



The ABC's of Activity Based Costing

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Outline

- I. Introduction to ABC and Benefits
- II. Hospital Example
- III. Physician Practice Example
- IV. Taking Steps Toward ABC



New Role of Cost Accounting

“Costing systems will have to be redesigned, repositioned, and re-implemented as providers create new, innovative organizational structures and relationships to capture market opportunities, update transactional systems, and make decisions based on data that went relatively unexamined before.”

	Cost Accounting: The Present	Cost Accounting: Post Reform
Focus	<ul style="list-style-type: none"> . Product/Service Line . Payer . Overall Patient Population 	<ul style="list-style-type: none"> . Specific services . Specific population clusters . Specific patients, in some instances
Data Usage	<ul style="list-style-type: none"> . Market volume and profit trends across several years . Strategic planning and priorities . Budgets 	<ul style="list-style-type: none"> . Comparing financial results of care choices . Evaluating bundled payment arrangements . Evaluating make/buy opportunities . Finding best practices . Setting tactical priorities around departmental efficiencies and/or affecting outcomes
Costing Approach (method and frequency)	<ul style="list-style-type: none"> . Ratio of cost to charge . RVUs . Limited microcosting . Annual cost finding 	<ul style="list-style-type: none"> . Enhanced RVUs . Increased microcosting . More frequent standards revisions . Monthly and/or “real time” costs

Paul Selivanoff, “The Impact of Healthcare Reform on Costing Systems”, Healthcare Financial Management, May 2, 2011.

Activity Based Management (ABM)

ABM is a discipline that focuses on the management of activities as the route to continuously improving the value received by patients and the efficiency achieved by providing this value. The primary tools of ABM are:

- Cost Driver Analysis
- Activity Analysis
- Performance Analysis

Activity-based management draws on activity-based costing as a major source of information.

Source: The definitions are adapted from Common Cents and the ABC Performance Break Through by Peter B.B. Turney (Cost Technology, Inc. 1992)



Activity Based Costing (ABC)

- ABC is a method of measuring the cost and performance of activities and cost objects.
- ABC assigns costs to activities based on their use of resources, and assigns cost to products based on their use of activities.
- An *activity* is a unit of work performed within an organization which consumes resources.
- A *cost object* is the reason for performing an activity. Cost objects include products, services, projects, contracts, and patients.



ACTIVITY-BASED COSTING

- Definition: A method of measuring cost and performance of activities and products. ABC assigns costs to activities based on their use of resources, and assigns costs to products based on their use of activities.



Why consider ABC?

- How does ABC differ from traditional costing?
 - Costs traditionally treated as fixed or overhead receive more attention in ABC, and are assigned on a true “cause-and-effect” basis.
 - Views costs by activity rather than financial category.
- ABC introduces a language that can be used by the cost accountant and the clinician, who already views costs by activity.
- “An activity-based system aligns organizational information with the business mission and operations rather than financial transactions. It tears down the barriers that segregate financial information from other information.”

Mary Lee Geishecker
“New Technologies Support ABC”
Management Accounting, March 1996



When does ABC make sense?

- Overhead represents a large part of overall costs.
- Many services are offered which differ in terms of how they use overhead.
- Managers feel uncomfortable with understanding their reports (i.e. either “don’t trust the numbers” or don’t understand the underlying allocation processes).
- Top management wants to improve the quality of cost analysis and introduce a common business language to managers in order to improve efficiency.

Benefits of Activity-Based Costing

- Leads to an increased understanding of the chain of activities that help determine costs.
- Helps organizations obtain better information about their existing processes and activities so the efficiency of operations can improve continuously.
- An organization is able to rationalize and optimize its deployment of people, capital and other assets.



II. Hospital Example

(from a pilot study at a teaching hospital)



Step 1: Identify the activities performed within the department (Example: Dialysis Department)

- Register Patient
- Check-In
- Set Up
- Tending
- Set Down
- Check Out
- Cleaning Station
- Handling Supplies Reuse
- Managing Department
- Educating Staff

Step 2: Identify the resources required to support those activities

Internal

- Salaries
- Outside Services
- Medical/Surgical Supplies
- Pharmaceuticals
- Office Supplies
- IV Solutions/Supplies
- Uniforms Purchased
- Service Contracts
- Maintenance/Repair Equipment
- Miscellaneous Supplies

External

- Clinical Engineering
- Lab Testing
- Information Systems
- Social Services
- Registration
- Purchasing



Step 3: Assign External Costs (i.e. Overhead and Other Resources)

Determine Cost Assignment Method for Each Resource by Interacting with Relevant Department Managers

- Six areas targeted (Information Systems, Social Services, Purchasing, Lab Testing, Clinical Engineering, Registration).
- Other Resources (Potential for ABC analysis)
- Sustaining Resources (No clear connection to department).



Drivers of External Costs: Selected Examples

Costs Assigned to Chronic Dialysis Based on Activity Drivers

	OVERHEAD TOTAL HOSPITAL	ACTIVITY DRIVERS	TOTAL HOSPITAL VOLUME	DEPT. VOLUME	DRIVER FORMULA
CLINICAL ENGINEERING	\$91,840	#FTE'S	7	1	$91,840 * (1/7) = \$13,120$
LAB TESTING	\$2.21 reimb/treatment	# of treatments	---	3,461	$\$2.21 * 3,461 = \$7,649$
SOCIAL SERVICES	\$221,769	# FTE's	20.3	1.5	$221,769 * (1.5/20.3) = \$16,386$
INFO SYSTEMS & DP	\$394,290	# of trans.	480,520	781	$394,290 * (781/480,520) = \641
PURCHASING	\$70,555	# of purch. req's	5,412	46	$70,555 * (46/5,412) = \$599$
REGISTRATION	\$50/hour	# of patients	---	3,461	$\$50/60 * (.5 * 3,461) = \$1,442$



Sustaining Resources & Other Resources

Sustaining Resources

DEPARTMENT	\$ AMOUNT
Medical Education	3,386
Medical Staff Development	563
Cardiology/Overhead	546
Hematology Overhead	477
Surgery Overhead	916
Primary Care Overhead	1,838
Internal Medicine Overhead	5,371
Interns & Residents	<u>4,500</u>
Total	17,597

Other Resources

DEPARTMENT	\$ AMOUNT
Depreciation Bldg. Int.	621
Depreciation MME	4,519
Employee Benefits	28,167
Employee Benefits FTE	19,029
Employee Services	1,920
Dietary	30
Housekeeping	13,119
Admin Services	48,030
	(Less Purch. and I.S.)
Telecommunications	2,379
Sewing	5,623
Nurse Admin.	19,240
CSR Overhead	607
Pharmacy Overhead	10,054
Research	<u>2,902</u>
Total	156,240



Step 4: Trace each resource to activities

Direct

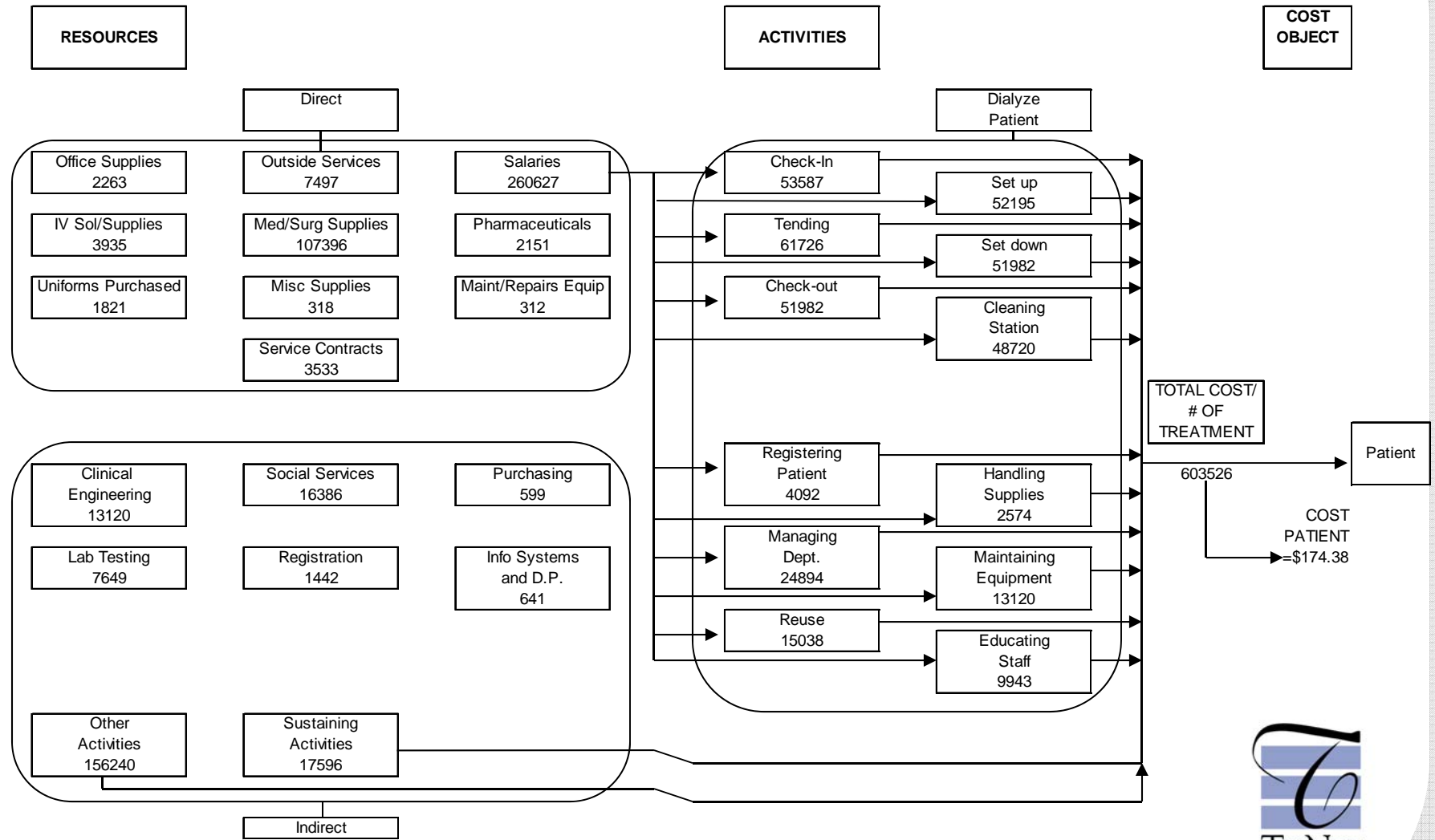
- The Dialysis manager developed estimated percentages.

Indirect

- “Other Resources” and “Sustaining Resources” were assigned directly to patients.
- The six targeted areas were assigned based on rough estimates (e.g. evenly or 100% to one activity).



Departmental ABC Model: Dialysis



Dialysis P&L Based on ABC Approach

	<u>Total</u>	<u>\$ Per Rx</u>	<u>%</u>
REVENUE	\$ 435,350	\$ 125.78	100%
DIRECT COSTS BY ACTIVITY			
Patient Check In	\$ 53,587	\$ 15.48	12%
Patient Set Up	52,195	15.08	12%
Patient Tending	61,726	17.83	14%
Patient Set Down	51,982	15.02	12%
Patient Check Out	51,982	15.02	12%
Registering Patient	4,092	1.18	1%
Cleaning Station	48,720	14.08	11%
Handling Supplies	2,574	0.74	1%
Reuse	15,038	4.34	3%
Managing Department	24,894	7.19	6%
Educating Staff	9,943	2.87	2%
Direct Costs per GL which could not be located	13,120	3.79	3%
Total Direct Costs by Activity	\$ 389,853	\$ 112.40	90%
DIRECT MARGIN	\$ 45,497.00	\$ 13.14	10%
COSTS OF PARTNERSHIP NETWORK			
Registering	\$ 1,442.00	\$ 0.42	0%
Lab Testing	7,649	2.21	2%
Maintaining Equipment	13,120	3.79	3%
Providing Social Services	16,386	4.73	4%
Computing	641	0.19	0%
Purchasing	599	0.17	0%
Costs of Depts not yet analyzed but which may be subject to Activity Driver Analysis	156,240	45.14	36%
Total Partnership Network Costs	\$ 196,077.00	\$ 56.65	45%
CONTRIBUTION TO SUSTAINING ACTIVITIES	\$(150,580.00)	\$(43.51)	-35%
COSTS OF SUSTAINING ACTIVITIES	\$ 17,597.00	\$ 5.08	4%
NET PROFIT/(LOSS)	\$(168,177.00)	\$(48.59)	-39%



Step 5: Assign Costs Generated by all Activities Among the Different “Cost Objects”

Dialysis Department

- Only one “cost object”.

Other Departments

- RVU’s or Standards would be developed at an *activity* level (see Physician Costing Example to follow)



III. Physician Practice Example

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How does Physician Cost Accounting differ from Hospital Cost Accounting?

- Salary costs are the area of focus because they comprise the bulk of costs. In many practices, supply costs are minimal
- Patient care activities encompass a broad range of activities for both physician and staff.
- In addition to direct caregiver time, a multitude of other activities are necessary to coordinate the care for the patient, including;
 - Responding to phone calls
 - Reviewing results of diagnostic tests
 - Dictation



Why consider ABC for Physician Cost Accounting?

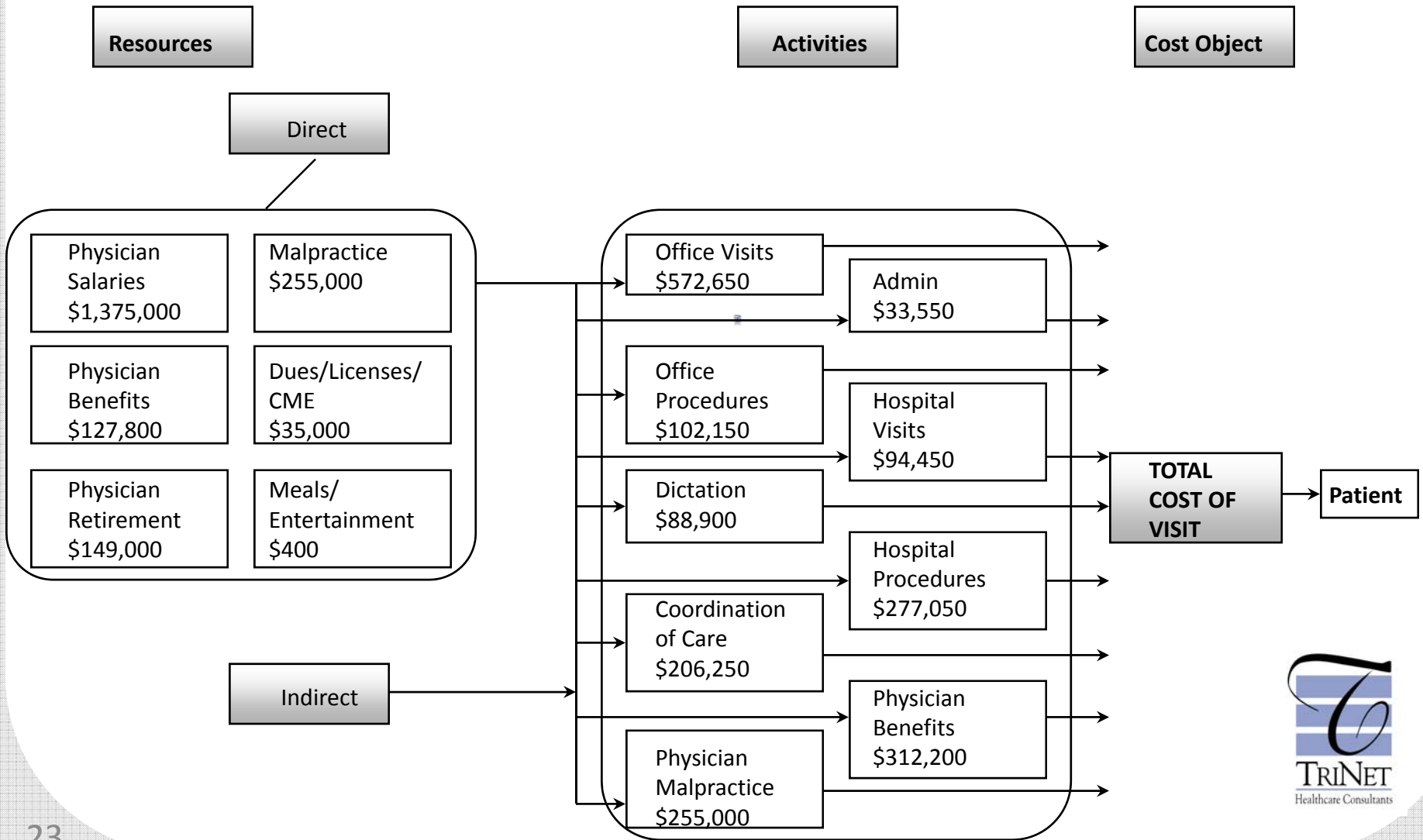
*Since an ABC approach is centered on **activities**, it lends itself well to physician cost accounting.*

- A traditional costing approach would focus on “direct variable” costs; i.e. the direct caregiver time.
 - Other activities would be treated as “fixed” costs, and would be allocated on the basis of a statistic such as volume or direct time.
 - Costs by encounter are potentially misrepresented if the direct caregiver time is used to allocate other labor costs; in a multi-specialty practice, pediatric visits may be short in duration, but significant phone time is involved.
- ABC can be considered more practical in a physician setting than in a hospital setting because the range of activities is less diverse. Although each specialty and each practice is unique, it is possible to develop a list of activities that would work across all practice practices in the organization.



Activity-Based Flow Chart

Outcome of Steps 1-4: Assign Costs to Activities

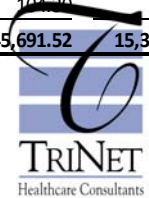


ABC Example

Step 5: Assign Activities to Products

Compile RVU's (Medicare RBRVS Values)

CPT	CPT Name	Volume	RVU Values						Weighted RVU's					
			Work	Work: Office Visits	Work: Office Procedures	Work: Hosp Procedures	Practice Expense	Malpractice	Work	Work: Office Visits	Work: Office Procedures	Work: Hosp Procedures	Practice Expense	Malpractice
99201	New Patient Level 1	4	0.48	0.48			0.77	0.04	1.92	1.92			3.08	0.16
99202	New Patient Level 2	6	0.93	0.93			1.19	0.07	5.58	5.58			7.14	0.42
99203	New Patient Level 3	70	1.42	1.42			1.61	0.14	99.40	99.40			112.70	9.80
99204	New Patient Level 4	225	2.43	2.43			2.18	0.23	546.75	546.75			490.50	51.75
99205	New Patient Level 5	25	3.17	3.17			2.55	0.27	79.25	79.25			63.75	6.75
99211	Est Patient Level 1	550	0.18	0.18			0.41	0.01	99.00	99.00			225.50	5.50
99212	Est Patient Level 2	870	0.48	0.48			0.77	0.04	417.60	417.60			669.90	34.80
99213	Est Patient Level 3	410	0.97	0.97			1.09	0.07	397.70	397.70			446.90	28.70
99214	Est Patient Level 4	180	1.50	1.50			1.53	0.10	270.00	270.00			275.40	18.00
99215	Est Patient Level 5	10	2.11	2.11			1.95	0.14	21.10	21.10			19.50	1.40
99384	Prev visit new age 12-17	5	2.00	2.00			1.82	0.13	10.00	10.00			9.10	0.65
99385	Prev visit new age 18-39	35	1.92	1.92			1.79	0.13	67.20	67.20			62.65	4.55
99386	Prev visit new age 40-64	10	2.33	2.33			1.95	0.15	23.30	23.30			19.50	1.50
99394	Init pm e/m new pat 65+ yrs	15	1.70	1.70			1.57	0.10	25.50	25.50			23.55	1.50
99395	Prev visit est age 18-39	2250	1.75	1.75			1.59	0.10	3,937.50	3,937.50			3,577.50	225.00
99396	Prev visit est age 40-64	830	1.90	1.90			1.65	0.12	1,577.00	1,577.00			1,369.50	99.60
99397	Per pm reeval est pat 65+ yr	60	2.00	2.00			1.83	0.13	120.00	120.00			109.80	7.80
59400	Obstetrical Care	880	32.16			32.16	22.07	8.96	28,300.80			28,300.80	19,421.60	7,884.80
59510	Cesarean delivery	425	35.64			35.64	24.05	10.15	15,147.00			15,147.00	10,221.25	4,313.75
54150	Circumcision	775	1.90			1.90	2.46	0.23	1,472.50			1,472.50	1,906.50	178.25
59400	Amniocentesis	260	32.16		32.16		22.07	8.96	8,361.60		8,361.60		5,738.20	2,329.60
59025	Non-Stress Test	1030	0.53		0.53		0.79	0.13	545.90		545.90		813.70	133.90
58100	Endometrial Biopsy	70	1.53		1.53		1.49	0.26	107.10		107.10		104.20	18.20
Total Weighted RVU's									61,633.70	7,698.80	9,014.60	44,920.30	45,691.52	15,356.38

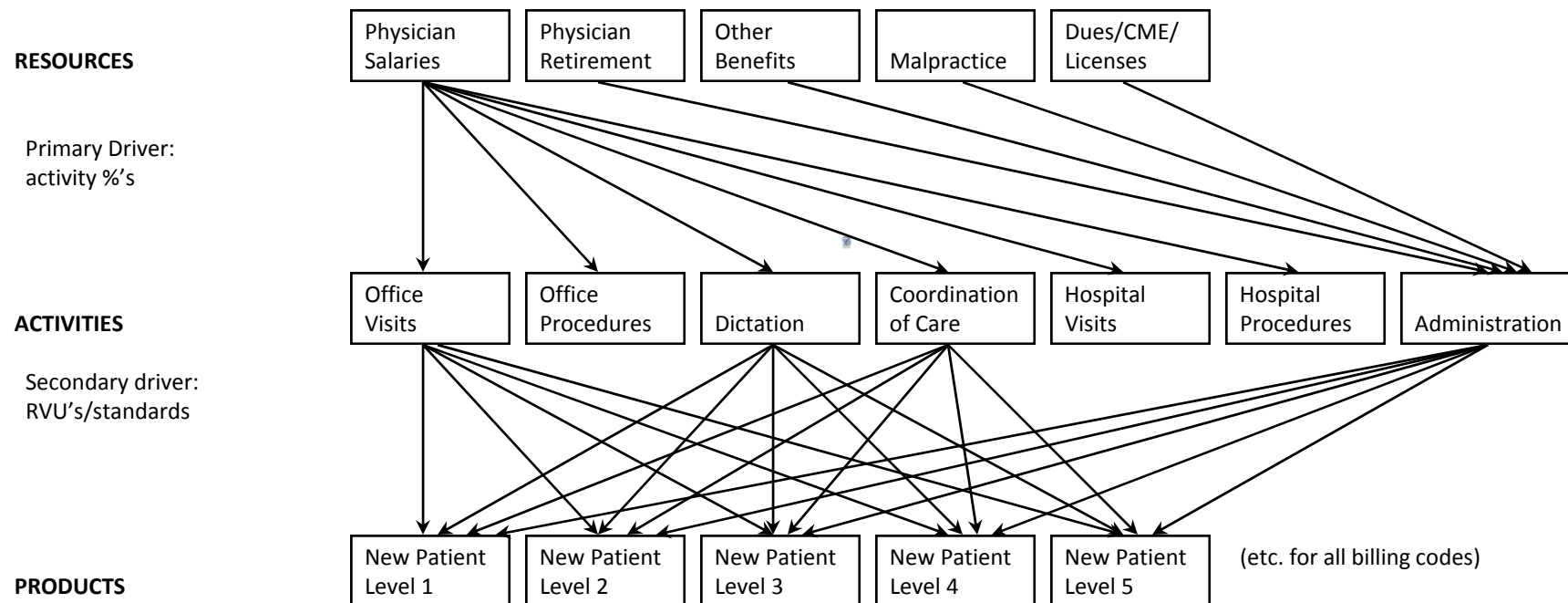


ABC Example: Determine Per Unit Cost, by Activity

CPT	CPT Name	Per Unit Cost							
		Office Visits (Work RVU's)	Office Procedures (Work RVU's)	Dictation (PE RVU's)	Coord of Care (PE RVU)	Admin (PE RVU)	Hospital Procs (Work RVU's)	Physician Benefits (Work RVU's)	Malpractice (Malpractice RVU's)
99201	New Patient Level 1	\$35.70	\$0.00	\$1.50	\$3.48	\$0.57	\$0.00	\$2.43	\$0.66
99202	New Patient Level 2	\$69.18	\$0.00	\$2.32	\$5.37	\$0.87	\$0.00	\$4.71	\$1.16
99203	New Patient Level 3	\$105.62	\$0.00	\$3.13	\$7.27	\$1.18	\$0.00	\$7.19	\$2.32
99204	New Patient Level 4	\$180.75	\$0.00	\$4.24	\$9.84	\$1.60	\$0.00	\$12.31	\$3.82
99205	New Patient Level 5	\$235.79	\$0.00	\$4.96	\$11.51	\$1.87	\$0.00	\$16.06	\$4.48
99211	Est Patient Level 1	\$13.39	\$0.00	\$0.80	\$1.85	\$0.30	\$0.00	\$0.91	\$0.17
99212	Est Patient Level 2	\$35.70	\$0.00	\$1.50	\$3.48	\$0.57	\$0.00	\$2.43	\$0.66
99213	Est Patient Level 3	\$72.15	\$0.00	\$2.12	\$4.92	\$0.80	\$0.00	\$4.91	\$1.16
99214	Est Patient Level 4	\$111.57	\$0.00	\$2.98	\$6.91	\$1.12	\$0.00	\$7.60	\$1.66
99215	Est Patient Level 5	\$156.95	\$0.00	\$3.79	\$8.80	\$1.43	\$0.00	\$10.69	\$2.32
99384	Prev visit new age 12-17	\$148.76	\$0.00	\$3.54	\$8.22	\$1.34	\$0.00	\$10.13	\$2.16
99385	Prev visit new age 18-39	\$142.81	\$0.00	\$3.48	\$8.08	\$1.31	\$0.00	\$9.73	\$2.16
99386	Prev visit new age 40-64	\$173.31	\$0.00	\$3.79	\$8.80	\$1.43	\$0.00	\$11.80	\$2.49
99394	Init pm e/m new pat 65+ yrs	\$126.45	\$0.00	\$3.05	\$7.09	\$1.15	\$0.00	\$8.61	\$1.66
99395	Prev visit est age 18-39	\$130.17	\$0.00	\$3.09	\$7.18	\$1.17	\$0.00	\$8.86	\$1.66
99396	Prev visit est age 40-64	\$141.33	\$0.00	\$3.21	\$7.45	\$1.21	\$0.00	\$9.62	\$1.99
99397	Per pm reeval est pat 65+ yr	\$148.76	\$0.00	\$3.56	\$8.26	\$1.34	\$0.00	\$10.13	\$2.16
59400	Obstetrical Care	\$0.00	\$0.00	\$42.94	\$99.62	\$16.21	\$265.97	\$162.90	\$148.79
59510	Cesarean delivery	\$0.00	\$0.00	\$46.79	\$108.56	\$17.66	\$294.75	\$180.53	\$168.55
54150	Circumcision	\$0.00	\$0.00	\$4.79	\$11.10	\$1.81	\$15.71	\$9.62	\$3.82
59400	Amniocentesis	\$0.00	\$364.42	\$42.94	\$99.62	\$16.21	\$0.00	\$162.90	\$148.79
59025	Non-Stress Test	\$0.00	\$6.01	\$1.54	\$3.57	\$0.58	\$0.00	\$2.68	\$2.16
58100	Endometrial Biopsy	\$0.00	\$17.34	\$2.90	\$6.73	\$1.09	\$0.00	\$7.75	\$4.32
	Total Weighted RVU's	7,698.80	9,014.60	45,691.52	45,691.52	45,691.52	44,920.30	61,633.70	15,356.38
	Total Costs	\$572,650	\$102,150	\$88,900	\$206,250	\$33,550	\$371,500	\$312,200	\$255,000
	Cost per RVU	\$74.38	\$11.33	\$1.95	\$4.51	\$0.73	\$8.27	\$5.07	\$16.61



Activity Based Costing Process View



ABC.... Easy as 123....

Steps Organizations Can Take

MACRO COSTING (DEPARTMENT LEVEL)

1. Move from “allocating” overhead to “assigning” it on a cause-and-effect basis, where feasible
2. Shift costs from indirect to direct
3. Break out costs by activity (Challenge: Make your cost components ACTIVITIES!)

MICRO COSTING (SERVICE ITEM LEVEL)

1. When building standards/RVU's, focus on activities
 - Build a list of activities as part of the cost accounting process
 - Include ALL activities, not just direct patient-caregiver time!
 - Develop the time estimates/RVU's by activity (Benefit: Ensures a consistent approach by all involved in the RVU study)
2. Incorporate indirect costs in costing RVU's/Standards
 - e.g. What Environmental Services resources are part of Nursing Care (Room & Board charge, or a per admission cost)?



ABC: Micro-Costing Example (RVU Development)

<u>Activity</u>	<u>Acct Name</u>	<u>Resource Name</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total Cost</u>
Check-In	Unit Clerk	Check-in	10 min.	0.188	\$1.88
	Reg. Clerk	Registration Costs	.50 min.	0.833	\$0.42
	M/S Supplies	Med Ctr Kit	1 kit	3.850	\$3.85
					<u>\$6.15</u>
Set Up	RN	Set up	10 min	0.640	\$6.40
	M/S Supplies	I.V. Adm Set	1 set	0.400	\$0.40
		Protective Gown	1 each	3.007	\$3.01
					<u>\$9.81</u>
Tending	RN	Tending	100 min.	0.640	\$64.00
	Lab Costs	Lab Testing	1 test	2.210	\$2.21
	M/S Supplies	.9% NaCl 1000 ml	2 each	0.600	\$1.20
		4x4 gauze pad-sterile	1 pkg	0.452	\$0.45
		Acid Concentrate	1.5 gallon	2.500	\$3.75
		Aldetect	2 each	0.150	\$0.30
		Artificial Kidney	.40 each	15.500	\$6.20
Set-down	RN	Set down	15 min.	0.640	\$9.60
Check-out	Unit Clerk	CheckOut	5 min.	0.188	\$0.94
Cleaning	Aide	Cleaning Station	10 min.	0.167	\$1.67
	M/S Supplies	Cleaning Supplies	\$/treatment	5.490	\$5.49
					<u>\$7.16</u>
PROCEDURE TOTAL			28		\$111.77



What's ABC and what's TDABC?

Approach	Pro (Advantage)	Con (Disadvantage)
Activity Based Costing (ABC)	<p>Views costs by activity rather than financial category</p> <p>Activity-based approach can result in more accurate assignment of costs to service item/CPT level</p>	<p>Activity breakout introduces more complexity</p> <p>Potentially significant time to implement</p>
Time-Driven Activity Based Costing (TDABC)	<p>"Pull" or bottom-up methodology identifies unused efficiency and/or unused capacity cost variance</p>	<p>Requires developing time standards or collecting actual times (vs. using RVU's)</p> <p>Quest for perfect cost drivers will have impact on implementation timeline, and ongoing maintenance</p>

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