
UCLA Radiology Pathology Center

(Or, Slouching Towards Bethlehem: Gestation of a Multimodality Diagnostics Initiative)

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Convergence of Radiology and Pathology

- Combined services, “Diagnostic Medicine”
 - Combination of new options for pathology and radiology
 - Siemens/GE imaging and in *in vitro* diagnostics initiatives
 - Dr. Bruce Friedman: “10 Reasons for the Merger of Pathology and Radiology” (College of American Pathologists™)
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Ten Reasons for the Partnership....

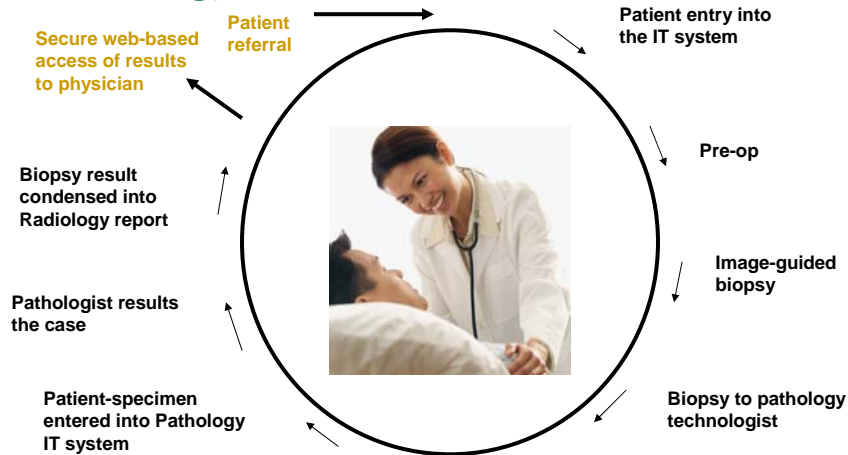
- Substantial overlap already exists in practices
- Blending of imaging and pathology diagnostics
- Radiology will compete with surgical pathology
- Overarching benefits are achieved by closer integration
- Enhanced quality of reporting in merged IT
- Radiology under threat from clinicians, a merger to increase scale for both
- Could create a critical mass for interested trainees
- Core technologies in surgical pathology would benefit from infusions of radiology technology
- Imaging has high profit margin, lab tests are a commodity
- Pathology would benefit from combined/enhanced research capital

*Dr. Bruce Alexander, College of American Pathologists™

Scientific and Clinical Rationale

- Exponential growth of biomarkers for disease!
- Expeditious diagnosis of neoplasia types
- *In vivo* analysis of the origin of metastases, tumor staging
- Grading of neoplasias *in vivo*
- Therapeutic decision-making related to *in situ* analysis
- Infectious disease markers *in vivo*, expedited analysis of pathogenesis in life-threatening infections

Patient-Centric Care and the Radiology-Pathology Service Model



Elements of a Radiology-Pathology Business Plan

- 1. Company description
- 2. Product definition
- 3. Market review
- 4. Operations with flow analysis
- 5. Management and organization
- 6. Milestones
- 7. Status

1. Company Descriptions

- **UCLA Radiology Department**
 - Regental Practice Group (reports to Dean)
 - MRI, CAT scans, ultrasound, mammography, biopsy collection, biopsy transfer, web-based results
 - **UCLA Pathology Department**
 - Regental Practice Group (reports to Dean)
 - Histology, biopsy diagnosis, biomarker discovery, development and testing; web-based results
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2. Product Description

- **UCLA Radiology Pathology Center: joint venture to provide a novel, patient-friendly approach to image-guided biopsy sampling for malignancy work-up**
 - **Will use CAT, MRI, ultrasound to isolate and sample suspicious lesions by radiologists**
 - **Pathology encounter, processing, transport of specimen and diagnosis by pathologists**
 - **Pathology report will be combined with radiology report to provide comprehensive single-copy report to physicians with web-based access**
 - **Estimated 48 to 72-hour turn-around-time**
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3. Market Review

- Market to include any potential cancer patients in the West Los Angeles region (population 400,000)
- Competition identified in 2 main areas: a) a large non-hospital-based outpatient radiology clinic and pathology labs such as Quest and b) 2 nearby hospital-based radiology clinics and pathology labs
- Population base has 1450 expected patients with selected cancers per year (U.S. Cancer Statistics Working Group)
- if only 30% of suspicious cases test positive for cancer entire marked is 4840 patients
- Assumed price/biopsy of \$2500, UCLA Radiology Pathology Center could potentially capture \$12 million/year
- Marketing and sales: market to physician groups familiar with the UCLA network, use personalized letters with UCLA letterhead to physicians, as well as local publications, *LA Times*, to familiarize patient base.
- Overall cancer incidence rates expected to grow at 0.4%/year with aging demographics

Cancer Incidence Rates in Los Angeles for 2001 ¹	Male	Female	Total
Breast	1.4	122.9	124.3
Lung	65.6	40.1	105.7
Renal	15.4	7.8	23.2
Liver	11.2	4.4	15.6
Pancreas	11.7	8.8	20.5
Melanoma	18.3	10.9	29.2
Sarcoma	1.0	0.8	1.8
TOTAL	149.6	212.2	361.8
Population of West LA ²	195,918	204,082	400,000
Incidences of Listed Cancers in West LA	293	433	726
Assume 50% of available cancer patients are from West LA			
Total Rad-Path Cancer Patients	586	866	1452
Assumed biopsies per cancer diagnosis	3.3	3.3	3.3
Number of Rad-Path Biopsies	1,954	2,887	4,841
Revenue per biopsy	2,500	2,500	2,500
Total Available Market	\$4,884,898	\$7,217,687	\$12,102,585

¹ Rates are per 100,000 people as published by the U.S. Cancer Statistics Working Group
² As published by the Los Angeles Department of City Planning

Projected Image-Guided Biopsies

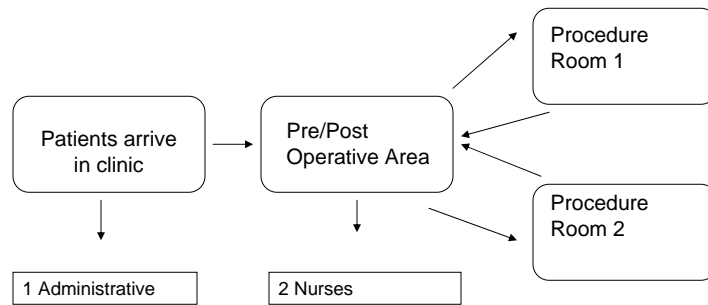
Cancer Type	2006	2007	2008	2009	2010
Breast	384	844	926	1013	1107
Lung	319	701	768	841	918
Renal	70	154	168	184	201
Liver	47	103	113	124	135
Pancreas	62	136	149	163	178
Melanoma	88	193	212	232	254
Sarcoma	5	12	13	14	16
Lymphoma	125	275	302	330	361
Total	1101	2418	2651	2902	3170

The new center will have a capacity to perform about 3600 image-guided biopsies/year (2 rooms X 6 biopsies/room/day X 300 days/year)

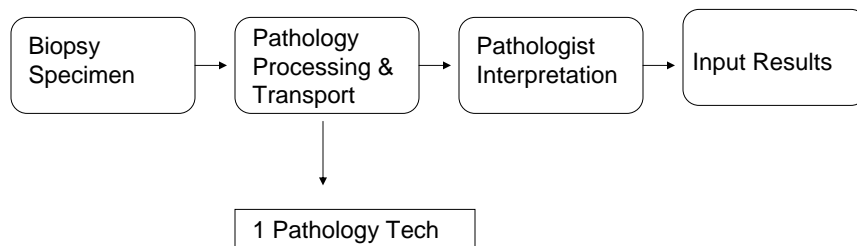
Projected Revenue (\$K)

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Total	\$2752	\$6046	\$6629	\$7254	\$7926

4. Operations with Flow Analysis



4. Operations with Flow Analysis

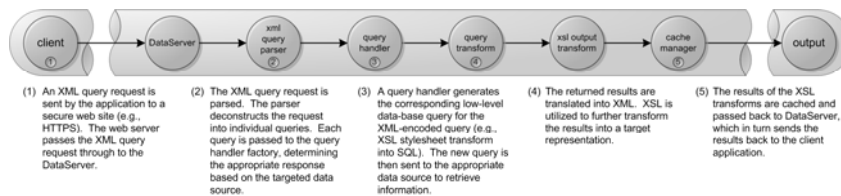


Phase 1 Radiology-Pathology Center Capital Equipment

Item	Department	Amount
C-Arm	Radiology	\$300,000
Ultrasound	Radiology	\$180,000
CT (Used - Existing)	Radiology	\$0
CT Fluoro	Radiology	\$36,000
Additional Reading Stations?	Radiology	\$0
Reading Station - GE Functional	Radiology	\$0
Microscope	Pathology	\$7,000
Computers - 4	Pathology	\$8,000
Printers - 4	Pathology	\$2,000
Telepathology Software	Pathology	\$50,000
Total Equipment Costs		\$583,000
Renovation of Space (Accessioning/Grossing)	Pathology	\$100,000
Renovation of Space	Radiology	\$230,000
Total Build Out/Renovation Costs		\$330,000
Total Equipment and Renovation Costs		\$913,000

Phase 1 Radiology-Pathology Center Informatics and *DataServer*

- DataServer, an application framework enabling XML-based real-time federation and querying of the data repositories
- Creates a single, uniform XML representation, abstracting data sources (PCIMS, GE Centricity, Pathology) and access mechanisms
- Mapping
 - Transform XML elements into corresponding data source fields understood by a targeted data source, and retrieves results into XML.
 - Transform resultant XML through stylesheets to create end-user formats



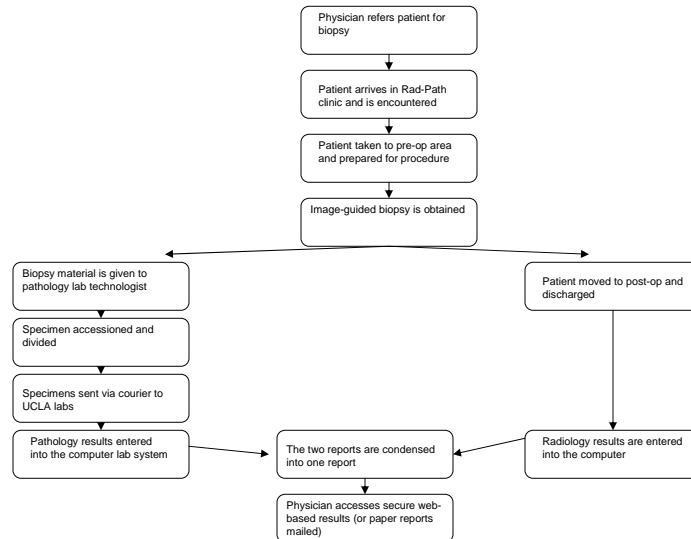
Phase 1 Radiology-Pathology Center

	Year 1	Year 2	Year 3	Year 4	Year 5	5 Year Total						
TECHNICAL REVENUE (Net)												
Commercial	145%	\$57,074	\$85,612	\$114,149	\$114,149	\$114,149	\$485,133					
MediCal	87%	\$14,609	\$21,913	\$29,218	\$29,218	\$29,218	\$124,175					
Medicare	90%	\$116,398	\$174,597	\$232,796	\$232,796	\$232,796	\$989,384					
Other	50%	\$5,601	\$8,401	\$11,201	\$11,201	\$11,201	\$47,605					
PPO&POS	140%	\$236,170	\$354,255	\$472,340	\$472,340	\$472,340	\$2,007,445					
Referred MedGrps	120%	\$40,486	\$60,729	\$80,973	\$80,973	\$80,973	\$344,133					
Self Pay	150%	\$67,477	\$101,216	\$134,954	\$134,954	\$134,954	\$573,556					
UCLA MedGrp	5.2%	\$6,140	\$9,211	\$12,281	\$12,281	\$12,281	\$52,194					
Total Tech Revenue (Net)		\$543,956	\$815,934	\$1,087,912	\$1,087,912	\$1,087,912	\$4,623,625					
OPERATING EXPENSES												
Salaries and wages		\$367,500	\$550,000	\$587,600	\$611,104	\$635,548	\$2,751,752					
Employee benefits		\$88,200	\$132,000	\$141,024	\$146,665	\$152,532	\$660,421					
Maintenance contract		\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$250,000					
Supplies (3% of net revenue)		\$16,319	\$24,478	\$32,637	\$32,637	\$32,637	\$138,709					
Rent (30% of suite 100)		\$64,129	\$64,129	\$64,129	\$64,129	\$64,129	\$320,645					
PACs system (\$10.52/procedure)		\$13,150	\$18,410	\$23,670	\$28,930	\$28,930	\$113,090					
Billing and collection (PSS @ 3.04%)		\$16,536	\$24,804	\$33,073	\$33,073	\$33,073	\$140,558					
Utilities and other expenses (estimate)		\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$60,000					
Total operating expense		\$627,834	\$875,821	\$944,133	\$978,538	\$1,008,849	\$4,435,175					
CONTRIBUTION MARGIN	\$	(83,878)	\$	(59,888)	\$	143,779	\$	109,374	\$	79,063	\$	188,450
RETURN ON INVESTMENT												
Share of margin - 1/3 Hospital	\$	(27,959)	\$	(19,963)	\$	47,926	\$	36,458	\$	26,354	\$	62,817
Share of margin - 1/3 Pathology	\$	(27,959)	\$	(19,962)	\$	47,926	\$	36,458	\$	26,354	\$	62,816
Share of margin - 1/3 Radiology	\$	(27,959)	\$	(19,963)	\$	47,926	\$	36,458	\$	26,354	\$	62,817
Net Pathology Pro Fees	\$	105,223	\$	157,835	\$	210,447	\$	263,059	\$	263,059	\$	999,623
Net Radiology Pro Fees	\$	110,142	\$	165,213	\$	220,284	\$	275,355	\$	275,355	\$	1,046,348
Useful Life												5
Payback Period (Years): (Capital Costs/(Margin/Useful Life))												24.22

Phase 1 Radiology-Pathology Center Assumptions and Comments

- Medicare technical reimbursement using 2007 Fee Schedule "CA carrier 31146 Locality Area 18"
- Payor mix based on Santa Monica Subspecialty Suites (WRVU and RBRVS)
- Salaries estimated at a 4% increase per year
- Global billing with existing shared vendor
- One common report (Pathology/Radiology)

4. Summary of Operations



5. Management and Organization

- Shared governance for patient care
- Individual department based cost analysis
- Key leadership from both departments in administrative roles
- Hospital role in partnership under negotiation

6. Milestones

- Radiology-Pathology Center attracts interventional radiology activity from competitors
 - Milestone 1: average cost of \$2500 for image-guided biopsy and incidence rates
 - Additional 2% market share capture per year over the next five years
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7. Where we are now (18 months on)

- Finalizing financials and funding transfer
 - Completing validation of integrated IT reporting mechanisms
 - Facilities upgrades underway
 - Detailing operations
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Summary- Why are we doing this?

- Patient-centric care is the safest and most efficient form of healthcare
 - A platform for research and clinical innovation in biomarkers, personalized medicine
 - An opportunity for Radiology and Pathology to add value and thereby increase diagnostic marketshare and strengthen revenues
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Planning Team



- Dr. Scott Binder, Executive Vice Chair, UCLA Department of Pathology
 - Dr. Deni Aberle, UCLA Department of Radiology
 - Brenda Izzi, CAO, UCLA Department of Radiology

 - UCLA Department of Radiology: Dr. Dieter Enzmann, Chair
 - UCLA Department of Pathology: Dr. Jonathan Braun, Chair
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