

Multidisciplinary Cancer Management Course

Multidisciplinary Care

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Multidisciplinary Cancer Management Course

Multidisciplinary Care Team

- Collaboration as part of team on behalf of patients with cancer
- Participation, when appropriate, in clinical trials to validate new therapies
- Solicitation of opinions before rather than after any *irreversible* steps taken
- Collegial attitude, with openness, flexibility, and lack of ego

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- Prevention
- Screening and early diagnosis
- Diagnosis : -Imaging
-Tissue procurement
-Pathology
- Staging
- Treatment : **Medical Surgical Radiation**
- Rehabilitation
- Follow-up

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BIRTH

Latent period

Screening

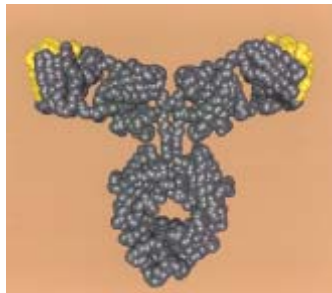
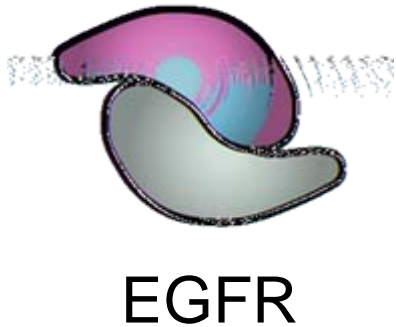
Diagnosis and Staging

Treatment

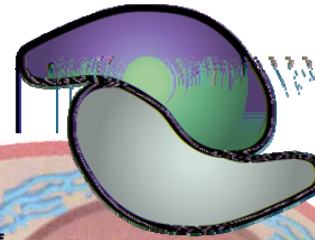
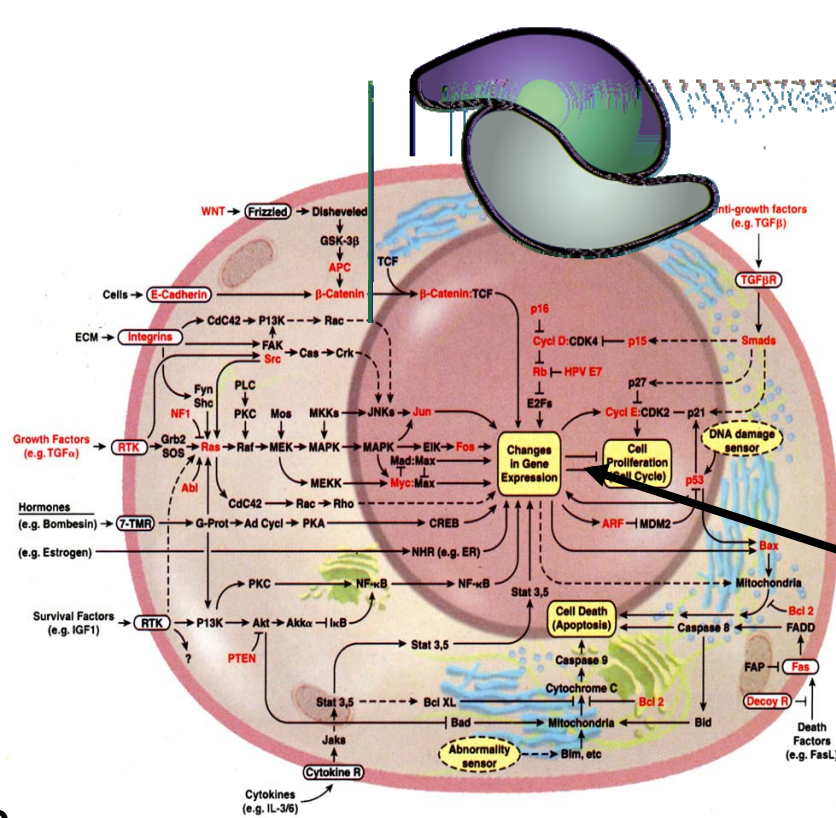
Recurrence

DEATH

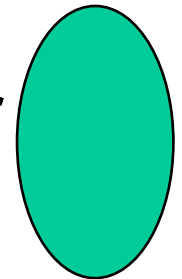
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Anti-Angiogenesis
VEGF



Her-2 Neu



ER/PR

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Members of Multidisciplinary Care Team

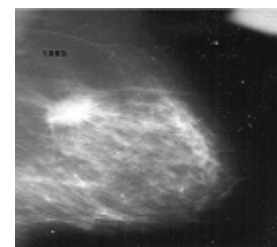
- Primary care physician
- Radiologist
- Pathologist
- Surgical oncologist
- Medical oncologist
- Radiation oncologist
- Anesthesiologist
- Psycho-oncologist
- Rehabilitation specialists
- Oncology nurse
- Oncology pharmacist
- Family members / patient advocates

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Multidisciplinary Care Team Member Tasks

Diagnostic Radiologist **IMAGING**

- Advise/select optimal imaging technique for primary cancer and detection of any metastatic tumor



Pathologist

- Interpret findings of biopsy specimen evaluation before, during, and after operation
- Facilitate molecular staging approaches
- Advise about prognosis

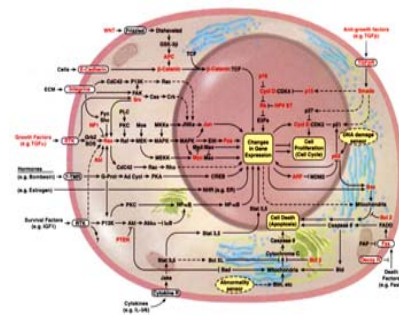


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Multidisciplinary Care Team Member Tasks

Medical Oncologist

- Advise about neoadjuvant versus adjuvant systemic approaches
- Manage symptoms related to the disease or systemic treatment
- Orchestrate palliative care



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Multidisciplinary Care Team Member Tasks

Surgical Oncologist



- Advise about tumor biopsy methods, resectability, and likelihood of achieving negative margins
- Advise about role of surgical management to stage and/or resects any regional or distant disease

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Multidisciplinary Care Team Member Tasks

Radiation Oncologist

- Advise about applicability of preoperative, intraoperative, and postoperative external beam approaches
- Help define role of brachytherapy and alternative energy sources (electron beam, protons, etc.)
- Select palliative radiation therapy options in conjunction with systemic therapy

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Role of Multidisciplinary Team Conference

- Formalizes/structures discussion about diagnosis / stage and plans for the right combination and sequence of treatment modalities (clinical trials)
- Diminishes negative impact of modality-specific bias and anecdotal experience

• *Conference creates dialogue*



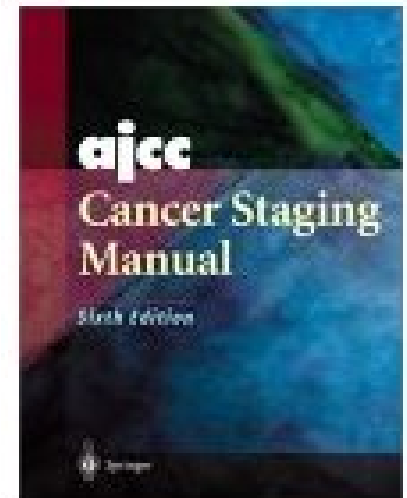
Importance of Accurate Cancer Diagnosis

- **Determines**
 - TNM stage of disease
 - Treatment (s)
 - Frequency and type of follow-up
- **Genetic counseling if needed**
- **Predicts drug toxicities and tumor response in individual patients (in the future)**

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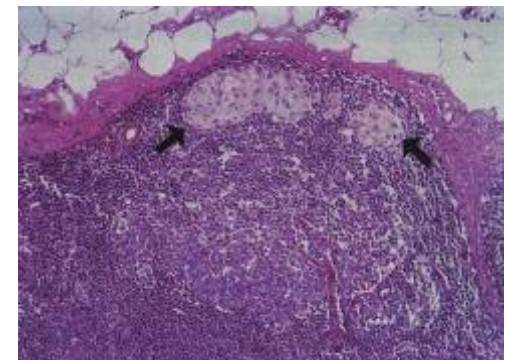
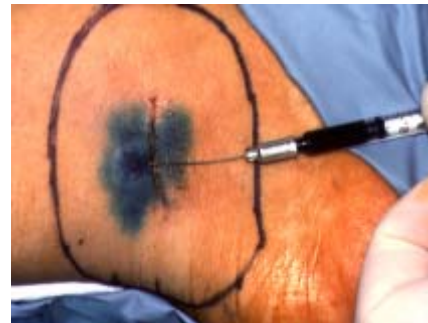
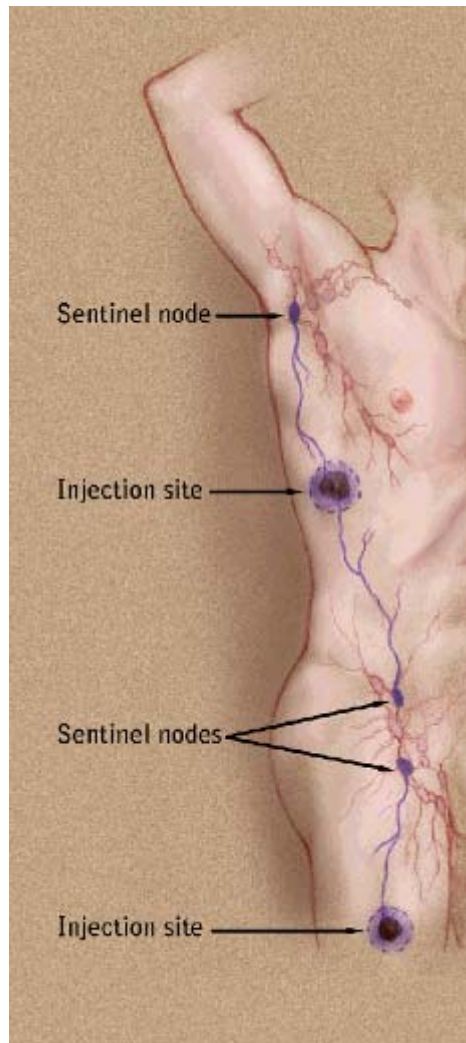
Importance of Accurate Cancer Staging

- **Factor in clinical decision-making**
- **Consistent terms and definitions for clinical outcomes**
- **Essential in design, analysis, and comparability of clinical trials**



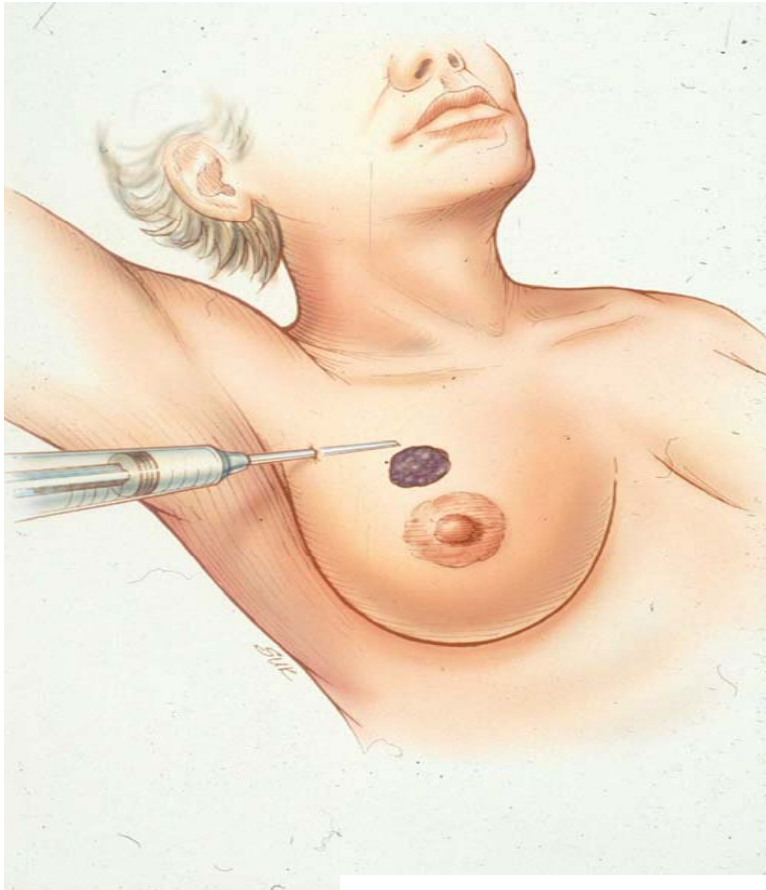
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Sentinel Lymph Node Biopsy

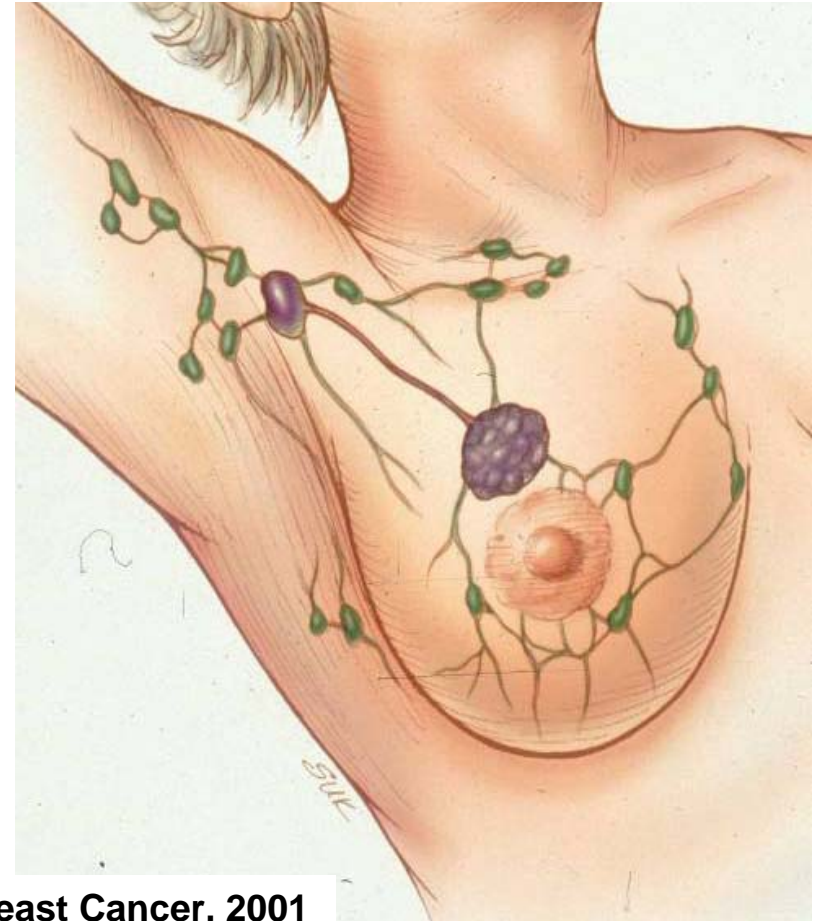


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Peritumoral injection of dye and/or radiolabelled colloid

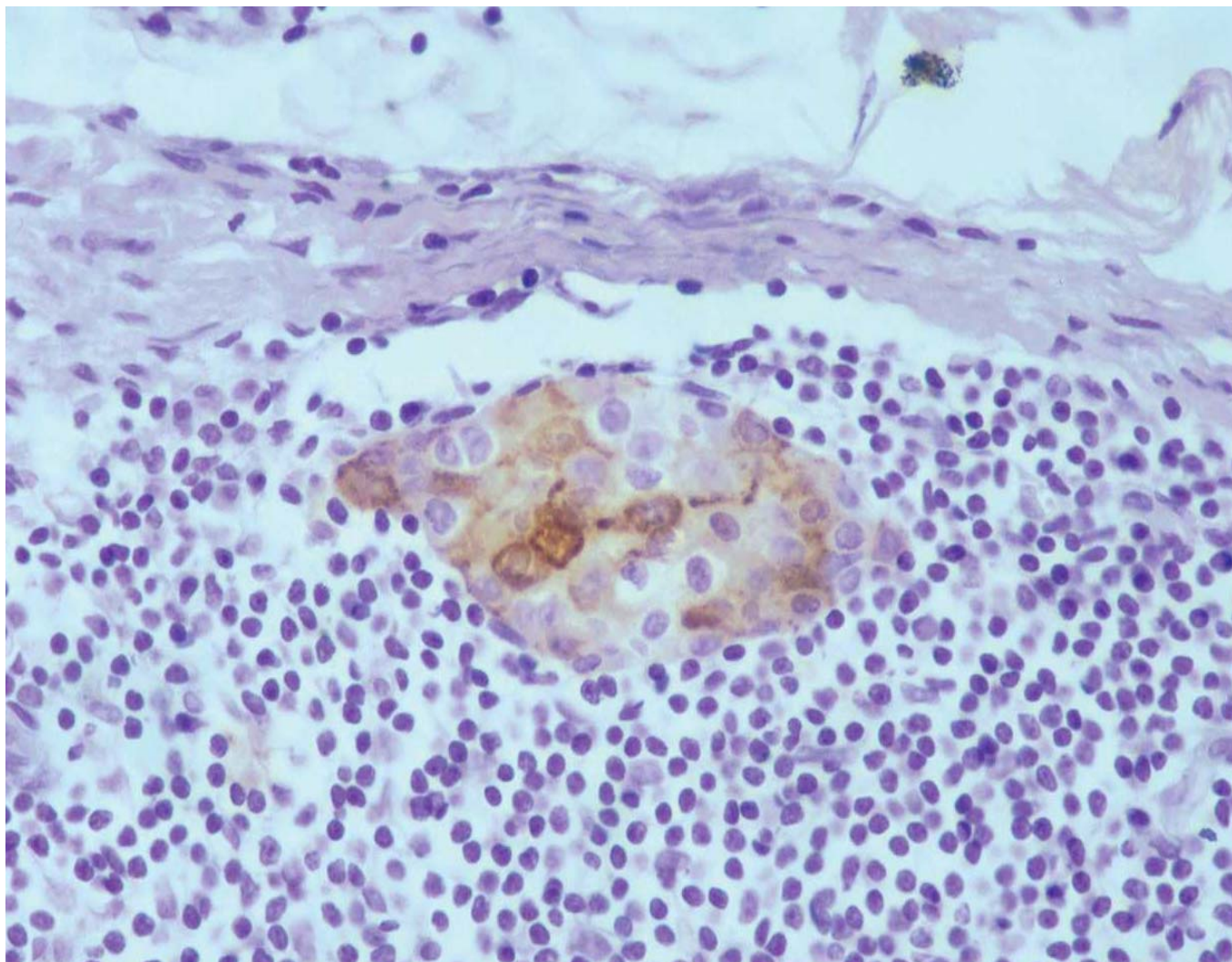


Agent travels through lymphatic channels to the sentinel lymph node



Adapted from Meric and Hunt, Breast Cancer, 2001

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Example of Multidisciplinary Panel: Breast Cancer

- **Panel members**

- **Surgeon, medical oncologist, radiation oncologist, pathologist, diagnostic radiologist**

- **Patient**

- **47-year-old woman with a five-centimeter mass in the upper outer quadrant of the right breast**

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Example of Multidisciplinary Panel: Breast Cancer

- **Diagnosis**
 - Type of biopsy (needle, core, open)
 - Tumor markers (which ones?)
- **Staging**
 - Metastatic work-up for stage IIIA breast cancer
 - Bone scan, CAT scan, MRI ,etc ?
- **Family history**
 - ? Genetic counseling and/or testing

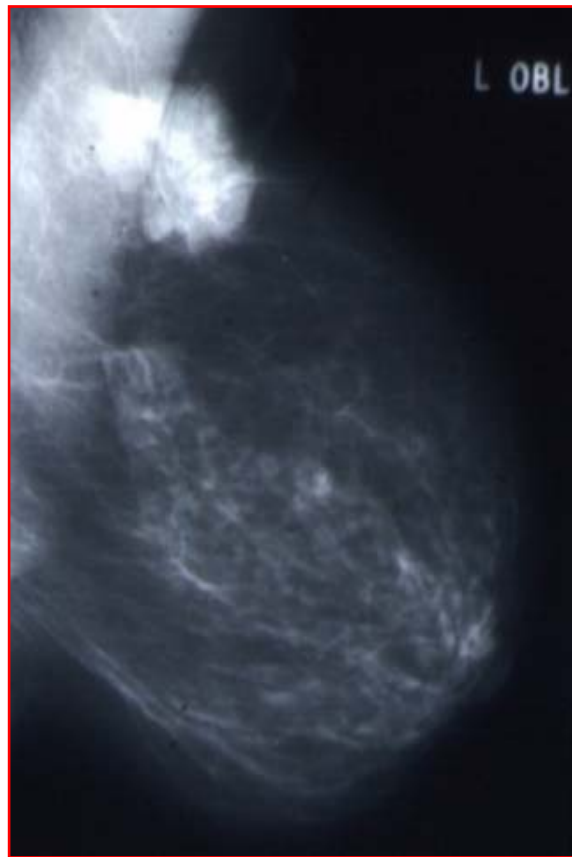
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Example of Multidisciplinary Panel: Breast Cancer

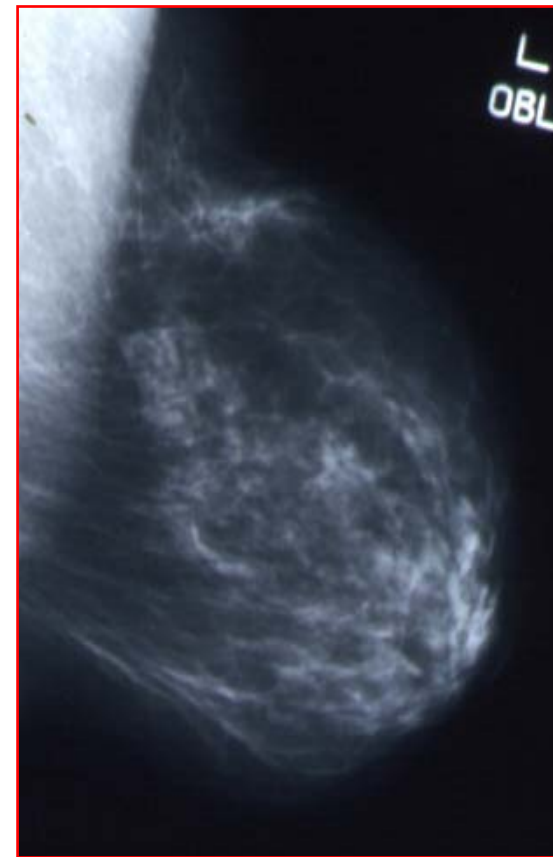
- **Treatment combinations for consideration**
 - Chemotherapy (preoperative or postoperative)
 - Breast reconstruction (immediate or delayed, flap or implant)
 - Radiation therapy
 - Hormone treatment (which agent, and duration)
- **Long-term follow-up**

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Example of Multidisciplinary Care Panel:



Before treatment



After treatment with letrozole
for three months

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Example of Multidisciplinary Care Panel:



Before neoadjuvant
chemotherapy



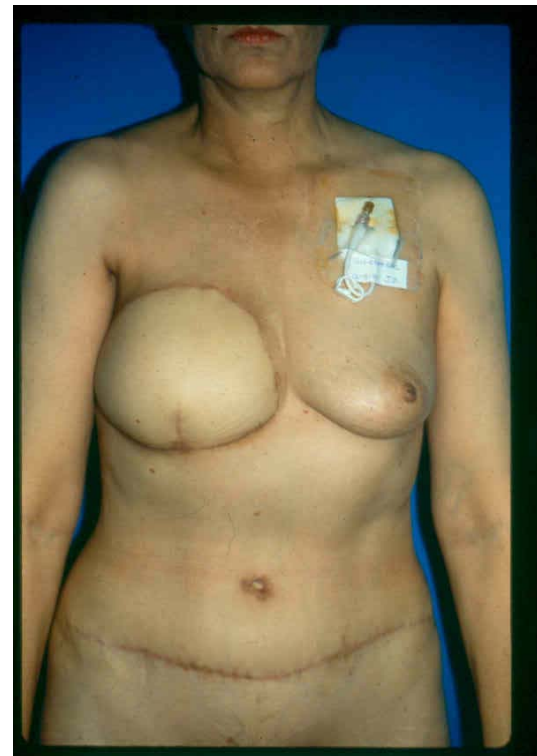
After neoadjuvant
chemotherapy

Photographs courtesy of Daniel Booser and Henry Kuerer.

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Example of Multidisciplinary Care Panel:

Mastectomy with immediate flap reconstruction for stage III disease



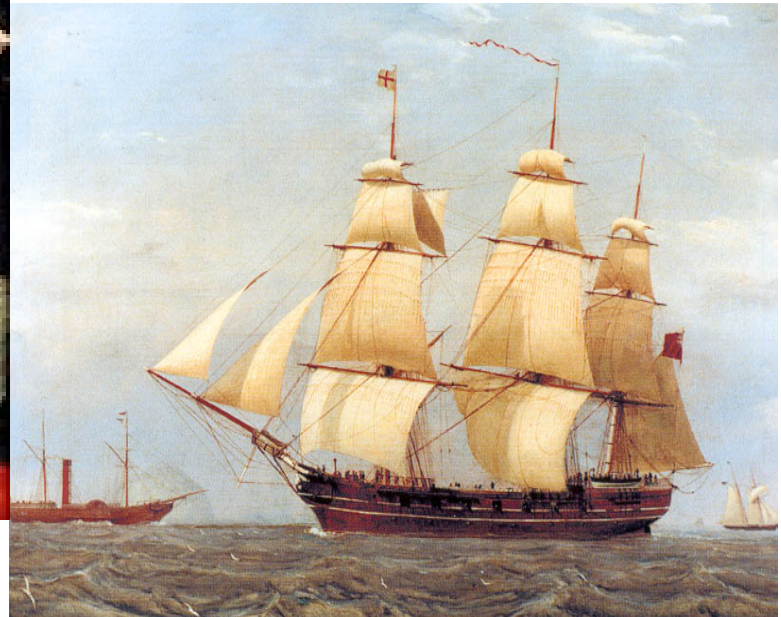
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Example of Multidisciplinary Breast Cancer



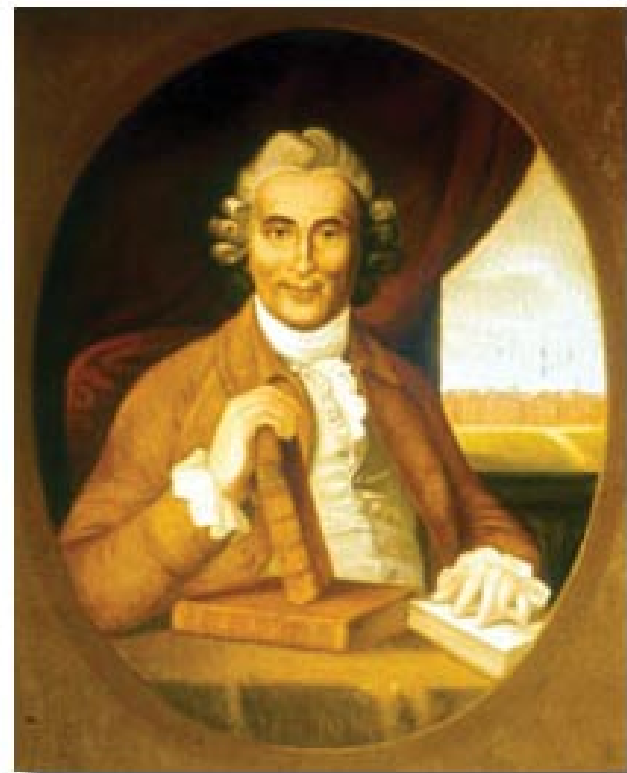
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CLINICAL TRIALS



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- 1747 Sir James Lind of the Royal Navy conducted the first known RCT
- 12 sailors with scurvy
- Treatment alternatives
 - 1 qt cider/day
 - 24 guts elixir vittriol t.i.d.
 - 2 spoons vinegar t.i.d.
 - Seawater
 - 2 oranges and 1 lemon/day
 - bigness of nutmeg



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A
T R E A T I S E
O N T H E
S C U R V Y .

I N T H R E E P A R T S .

C O N T A I N I N G

An Inquiry into the Nature, Causes,
and Cure, of that Disease.

Together with

A Critical and Chronological View of what
has been published on the Subject.

By *JAMES LIND*, M. D.

Fellow of the Royal College of Physicians in *Edinburgh*.

The SECOND EDITION corrected, with Additions
and Improvements.

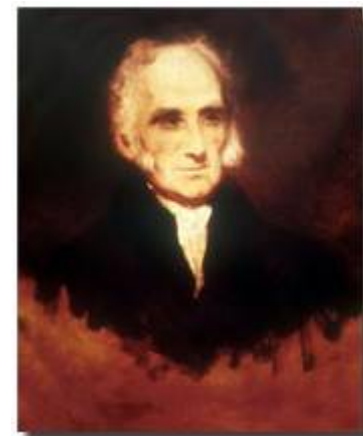
L O N D O N :

Printed for A. MILLAR in the *Strand*.
MDCCLVII.



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- In 1795 an Admiralty Order directed the regular use of **lime juice** in all ships of the British Navy. This gave them the nickname of "Limejuicers," which is now shortened to "**Limey**," the name for Englishmen in nearly every foreign country.
- Championed by **Sir Gilbert Blane**, Physician to the Fleet.
- Credibility only because Blane was a war hero!



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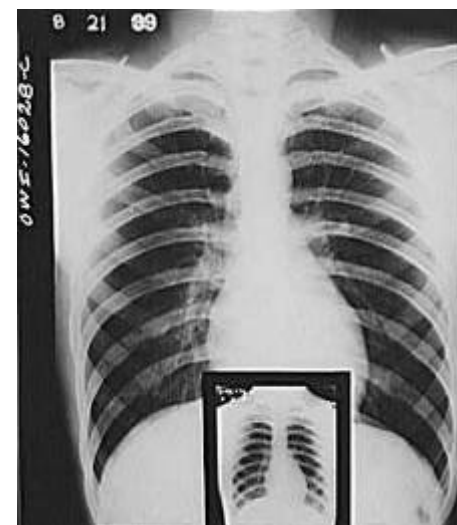
1920's and 1930's

- RCTs developed for agricultural research
- random samples of seed were planted in random plots
- Fisher and Yates were major collaborators

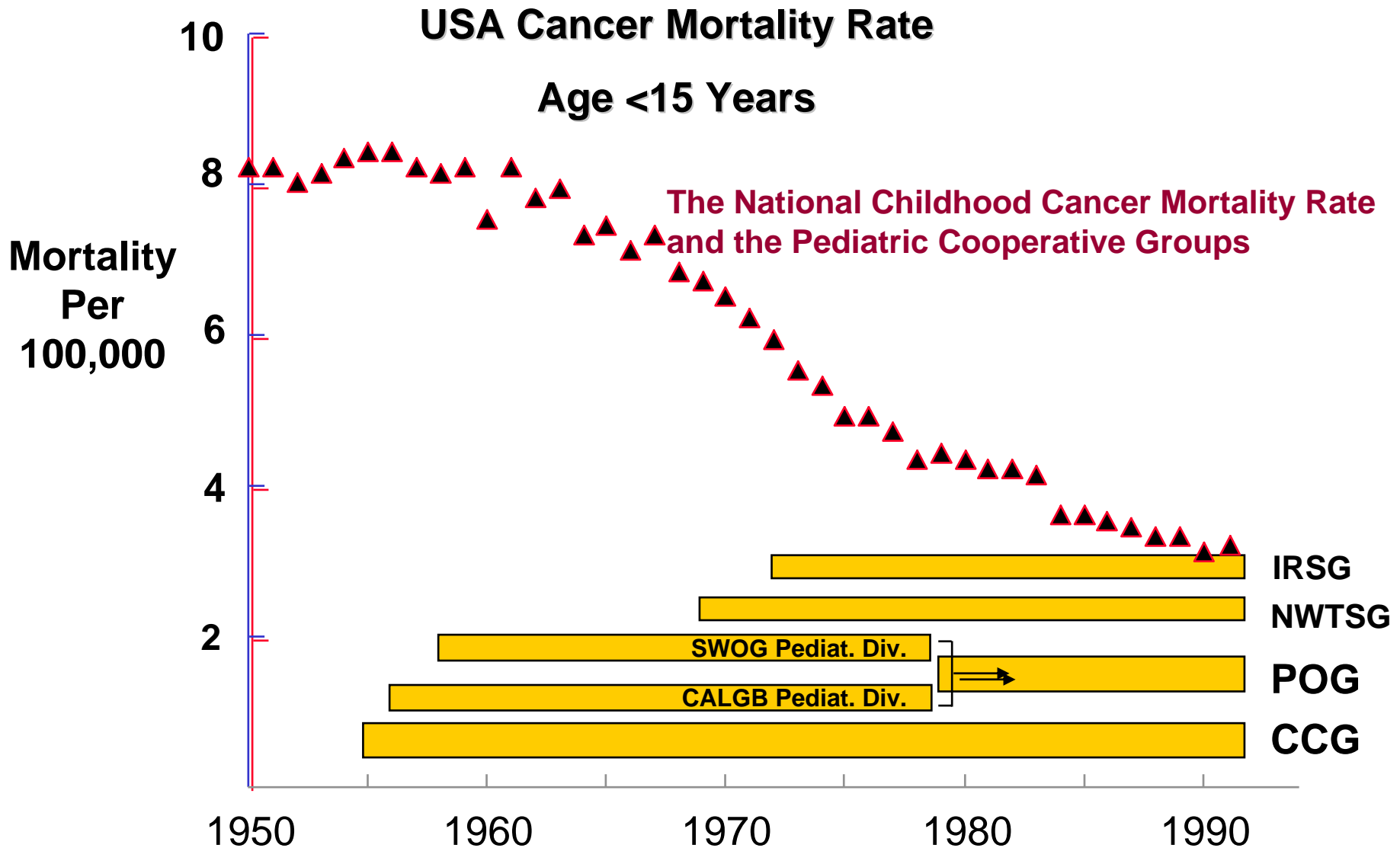
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- 1946 - 48 first RCT in clinical medicine
- Streptomycin vs. Bedrest for patients with Tuberculosis
- Designed by Bradford Hill , British Medical Journal, 254:354-70,1948

REASON: shortage of medications that required rationing



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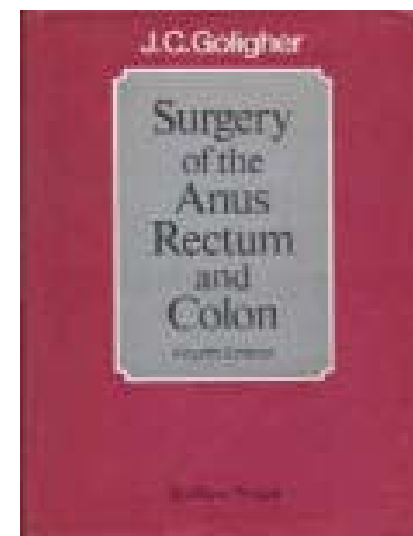
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Members of Multidisciplinary Care Team

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- **Early surgical Randomized Controlled Trials**
- **York-Leeds Trial for Peptic Ulcer Disease 1960's**
- **Professor John Goligher,
Saint Marks Hospital,
London, England**



Example of Multidisciplinary Care Team: Soft Tissue Sarcoma (cont.)

- Patient has large, high-grade, deep synovial sarcoma of thigh
- Referred for possible hip disarticulation
- Tumor growing through previous biopsy site



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Example of Multidisciplinary Care Team: Soft Tissue Sarcoma (cont.)

Magnetic resonance image of tumor indicates stage III disease (T2, N0, M0, G4)



Example of Multidisciplinary Care Team: Soft Tissue Sarcoma (cont.)

- Describe clinical case
- Present pathologic and radiographic data
- Discuss role of neoadjuvant versus adjuvant chemotherapy and preoperative versus postoperative radiotherapy
- Discuss surgical resectability; use of preoperative treatments, given the wound disruption; and need for reconstructive surgery

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Example of Multidisciplinary Care Team: Soft Tissue Sarcoma (cont.)

- Preoperative chemotherapy and radiotherapy given as part of a clinical trial protocol
- No further tumor progression noted



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Example of Multidisciplinary Care Team: Soft Tissue Sarcoma (cont.)

- Reconstructive surgery to eliminate tumor bed dead space
- Uneventful healing and full ambulation
- Final report on pathologic findings indicated negative margins and 98% tumor necrosis
- Adjuvant chemotherapy completed
- Patient alive and disease-free eight years after treatment



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Summary

- For many patients, multidisciplinary treatment approach provides the best outcome
 - Prolonged survival and/or cure rates
 - Best local and regional control rates
 - Likely entry point into clinical trial
- Multimodality treatment plan is important
- Optimal time to coordinate clinical protocol eligibility and options
- Multidisciplinary care team conference is a valuable mechanism to finalize a treatment plan, discuss entry into clinical trials, and manage logistics of patient follow-up

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Infrastructure for Clinical Trials

- Protocols, data forms
- Research nurses
- Data managers
- Statisticians
- Institutional Review Board
- Medical record
- Patient volume
- Cooperative groups
- Quality control
 - Diagnostic
 - Pathologic
 - Treatment variables
- Funding (long-term)
 - Patient accrual
 - Unreimbursed patient care costs
 - Research staffing
 - Patient follow-up
 - Statistical analysis

Prospective Clinical Trials

Advantages

- Based on hypothesis
- Relevant data complete
- Quality control
- Sample size adequate
- No treatment or referral bias
- Creditable results
- Marketing to physicians for referral

Disadvantages

- Take a long time
- Laborious protocol review
- Require cooperation among physicians
- Patient resistance
- Slows down clinic
- Expensive
- Funding inadequate
- Insurance denials

Retrospective Clinical Trials

Advantages

- Long-term results available faster
- Identify prognostic factors
- Compare results among stages or subgroups
- Contribute to design and methodology of prospective trials
- Fairly inexpensive

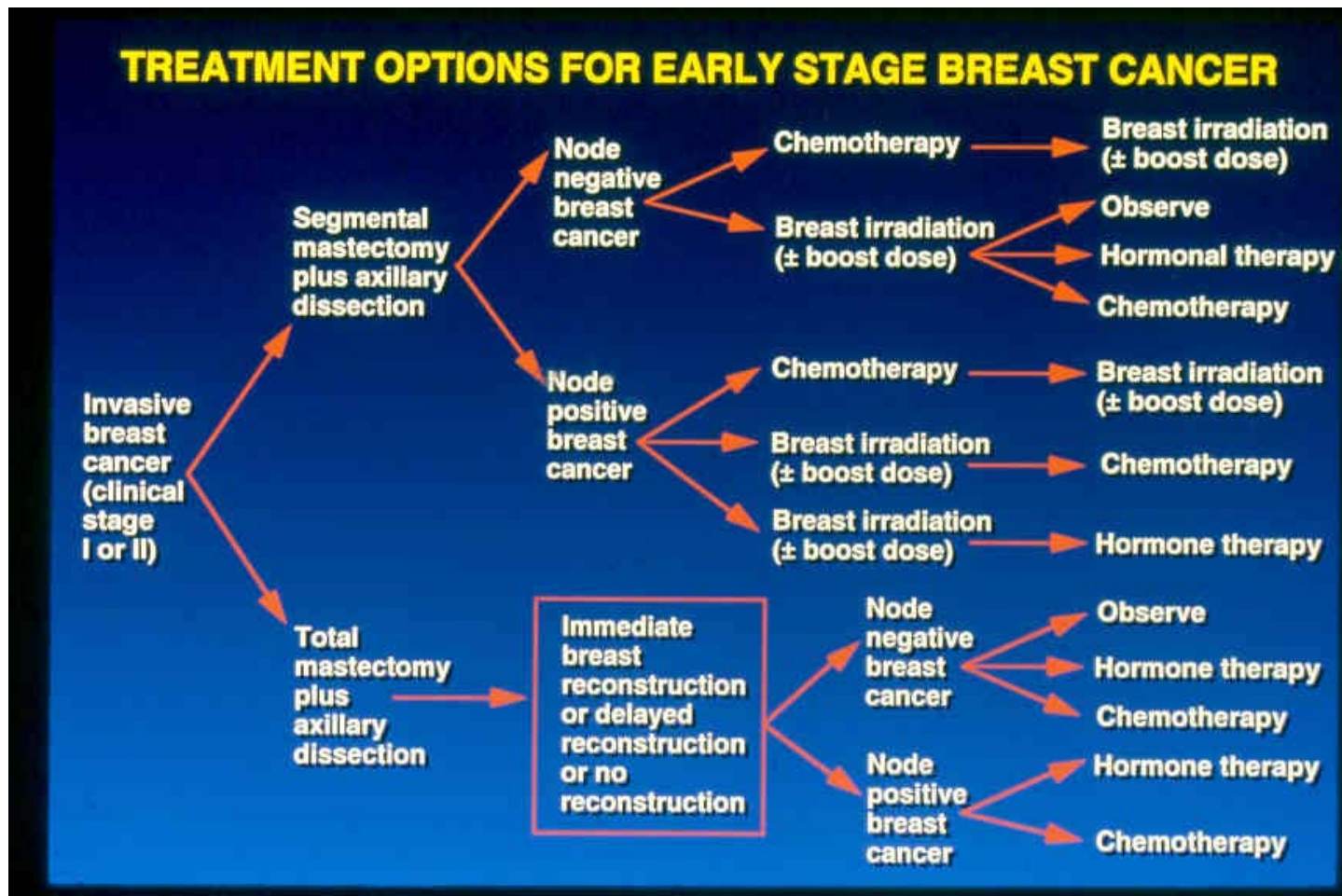
Disadvantages

- Data are incomplete (clinically and pathologically)
- Changes in natural history of disease
- Stage migration
- Treatment bias (over time and among physicians)
- Referral bias

Advancing Knowledge Through Clinical Trials

- Retrospective studies
- Prospective, nonrandomized clinical trials
- Prospective randomized clinical trials
 - Institutional
 - Multi-institutional
- Sequential clinical trials
- Meta-analysis (pooled data from literature)
- Mega-analysis (pooled databases)

One Example of Multidisciplinary Cancer Care



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