN 5 YEAR 12/12/2012
Chart Review
SnapShot
Problem List
History
Allergies
Immunizations
Demographics
Letters
Audiogram
Growth Chart
Synopsis
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Results Review
Proxy Access
Flowsheets
Medications
Order Entry
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Education
Travel Screen
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More Activities
Health Maintenance Modifiers
CAD-UPMC
Colonoscopy 5 Yr
Dexa Scan 5 Yr
Diabetic Eye Exam 2 Yr
History of Diabetes
Mammogram 2 Yr
Mammogram, Diagnostic
PAP Smear 6 Mo
Health Maintenance Plans
ADVANCE DIRECTIVES
CAD-UPMC
COLONOSCOPY 5 YEAR
DEXA SCAN 5 YEAR
DIABETES RETINAL EXAM 2 YR
DIABETES URINE
DIABETIC CREATININE
DIABETIC FOOT EXAM
Status Legend
Overdue Due On Due Soon Postponed
Definitions
Completed: Done with the required satisfactions
Addressed: Overridden with the intention of not completing the topic
Aged Out: No longer eligible based on patient's age to complete this topic
Override Type Abbreviations
Done Done
Prv Comp Previously completed
SERIES COMPL Series Completed
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(N/S) Reason not specified
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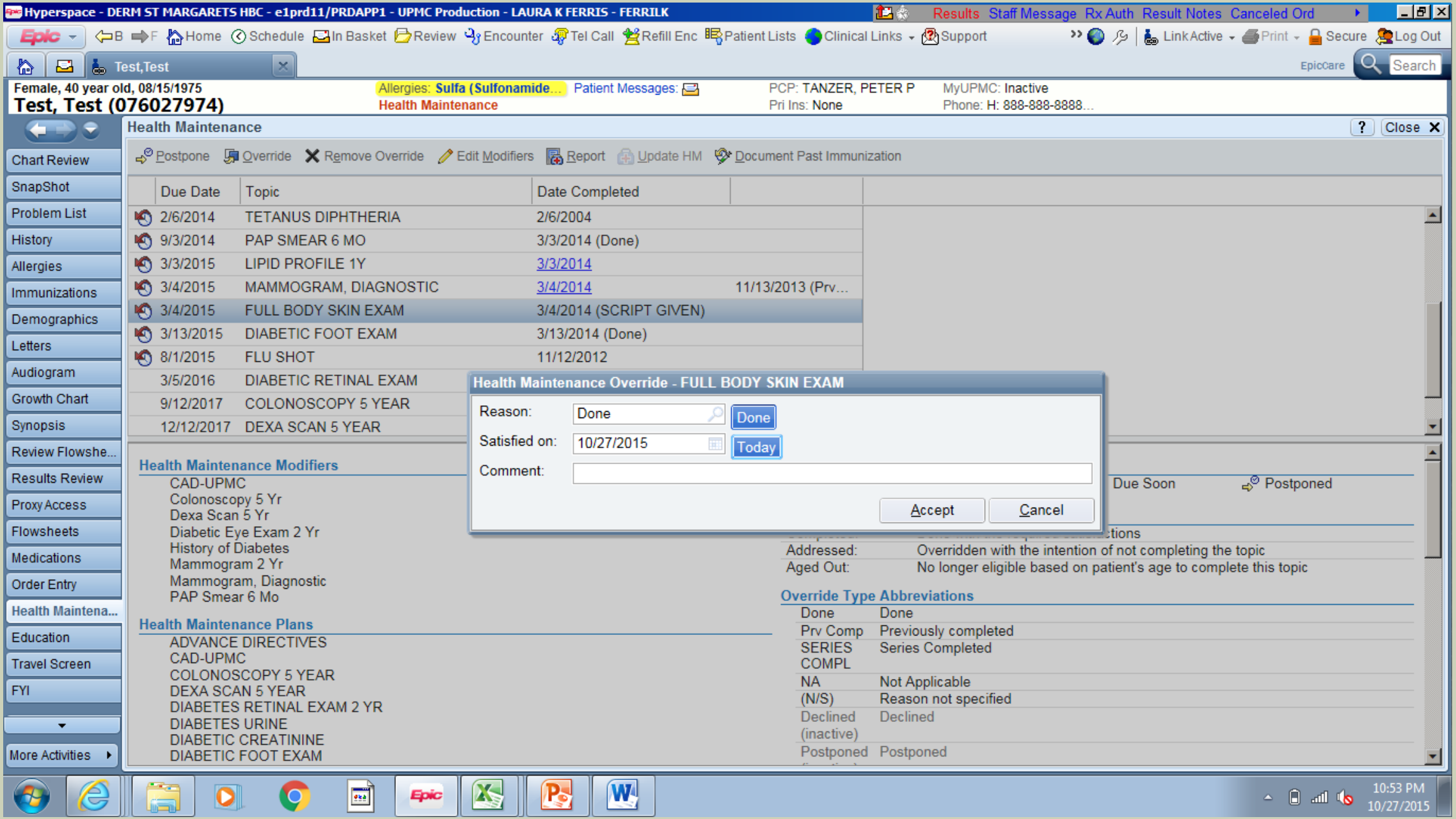
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SCREENING RATES (2014)

- Screening was initiation in January 2014
- Screen-eligible population (327,569 unique individuals) defined as:
  - Adult age 35 years or older
  - Presenting for “routine office visit or physical”
  - Not screened in past 12 months
- Screening rates for 2014:
  - 52,882 unique individual screened (16.1% of adults age 35 years or older seen by a UPMC PCP for an office visit at least once in CY2014)
- Disposition of patients not screened
  - Primarily not noted by PCP (80% all eligible patients)
  - Low rate of patients noted as refusing screen (1.1%)

SCREENED POPULATION DEMOGRAPHICS, 2014

Sex	Females = 57.2% Males = 42.8%
F:M ratio	1.3
Age	Median age (range) = 59 years (35-91) Mean age (SD) = 59.1 years (12)
Race	90.1% white 7.4% black 0.1% Asian

INFORMED TRAINING – UPTAKE AND IMPACT

- A total of 182 physicians completed INFORMED training
- Screening rates significantly higher among physicians who completed INFORMED
  - INFORMED trained physicians:
    - PCP of record for 10.8% of patients with at least one screen-eligible
    - Performed 29.7% of all screens
    - On average screened 44.2% of eligible patients they saw
  - NON- INFORMED trained physicians:
    - PCP of record for 89.2% of patients with at least one screen-eligible
    - Performed 70.3% of all screens
    - On average screened 12.7% of eligible patients they saw
- 50% of screens were performed by the 50 highest screeners

UPMC MELANOMA REGISTRY

	2011	2012	2013	2014
Total # primary cutaneous melanomas	735	692	621	609
# melanoma in situ	112 (15.2%)	165 (23.8%)	168 (27.1%)	146 (24.0%)
# invasive melanomas with known Breslow depth	457	364	298	297
Median Breslow depth invasive melanoma (with known depth)	0.9 mm (0.1-9.67)	0.92 mm (0.1-9.5)	0.75 mm (0.1-9.2)	0.65 mm (0.1-9.0)

2014 MELANOMA CASES FROM TUMOR REGISTRY

	2014
Total # primary cutaneous melanomas	609
# melanoma in situ	146 (24.0%)
# invasive melanomas with known Breslow depth	297
Median Breslow depth invasive melanoma (with known depth)	0.65 mm (0.1-9.0)

	Screened patients
Total melanomas	21
In situ lesion (% total)	8 (38%)
Invasive lesions (% total)	13 (62%)
Median and Mean Breslow depth invasive melanoma	Median = 0.35 mm Mean = 0.49 mm (range = 0.2-1.5 mm)

13/21 melanomas (62%) detected by PCPs who did INFORMED training

5/21 melanomas (24%) detected by a doctor among top 20 highest screeners

MEASURING HARMS OF SCREENING FOR MELANOMA

Potential harms of screening:

- Easier to measure
  - ✓Cost of screening (increase in skin procedures)
  - ✓Undue patient anxiety
  - ✓Scaring from biopsies
- More challenging to measure
  - False positives (can define as detection of “indolent” melanoma or as biopsy of benign lesions)

UPMC HEALTH PLAN- COST OF TREATING ADVANCED MELANOMA

- Cost of drugs utilized to treat melanoma by the screen-eligible population Jan 1, 2012 – Dec 31, 2014

Drug Name	Unique Member	Total Scripts	Total Paid Amount
TEMOZOLOMIDE	160	2849	$ 8,590,490
VEMURAFENIB	13	134	$ 1,442,230
IPILIMUMAB	22	72	$ 2,907,448
DABRAFENIB MESYLATE	5	78	$ 652,132
TRAMETINIB DIMETHYL SULFOXIDE	4	66	$ 644,361
PACLITAXEL	147	1397	$ 113,105
CARBOPLATIN	173	1322	$ 62,560
DACARBAZINE	3	9	$ 764
TOTAL		**5,927**	**$ 14,413,090**

UPMC HEALTH PLAN DATA

- About 30% of the screen-eligible population is covered by a UPMC Health Plan product (includes commercial, Medicare, and Medicaid plans)
- We estimate that about 15% of eligible UPMC Health Plan members were screened
- Among patients covered by UPMC Health Plan who are age 35 years and above who had a claim submitted with a CPT code for an office visit during the noted calendar year, can divide into two groups (group A or group B)
  - Group A = has a PCP in group encouraged to do INFORMED and screen (A1 = group with highest INFORMED training rate)
  - Group B = all other PCPs, not asked to do INFORMED or screen

	2012	2013	2014
GROUP A	80,539	86,215	89,507
- A1 ONLY	65,823	71,019	74,009
GROUP B	267,164	300,478	304,703

SKIN PROCEDURE RATES

- Unique members with at least one skin procedure in given year by provider group for members 35 years and over who had an eligible PCP visit
- Procedures defined as CPT code for a biopsy, a lesion shaving, an excision, Mohs surgery, destruction of a malignant lesion, destruction of a premalignant lesion (any diagnosis) or a sentinel node excision (latter only if with a melanoma diagnosis)

	2012	2013	2014	% CHANGE (2012-13)	P	% CHANGE (2013-14)	P
GROUP A	8,352 (10.4%)	9,653 (11.2%)	10,005 (11.2%)	0.8%	<0.01	0%	0.9
- A1 ONLY	6,880 (10.5%)	8,001 (11.3%)	8,318 (11.2%)	0.8%	<0.01	0%	0.87
GROUP B	26,296 (9.8%)	30,611 (10.2%)	29,542 (9.7%)	0.3%	<0.01	-0.5%	<0.01

DERMATOLOGY VISITS

- Unique members with at least one claim for a visit to a dermatologist in given year by provider group for members 35 years and over who had an eligible PCP visit

	2012	2013	2014	% CHANGE (2012-13)	% CHANGE (2013-14)
GROUP A	13,364 (16.6%)	14,979 (17.4%)	16,076 (18.0%)	0.8%	0.6%
- A1 ONLY	10,915 (16.6%)	12,341 (17.4%)	13,338 (18.0%)	0.8%	0.6%
GROUP B	32,844 (12.3%)	37,700 (12.5%)	38,521 (12.6%)	0.2%	0.1%

CLAIMS ASSOCIATED WITH A DIAGNOSIS OF MELANOMA

- Unique individuals with at least one claim with a primary diagnosis of melanoma for given year by provider group for members 35 years and over who had an eligible PCP visit

	2012	2013	2014
GROUP A	292 (0.36%)	282 (0.33%)	323 (0.36%)
- A1 ONLY	249 (0.38%)	236 (0.33%)	270 (0.36%)
GROUP B	724 (0.27%)	818 (0.27%)	872 (0.29%)

Identified Skin Procedure Groups	% of Group A and Group B Members	
	GROUP A	GROUP B
Biopsy	8.4%	5.0%
Lesion Shaving	3.4%	1.1%
Excision	28.5%	29.6%
Mohs Surgery	9.9%	4.4%
Destruction Malignant	1.2%	0.8%
Destruction Premalignant	3.7%	1.9%
Sentinel Lymph Node	5.9%	8.6%

MEASURING PATIENT OUTCOMES AFTER SCREENING

- Telephone survey ongoing among patients who were screened to determine
  - Embarrassment due to screening
  - Anxiety about being diagnosed with skin cancer, getting skin biopsy
  - General symptoms of anxiety (worry, sleep loss, disturbance of relationships)
  - If referred for biopsy, what is plan to follow through and what was outcome?
  - Patient perception of disfigurement due to biopsy
  - Likelihood of
    - undergoing future screening
    - performing self-examination of skin
    - using sun protection strategies
- Repeated in 6 months to see if these factors persist

LESSONS LEARNED

- Multidisciplinary team is critical (dermatology, primary care, melanoma specialists, informatics, public health, statistician, payer representative, medical administration, EHR representative)
  - Early involvement of all from the start of the planning process
  - May be easier to roll out with a pilot group than on a larger scale
  - Do you have dermatologists to see the screen-positive patients?
- Maximize PCP involvement and buy in
  - Consider how to track which PCPs are asked to train and who completes training
  - Determine if you want only trained vs all PCPs to screen
  - Consider some sort of incentive other than the intrinsic reward of doing what is right
  - Realize you are asking them to do a screening not recommended by the USPSTF
  - Realize they are asked to address so many issues in a routine visit and you are adding to it
  - Report back on successes and results periodically
  - Ask for and use feedback to maintain interest and motivation

LESSONS LEARNED

- Figure out which outcomes you want to measure and decide how to do so before you start
  - What defines a successful intervention and how will you measure it?
  - Do you have a way to measure melanoma mortality, if this is the most important outcome?
  - Determine what defines a screen-eligible patient and visit
  - If possible engineer in simple way to note if screen was done, if a suspicious lesion was identified
- The more closed the system, the easier it will be to track outcomes
  - It is very difficult to track melanomas biopsied outside the system and this will result in under reporting of melanomas diagnosed
- Consider relative merits of quality initiative vs. IRB-approved research and value of a combined strategy
- Don’t let perfect be the enemy of good
  - Keep the process as simple as possible – from training, to exam, to documentation, to data collection

THE TEAM

- University of Pittsburgh/UPMC
  - John Kirkwood, MD
  - Laura Ferris, MD, PhD
  - Francis Solano, MD
  - Melissa Saul, MS
  - Steve Perkins, MD
  - Steven Shapiro, MD
  - Valerie Trott
  - Kathleen Slavish
- Brown University
  - Martin Weinstock, MD, PhD
  - Patricia Risica, PhD
- Harvard
  - Alan Geller, MPH, RN