

## Demonstrating your worth: Strategies towards an economic analysis of athletic training services

**Kenny Lam, Sc.D., ATC**  
Assistant Professor of Clinical Research  
Post-Professional Athletic Training Program  
Department of Interdisciplinary Health Sciences  
A.T. Still University  
Mesa, AZ

A.T. STILL UNIVERSITY | ATSU

---

---

---

---

---

---

---

---

## Objectives

What are you "worth"?

- Characterizing your clinical practice
- The role of documentation

What type of information should you collect and track?

- General patient information
- Specific codes: ICD-9/ICD-10 (dx), CPT (tx)
- Important resources: fee schedules (state, federal)

Strategies to collect, organize, and analyze your information

- Spreadsheet software: basic and helpful functions
- Electronic medical record: CORE-AT EMR

A.T. STILL UNIVERSITY | ATSU  
© Lam, 2012

---

---

---

---

---

---

---

---

## You are only worth what you document

Administrators and stakeholders rely on evidence to make decisions

- Evidence is often in the form of numbers... administrators and stakeholders love numbers!

Not all numbers are created equal

- Number of hours worked is not good enough
- Need to demonstrate what you are doing during your work hours

So, what information should be collected?

A.T. STILL UNIVERSITY | ATSU  
© Lam, 2012

---

---

---

---

---

---

---

---

## Characterizing your practice

Basic components of your clinical practice

- Patient characteristics
- Treatment characteristics
- Value characteristics

Documenting your practice: the good news...the bad news...

- In theory, this should **not** be **extra** work on your part
- But **comprehensive** documentation requires **diligence**

---

---

---

---

---

---

---

---

---

---

## Patient Characteristics

Patient demographics

- Who are you providing service for?
  - ✓ Age
  - ✓ Gender
  - ✓ Sport

Injuries, diseases, conditions

- What are you providing service for?
  - ✓ Diagnoses
  - ✓ Coding: **International Classification of Diseases (ICD)**

---

---

---

---

---

---

---

---

---

---

## Patient Characteristics

ICD codes: A quick review

- International diagnosis coding system published by WHO
- Revised periodically: ICD-9\*/ ICD-10/ICD-11
- Allows for comparability across medical disciplines world-wide

**A sample of knee ICD-9 Codes**

ICD-9 Code	Description
836.3	Dislocation / Subluxation Patella
719.46	Knee Pain
836.2	Meniscus Tear, Acute
718.00	Meniscus Tear, Chronic
726.64	Patellar Tendonitis
844.9	Sprain / Strain, unspecified thigh, distal end
844.0	Sprain LCL
844.1	Sprain MCL
844.2	Sprained Cruciate Ligament
733.95	Stress fracture, unspecified
726.90	Tendinitis, unspecified

---

---

---

---

---

---

---

---

---

---

## Treatment Characteristics

### Duration of care

- How much time do you spend providing care?
  - ✓ Per treatment: 15 minutes = 1 unit
  - ✓ Per patient case: intake to discharge

### Amount of care

- How often do you see a patient?
  - ✓ Number of visits from intake to discharge

### Type of treatment

- What type(s) of care are you providing?
  - ✓ Procedures and treatments
  - ✓ Coding: **Current Procedural Terminology (CPT)**

---

---

---

---

---

---

---

---

---

---

---

---

## Treatment Characteristics

### CPT codes: A quick review

- Treatment coding system maintained by the American Medical Association (AMA)
- The U.S. standard: mandated by Centers for Medicare and Medicaid Services (CMS) and HIPAA
- Revised periodically: CPT 2010\*
- Enhances communication of medical services across disciplines

---

---

---

---

---

---

---

---

---

---

---

---

## Common AT-related CPT codes

CPT Code	Description
97005	Athletic Trainer Evaluation
97006	Athletic Trainer Re-Evaluation
97010	Hot or Cold Packs
97014	Electrical stimulation
97016	Vasopneumatic Devices
97022	Whirlpool
97026	Infrared
97033	Iontophoresis
97034	Contrast Bath
97035	Ultrasound
97110	Therapeutic exercise (procedure)
97112	Neuromuscular reeducation
97113	Aquatic Therapy
97116	Gait Training
97124	Massage
97140	Manual therapy techniques
97530	Therapeutic activities ("ing" code)
97750	Physical performance test or measurement

---

---

---

---

---

---

---

---

---

---

---

---

## Value Characteristics

### Quality of care

- Are your patients getting better due to your care?
  - ✓ Clinical outcomes assessment
  - ✓ Clinician-based vs. patient-based outcomes

### Cost of care

- How much care do you provide to your school?
  - ✓ Fee schedules
    - State: **AZ Physician Fee Schedule**
    - Federal: **Centers for Medicaid and Medicare Services (CMS)**

---

---

---

---

---

---

---

---

---

---

---

---

## Value Characteristics

### Fee Schedule

- Fees for medical services
- Updated annually
- Established on state and federal levels

### State: AZ Physician Fee Schedule

- Established by the Industrial Commission of Arizona
- [www.ica.state.az.us/Director/FeeSchedulePDFs/2011FeeSchedulePhysicalMedicineCodes.pdf](http://www.ica.state.az.us/Director/FeeSchedulePDFs/2011FeeSchedulePhysicalMedicineCodes.pdf)

### Federal: CMS Fee Schedule

- CMS "base rates" set the lowest acceptable rates for medical services rendered
- [www.cms.gov/apps/physician-fee-schedule](http://www.cms.gov/apps/physician-fee-schedule)

---

---

---

---

---

---

---

---

---

---

---

---

## 2011 AZ Physician Fee Schedule

CPT Code	Description	Cost per unit
97005	Athletic Trainer Evaluation	\$ 89.00
97006	Athletic Trainer Re-Evaluation	\$ 60.00
97010	Hot or Cold Packs	\$ 15.00
97014	Electrical stimulation	\$ 24.00
97016	Vasopneumatic Devices	\$ 25.00
97022	Whirlpool	\$ 27.00
97026	Infrared	\$ 17.00
97033	Iontophoresis	\$ 34.00
97034	Contrast Bath	\$ 23.00
97035	Ultrasound	\$ 41.00
97110	Therapeutic exercise (procedure)	\$ 41.00
97112	Neuromuscular reeducation	\$ 41.00
97113	Aquatic Therapy	\$ 39.00
97116	Gait Training	\$ 33.00
97124	Massage	\$ 38.00
97140	Manual therapy techniques	\$ 41.00
97530	Therapeutic activities ("ing" code)	\$ 44.00
97750	Physical performance test or measurement	\$ 52.00

---

---

---

---

---

---

---

---

---

---

---

---

## 2012 CMS (Federal) Fee Schedule

<u>CPT Code</u>	<u>Description</u>	<u>Base Cost per unit</u>
97005	Athletic Trainer Evaluation	N/A
97006	Athletic Trainer Re-Evaluation	N/A
97010	Hot or Cold Packs	N/A
97014	Electrical stimulation	\$ 18.38
97016	Vasopneumatic Devices	\$ 18.38
97022	Whirlpool	\$ 22.12
97026	Infrared	\$ 5.79
97033	Iontophoresis	\$ 30.63
97034	Contrast Bath	\$ 17.02
97035	Ultrasound	\$ 12.25
97110	Therapeutic exercise (procedure)	\$ 30.63
97112	Neuromuscular reeducation	\$ 32.00
97113	Aquatic Therapy	\$ 40.85
97116	Gait Training	\$ 27.23
97124	Massage	\$ 25.19
97140	Manual therapy techniques	\$ 28.59
97530	Therapeutic activities ("ing" code)	\$ 33.70
97750	Physical performance test or measurement	\$ 32.34

---

---

---

---

---

---

---

---

---

---

---

---

## Collecting and analyzing

### Spreadsheet software

- **Excel**
  - ✓ Organizing your spreadsheet
  - ✓ Using basic functions to analyzing your data
- Good alternative: OpenOffice ([openoffice.org](http://openoffice.org))
  - ✓ Free, open source software

### Electronic Medical Record

- Several options available
- Does it include a way to compile and analyze data for you?
  - ✓ CORE-AT EMR ([coreat.org](http://coreat.org))

---

---

---

---

---

---

---

---

---

---

---

---

## Excel: Organization

- Each column should be one variable
  - For example:
    - ✓ Gender
    - ✓ Sport
    - ✓ Injury
    - ✓ Treatment
- Consider using multiple spreadsheets
  - For example:
    - ✓ Patient demographic sheet
    - ✓ Evaluation sheet
    - ✓ Treatment sheet

---

---

---

---

---

---

---

---

---

---

---

---

## Excel: Basic functions

- Data Validation
  - ✓ Drop-down menus for stock variables (eg, gender: male, female)
- Pivot Table
  - ✓ Basic reports
- Mathematical functions
  - ✓ Frequency counts (sum)
  - ✓ Averages (avg)
  - ✓ Calculations between columns (eg, multiplication)
- Use YouTube as a source for concise tutorials

---

---

---

---

---

---

---

---

---

---

---

---

## Excel: Drop-down menus

1	A	B	C	D	E	F	G	H	I	J	K	L
1	Last_Name	First_Name	Age	Gender	DOI_Month	DOI_Date	DOI_Year	Time_of_Injury	Sport	Sport_Other	Body_Part	Side
2												
3												
4	smith	joe	17	Male	5	14	2011	3:00pm	Football		Ankle	Right
5	doe	jane	14	Female	3	16	2011	4:00pm	Volleyball		Head	N/A
6	isamarow	jack	16	Male	6	16	2011	5:00pm	Football		Lower Leg	Right
7	poppins	mary	15	Female	9	17	2011	5:00pm	Badminton		Knee	Left
8	johnson	Michael	15	Male	1	13	2011	7:50pm	Track		Lower Arm	Left
9	Creek	Amy	14	Female	10	6	2012	3:50pm	Volleyball		Elbow	Right
10												
11												
12												
13												
14												
15												

---

---

---

---

---

---

---

---

---

---

---

---

## Excel: Pivot table

The screenshot shows a PivotTable with the following data:

Count of Body Part	Gender	Female	Male	(blank)	Grand Total
Badminton		1	2	3	6
Football		2	2	2	6
Track		1	1	1	3
Volleyball		1	1	1	3
(blank)		0	0	0	0
Grand Total		2	3	3	8

---

---

---

---

---

---

---

---

---

---

---

---

## Electronic Medical Record

Remember: you are worth what you document

- ✓ EMRs can be a 2 for 1
- ✓ A good EMR will allow for comprehensive clinical documentation as well as analyses of clinical practice characteristics

A.T. STILL UNIVERSITY ATSU  
© Lam, 2012

---

---

---

---

---

---

---

---

## CORE-AT EMR

Clinical, Outcomes Research Education  
**CORE-AT**  
FOR ATHLETIC TRAINERS

Funding for the CORE-AT project was provided through a grant from the National Athletic Trainers' Association Research and Education Foundation

HOME GLOBAL ADMIN ATHLETIC TRAINER PATIENT

### ATHLETIC TRAINER

clinic: demo  
 Username: demot  
 Password: [ ]  
 Account information is case sensitive.  
 LOGIN

Having trouble logging in? Contact Helpdesk: 1-866-846-0066

Your use of this service means that you agree to the Terms of Service and Privacy Policy.  
This service was developed in cooperation with A.T. Still University and Foundation.



coreat.org

A.T. STILL UNIVERSITY ATSU  
© Lam, 2012

---

---

---

---

---

---

---

---

## CORE-AT

Body Part Injured: Side of Body: Initial Pain Rating: Initial Pain Description:  
Shoulder Right 7 Sharp

Current Participation Status: Time Since Injury (days):  
Light Contact Only 117

Previous History of Injury: Other Health Conditions:  
none none

Diagnosis: Severity of Injury:  
840 - AC Joint Sprain Mild  
840 - AC Joint Sprain  
726 - Adhesive Capsulitis  
716.91 - Arthritis  
718.01 - Articular Cartilage Lesion  
726.12 - Bicipital Tenosynovitis

coreat.org

A.T. STILL UNIVERSITY ATSU  
© Lam, 2012

---

---

---

---

---

---

---

---

**CORE-AT**

CPT Code / Description	Number of Units (15 minute increments)
97005 - Athletic Trainer Evaluation	1
97110 - Therapeutic exercise (procedure)	1
97140 - Manual therapy techniques	1
97022 - Whirlpool	
97026 - Infrared	
97033 - Iontophoresis	
97034 - Contrast Bath	
97035 - Ultrasound	
97110 - Therapeutic exercise (procedure)	
97112 - Neuromuscular reeducation	
97113 - Aquatic Therapy	
97116 - Gait Training	
97124 - Massage	
97140 - Manual therapy techniques	
97530 - Therapeutic activities ("ing" code)	

coreat.org

A.T. STILL UNIVERSITY ATSU © Lam, 2012

---

---

---

---

---

---

---

---

---

---

**CORE-AT**

Total Services / Economic Estimates Report

Select the group(s) for this report.

Start Date: 09/01/2009 End Date: 02/01/2012

Gender  Sport  BodyPart

Total Treatments from Tue Sep 1 2009 to Wed Feb 1 2012: 245. Total Economic Estimate: \$10865.53.

29540 - Strapping - Shoulder - 2 (\$110.76)	Shoulder - 2 (\$110.76)
29530 - Strapping - Knee - 22 (\$1106.38)	Knee - 22 (\$1106.38)
29540 - Strapping - Ankle and/or Foot - 3 (\$98.88)	Ankle - 3 (\$98.88)
97005 - Athletic Trainer Evaluation - 108 (\$7940.16)	Ankle - 8 (\$588.16)
	Calf - 2 (\$147.04)
	Forearm - 2 (\$147.04)
	General Medical - 2 (\$147.04)
	Hip - 4 (\$294.08)
	Knee - 58 (\$4264.16)
	Shoulder - 16 (\$1176.32)
	Thigh - 3 (\$147.04)

coreat.org

A.T. STILL UNIVERSITY ATSU © Lam, 2012

---

---

---

---

---

---

---

---

---

---

## Summary

- You are worth what you document
- Essential components to capture in your documentation
  - ✓ ICD (version 9, 10, or 11) codes: diagnosis
  - ✓ CPT codes: treatments and procedures
  - ✓ Fee schedules: AZ Physician, CMS
- Find a system that works for you
  - ✓ Start simple: Excel, OpenOffice
  - ✓ Transition to an EMR for automated/complex analyses
    - Visit [coreat.org](http://coreat.org) for demo account

A.T. STILL UNIVERSITY ATSU © Lam, 2012

---

---

---

---

---

---

---

---

---

---



**Thank you!**



**Kenny Lam, Sc.D., ATC**  
**Assistant Professor of Clinical Research**  
**Post-Professional Athletic Training Program**  
**A.T. Still University**  
**klam@atsu.edu**  
**coreat.org**



A.T. STILL UNIVERSITY

ATSU  
© Lam, 2012

---

---

---

---

---

---

---

---