2013 Clinical Program of the Year

East Ann Arbor Intraoperative Breast Cancer Management Practice

... the rewards realized from working together
Division of Surgical Oncology (SON) moved outpatient practice to East Ann Arbor Ambulatory Surgery Center ("EAA")
SON

Anesthesiology

EAA Administration

- patient education
- post-operative management
- visiting nursing

≈ 50% inpatient

≈ 100% outpatient
### Problem

<table>
<thead>
<tr>
<th>March – December, 2007</th>
<th>University Hospital</th>
<th>Cancer Center</th>
</tr>
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<tbody>
<tr>
<td>Total specimens</td>
<td>1,475</td>
<td>1,368</td>
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<tr>
<td>Frozen section specimens</td>
<td>96 (6.5%)</td>
<td>24 (1.8%)</td>
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<tr>
<td># sections/case (n = 48) (range)</td>
<td>2 ± 3.2 (1 – 22)</td>
<td>1.5 ± 0.6 (1 – 3)</td>
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</tbody>
</table>

≈ 3,300 patient specimens and 140 frozen sections (rapid intraoperative consultations) annually
Frozen Sections

A method for freezing and cutting tissue samples to support rapid microscopic interpretation for intraoperative patient management.
4.7 miles

- 6 operating rooms
- no surgical pathology laboratory
Opportunity

• Positive &/or close margins for patients undergoing breast conserving therapy (BCT) significantly influence the risk of breast cancer recurrence

• Re-excision rates for BCT range from 20-70%
Opportunity

948 patients underwent lumpectomy for invasive breast ca or DCIS

303 (32%) underwent second surgery

173 (57%) – positive margins

130 (43%) – close margins
Opportunity
Effects of Multiple Re-Excisions

- Increased patient morbidity
- Increased patient risk
- Inconvenience and cost for patient
- Increased cost/resource utilization for UMHS
Opportunity
Intraoperative Margin Evaluation

Benefits: Reduce surgery while removing all tumor and minimizing the removal of uninvolved tissue

Challenges
• rapid turnaround time
• requires dedicated, conveniently located space, equipment and personnel
• fresh breast tissue difficult to examine
Opportunity
Intraoperative Margin Evaluation

imprint cytology

specimen imaging

gross examination
Opportunity
Intraoperative Margin Evaluation

- breast has high content of adipose tissue
- fat does not freeze well at standard temperatures (-21 °C)
Opportunity

Few institutions offer FS analysis of margins (FSM) for patients undergoing BCT

Why not here?
Specimen is oriented, and . . . inked & sectioned along the long axis
Grossly suspicious areas are sampled for frozen section.

Margins sampled for FS are placed on a chuck with a minimal amount of Optimal Cutting Tissue (OCT) media.
Tissue sections immersed in liquid nitrogen ≈10 seconds
Frozen section slides are cut on a standard cryostat.
Patients with invasive carcinoma or ductal carcinoma in-situ (DCIS) who underwent BCT at EAA before and after FSM

**Cases**
All patients undergoing BCT with FSM from 8/2009 – 7/2010

**Controls**
All patients undergoing BCT without FSM from 8/2008 – 7/2009
Re-operation rate was reduced from 55.3% to 19.3%
Sentinel Lymph Node Frozen Section (SLN FS) (N=178 patients)

- SLN FS only - 72 (40%)
- SLN FS + FSM - 106 (60%)
All patients with positive SLN FS underwent completion axillary lymph node dissection (cALND) in the same procedure.
Although both FSM and SLN FS are reliable, re-operation rates were most influenced by the ability to clear margins.
Intraoperative Frozen Section Analysis of Margins in Breast Conserving Surgery Significantly Decreases Reoperative Rates

One-Year Experience at an Ambulatory Surgical Center

Julie M. Jorns, MD,1 Daniel Visscher, MD,2 Michael Sabel, MD,3 Tara Breslin, MD,3 Patrick Healy, MS,4 Stephanie Daignaut, MS,5 Jeffrey L. Myers, MD,1 and Angela J. Wu, MD1

- FSM significantly reduces re-operation rates in patients undergoing BCT
- FSM is technically feasible and can be performed with reasonable TAT
- FSM reduces re-excision rates even in patients with high risk disease (ie, multifocality, ILC subtype, and larger size)
Development of an intraoperative pathology consultation service at a free-standing ambulatory surgical center: clinical and economic impact for patients undergoing breast cancer surgery

Michael S. Sabel, M.D.\textsuperscript{a,*}, Julie M. Jorns, M.D.\textsuperscript{b}, Angela Wu, M.D.\textsuperscript{b}, Jeffrey Myers, M.D.\textsuperscript{b}, Lisa A. Newman, M.D., M.P.H.\textsuperscript{a}, Tara M. Breslin, M.D., M.S.\textsuperscript{a}

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- re-operation rates significantly reduced
- breast conservation rate increased
  90\%→94\% overall
  39\%→46\% in neoadjuvant setting
- reduction in surgical charges (CMS) $400-$800 per patient
- surgical time ↑20-30 minutes per patient, but time neutral given ↓procedures/patient
### Department of Surgery

<table>
<thead>
<tr>
<th>Name</th>
<th>Department of Pathology</th>
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<tbody>
<tr>
<td>Jessica Bensenhaver</td>
<td>Julie Jorns</td>
</tr>
<tr>
<td>Tara Breslin</td>
<td>Celina Kleer</td>
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<tr>
<td><strong>Alfred Chang</strong></td>
<td>Martin Lawlor</td>
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<tr>
<td>Vincent Cimmino</td>
<td>Dave Lucas</td>
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<td>Kathleen Diehl</td>
<td>Craig Newman</td>
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<td>Michael Mulholland</td>
<td>Christine Rigney</td>
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<tr>
<td>Lisa Newman</td>
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### UMHHC & EAA Leadership

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<tr>
<td>Anthony (“Tony”) Denton</td>
<td>P-D-C-A</td>
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<tr>
<td>Shon Dwyer</td>
<td>M HOSPITALS &amp; HEALTH CENTERS</td>
</tr>
<tr>
<td>Debbie Laubach</td>
<td>UNIVERSITY OF MICHIGAN HEALTH SYSTEM</td>
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<tr>
<td>Norah Naughton</td>
<td>. . . the rewards realized from working together</td>
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