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Net Impact Estimates of the Workforce Development System in Washington State

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July 12, 2003

Kevin M. Hollenbeck

Outline

- Introduction
- Methodology and Data
- Results
- Conclusions

Introduction

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Introduction

- Biennial reports on outcomes
 - Labor-market related
 - Satisfaction
 - Workplace competencies
- Quadrennial reports on net impacts and cost-benefit

Introduction

- Study Estimates Net Impacts and Cost-Benefits of Nine Programs (Cost-Benefits for seven programs)
 - JTPA II-a (Disadvantaged adults) ←
 - JTPA II-c (Disadvantaged youth) ←
 - JTPA III (Dislocated workers) ←
 - Apprenticeship
 - Comm. Coll. Job Prep ←
 - Comm. Coll. Worker Retraining ←
 - Comm. Coll. Adult Basic Skills ←
 - Private Career Schools
 - Secondary Voc. Tech. ←

Methodology and Data

Methodology and Data

- Quasi-experimental approach with administrative data
- Treatment(s): received services from one of nine programs and exited in 97/98 or 99/00
- Comparison: did not receive services and exited from ES in 97/98 or 99/00

Sample Sizes

<u>Program</u>	<u>97/98</u>	<u>99/00</u>
JTPA II-A Adults	3,303	4,691
JTPA III	4,565	4,045
JTPA II-C Youth	2,403	3,057
Apprenticeship	3,212	3,198
CC Job Prep	17,206	16,748
CC Worker Retraining	3,317	6,894
CC ABE	11,421	13,623
Private Career School	--	10,992
Secondary Voc/Tech	6,212	10,030
<u>Comparison Group Pools</u>		
ES Labor Exchange Registrants	106,440	223,608
HS General Track Survey	33,424	32,759

Variables

Pre-exit year data

Administrative data with demographic information (e.g., race, sex, disability, education)

Wage record data back to 90s (including OR, AK, ID)

Higher education data back to early 90s

UI benefit data

TANF/Food Stamps/Medicaid data

Exit year program data

(Most recent) training service received

Institution characteristics

Outcome data

Earnings

Employment

Hourly wage

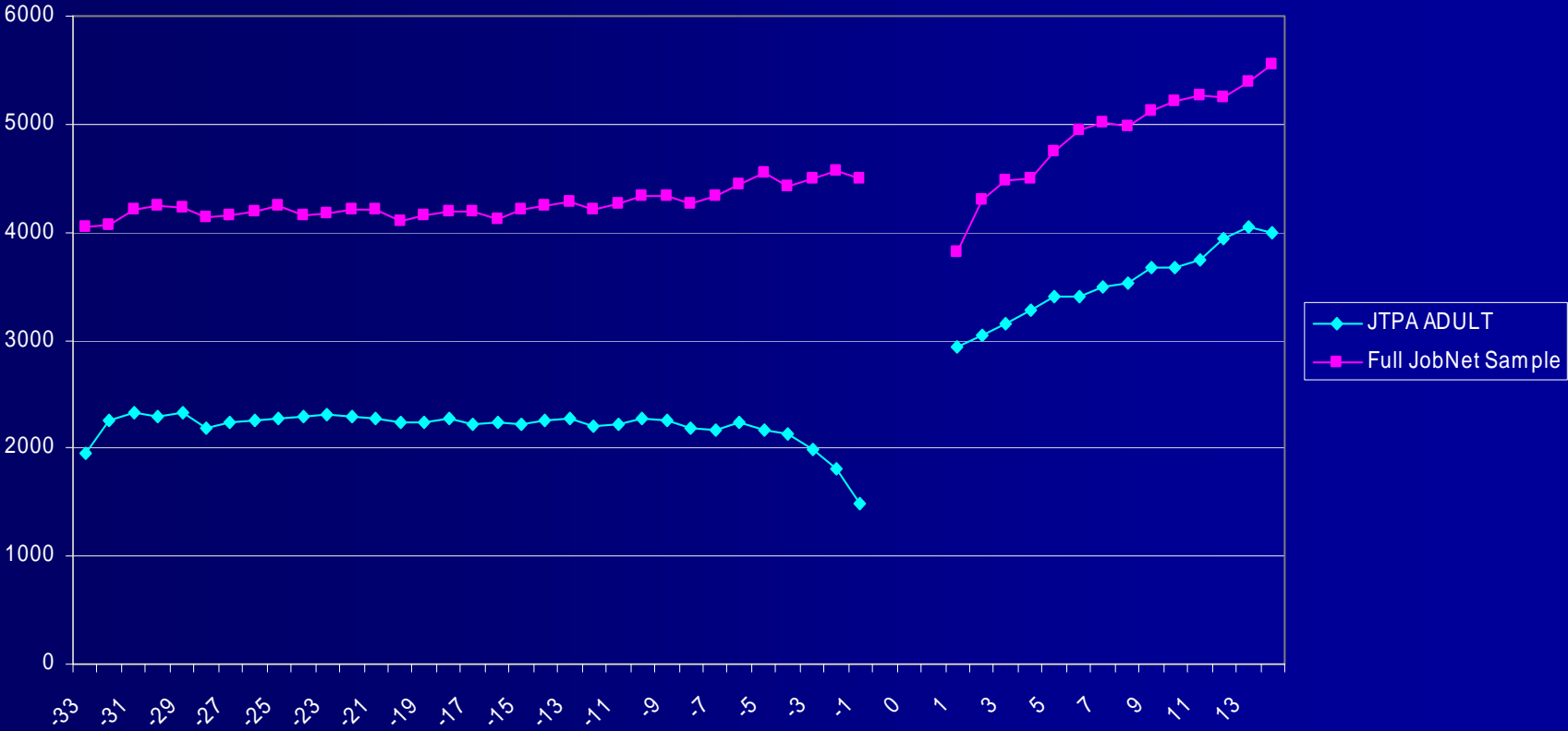
UI receipts/benefits

TANF/FS/Medicaid receipt/benefits

Methodology and Data

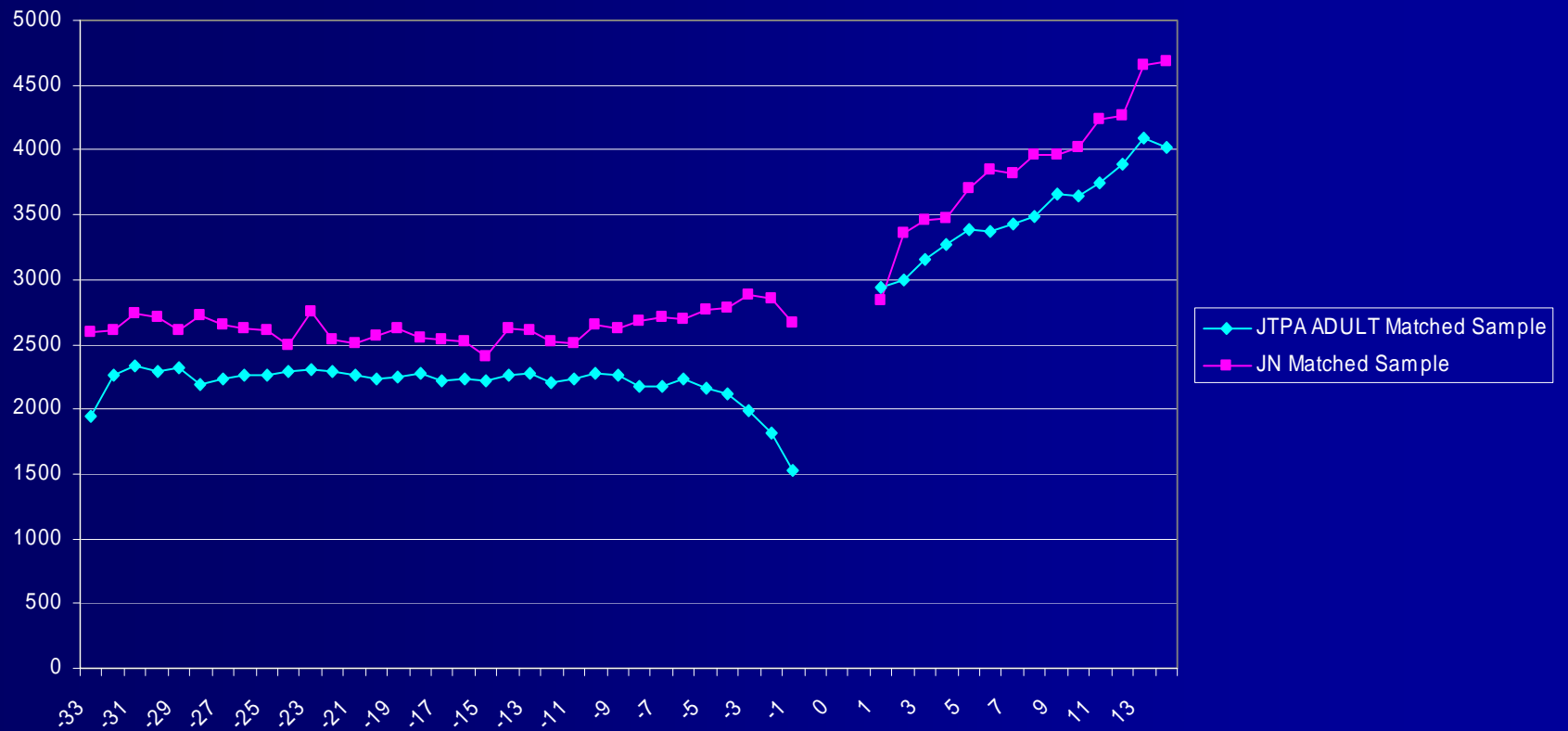
- Propensity score matching
(with replacement)
 - also did w/o replacement
 - experimented w/characteristics matching

JTPA2A Earnings Trend, 1997/1998



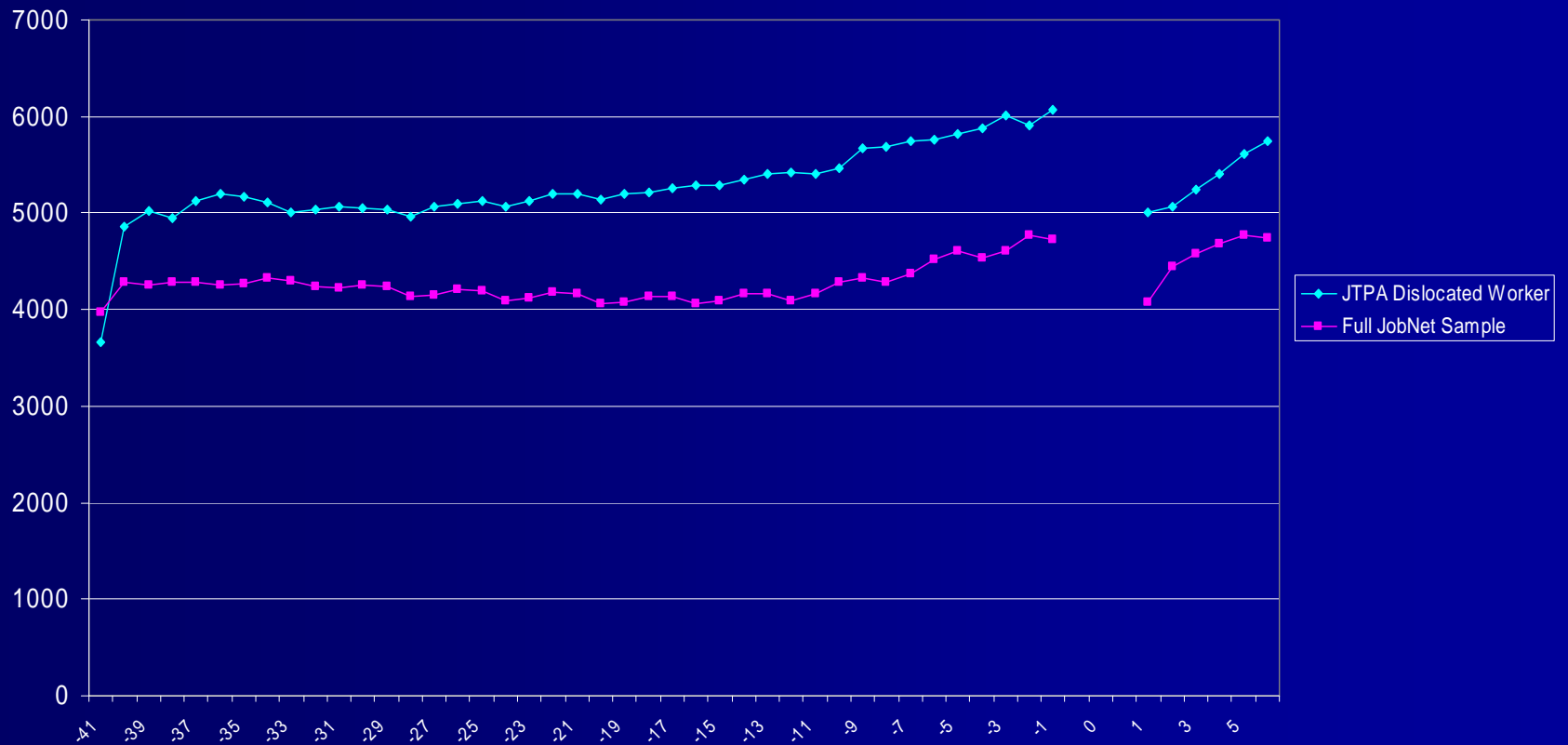
JTPA2A

Earnings Trend, 1997/1998



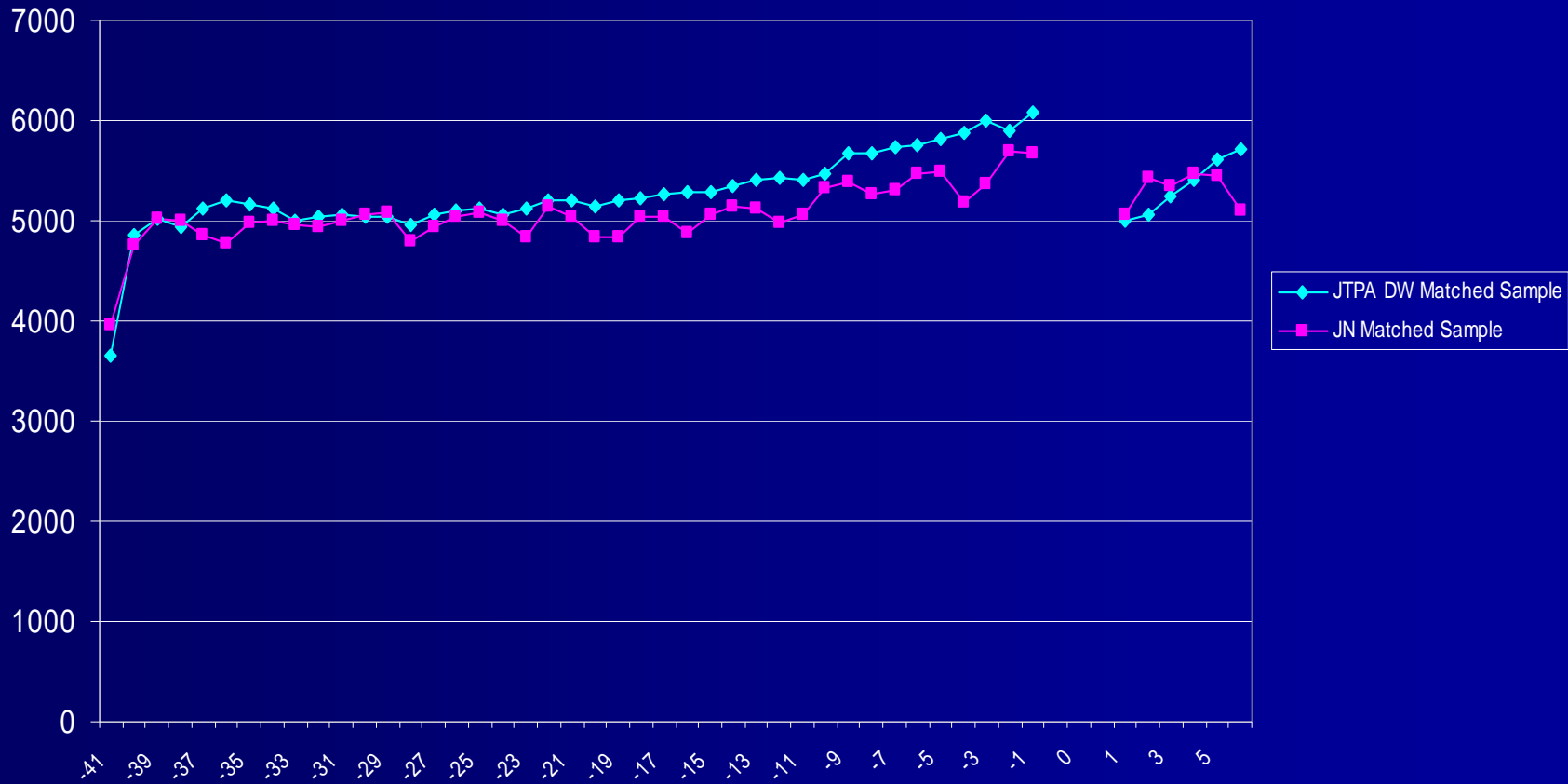
JTPA3

Earnings Trend, 1999/2000



JTPA3

Earnings Trend, 1999/2000



Methodology and Data

- Outcome variables (quarterly basis)
 - Employment
 - Hourly wage
 - Hours worked
 - Earnings
 - Received UI/benefits
 - Received TANF/benefits
 - Received FS/benefits
 - Enrolled in Medicaid

Methodology and Data

- Estimation techniques
 - Comparison of means
 - Regression-adjustment of levels
 - Difference-in-differences
 - Regression-adjustment of diff-in-diff
- State chose preferred specification:
 - R.A. levels for youth and dislocated worker programs
 - R.A. diff-in-diff for adult, non-dislocated worker programs

Results

JTPA II-A (Disadvantaged Adults)

Net Impact Estimates:

<u>Outcome</u>	<u>Short-Term (1)</u>	<u>Short-Term (2)</u>	<u>Long-Term</u>
Employment	3.6%	10.9%	7.4%
Hourly wage	-\$0.02*	\$0.65*	\$0.57
Hours worked	7.6* hrs.	23.0 hrs.	23.9 hrs.
Earnings	\$105*	\$393	\$543
Receive TANF	4.6%	-12.6%	-6.7%
Receive FS	8.0%	-10.0%	-5.6%
Enroll in Medicaid	9.3%	-8.4%	-10.5%
Receive UI benefits	--	--	4.7%

Short-term (1): = 3 quarters after exit in 99/00

Short-term (2): = 3 quarters after exit in 97/98

Long-term: = ave. of 8-11 quarters after exit in 97/98

*Not statistically significant at .10 level; 2001:q1\$

Benefits and Costs

Benefit/Cost	First 2.5 years		Lifetime (until 65)	
	Participant	Public	Participant	Public
Earnings	\$3,773	--	\$61,565	--
Fringe Benefits	775	--	12,313	--
Taxes	-949	949	-15,484	15,484
<u>Transfers</u>				
UI	486	-486	-400	400
TANF	-2,292	2,292	-425	425
FS	-413	413	-902	902
Medicaid	-393	393	-1,413	1,413
<u>Costs</u>				
Foregone earns.	-360	--	-360	--
Program costs	--	-3,384	--	-3,384

JTPA II-C

(Disadvantaged Youth)

Net Impact Estimates:

<u>Outcome</u>	<u>Short-Term</u>	<u>Long-Term</u>
Employment	-4.0%*	5.3%
Hourly wage	-\$0.96	-\$0.71*
Hours worked	10.4* hrs.	2.3* hrs.
Earnings	\$86*	-\$72*
Receive TANF	7.9%	-0.7%*
Receive FS	8.4%	5.0%
Enroll in Medicaid	16.3%	2.9%*
Receive UI benefits	--	3.5%

Short-term: = 3 quarters after exit in 99/00

Long-term: = ave. of 8-11 quarters after exit in 97/98

*Not statistically significant at .10 level; 2001:q1\$

Benefits and Costs

Benefit/Cost	First 2.5 years		Lifetime (until 65)	
	Participant	Public	Participant	Public
Earnings	-\$1,326	--	\$28,853	--
Fringe Benefits	-265	--	5,771	--
Taxes	334	-334	-7,257	7,257
<u>Transfers</u>				
UI	175	-175	4,456	-4,456
TANF	-2,261	2,261	-942	942
FS	-54	54	-3,694	3,694
Medicaid	47	-47	353	-353
<u>Costs</u>				
Foregone earns.	-343	--	-343	--
Program costs	--	-2,325	--	-2,325

JTPA III

(Dislocated Workers)

Net Impact Estimates:

<u>Outcome</u>	<u>Short-Term (1)</u>	<u>Short-Term (2)</u>	<u>Long-Term</u>
Employment	2.2%	7.5%	7.3%
Hourly wage	-\$1.30	-\$0.47	-\$0.08*
Hours worked	17.0 hrs.	19.6 hrs.	26.6 hrs.
Earnings	-\$397	\$234	\$466
Receive TANF	1.2%	-0.7%	-0.4%*
Receive FS	1.6%	-1.6%	-1.6%
Enroll in Medicaid	2.2%	-2.2%	-2.5%
Receive UI benefits	--	--	0.2%*

Short-term (1): = 3 quarters after exit in 99/00

Short-term (2): = 3 quarters after exit in 97/98

Long-term: = ave. of 8-11 quarters after exit in 97/98

*Not statistically significant at .10 level; 2001:q1\$

Benefits and Costs

Benefit/Cost	First 2.5 years		Lifetime (until 65)	
	Participant	Public	Participant	Public
Earnings	\$4,333	--	\$75,293	--
Fringe Benefits	867	--	15,059	--
Taxes	-1,090	1,090	-18,936	18,936
<u>Transfers</u>				
UI	526	-526	-1,827	1,827
TANF	-97	97	-217	217
FS	-39	39	45	-45
Medicaid	-87	87	-311	311
<u>Costs</u>				
Foregone earns.	-12,175	--	-12,175	--
Program costs	--	-2,575	--	-2,575

Apprenticeship

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Net Impact Estimates:

<u>Outcome</u>	<u>Short-Term</u>	<u>Long-Term</u>
Employment	5.4%	5.3%
Hourly wage	\$5.03	\$3.72
Hours worked	11.7 hrs.	11.6 hrs.
Earnings	\$2,030	\$1,908
Receive TANF	-0.2%*	-0.1%*
Receive FS	-1.3%	-1.6%
Enroll in Medicaid	-2.4%	-3.1%
Receive UI benefits	--	5.3%

Short-term: = 3 quarters after exit in 99/00

Long-term: = ave. of 8-11 quarters after exit in 97/98

*Not statistically significant at .10 level; 2001:q1\$

Job Preparation (at Community Colleges)

Net Impact Estimates:

<u>Outcome</u>	<u>Short-Term</u>	<u>Long-Term</u>
Employment	7.6%	7.0%
Hourly wage	\$2.59	\$1.70
Hours worked	40.4 hrs.	44.8 hrs.
Earnings	\$1,470	\$1,185
Receive TANF	0.5%	-0.4%*
Receive FS	-0.4%*	-1.4%
Enroll in Medicaid	-0.7%*	-1.8%
Receive UI benefits	--	-0.7%*

Short-term: = 3 quarters after exit in 99/00

Long-term: = ave. of 8-11 quarters after exit in 97/98

*Not statistically significant at .10 level; 2001:q1\$

Benefits and Costs

Benefit/Cost	First 2.5 years		Lifetime (until 65)	
	Participant	Public	Participant	Public
Earnings	\$4,275	--	\$96,263	--
Fringe Benefits	855	--	19,253	--
Taxes	-1,075	1,075	-24,210	24,210
<u>Transfers</u>				
UI	-7	7	-1,767	1,767
TANF	-469	469	-905	905
FS	-20	20	217	-217
Medicaid	-39	39	-141	141
<u>Costs</u>				
Foregone earns.	-1,375	--	-1,375	--
Program costs	-3,118	-6,916	-3,118	-6,916

Adult Basic Skills (at Community Colleges)

Net Impact Estimates:

<u>Outcome</u>	<u>Short-Term</u>	<u>Long-Term</u>
Employment	-5.2%	1.6%
Hourly wage	\$0.28*	-\$0.20
Hours worked	-48.8 hrs.	-4.9 hrs.
Earnings	-\$613	-\$43*
Receive TANF	20.9%	7.6%
Receive FS	18.2%	6.7%
Enroll in Medicaid	19.4%	8.4%
Receive UI benefits	--	-2.1%

Short-term: = 3 quarters after exit in 99/00

Long-term: = ave. of 8-11 quarters after exit in 97/98

*Not statistically significant at .10 level; 2001:q1\$

Benefits and Costs

Benefit/Cost	First 2.5 years		Lifetime (until 65)	
	Participant	Public	Participant	Public
Earnings	\$660	--	\$5,263	--
Fringe Benefits	132	--	1,053	--
Taxes	-166	166	-1,324	1,324
<u>Transfers</u>				
UI	41	-41	-3,160	3,160
TANF	861	-861	228	-228
FS	346	-346	460	-460
Medicaid	315	-315	1,130	-1,130
<u>Costs</u>				
Foregone earns.	-278	--	-278	--
Program costs	--	-983	--	-983

Worker Retraining (Community Colleges)

Net Impact Estimates:

<u>Outcome</u>	<u>Short-Term</u>	<u>Long-Term</u>
Employment	8.0%	6.3%
Hourly wage	\$0.54*	-\$0.44*
Hours worked	9.1* hrs.	35.1 hrs.
Earnings	\$147*	\$423
Receive TANF	-0.0%*	-0.9%
Receive FS	-0.5%*	-3.3%
Enroll in Medicaid	-1.1%*	-2.4%
Receive UI benefits	--	-1.5%*

Short-term: = 3 quarters after exit in 99/00

Long-term: = ave. of 8-11 quarters after exit in 97/98

*Not statistically significant at .10 level; 2001:q1\$

Benefits and Costs

Benefit/Cost	First 2.5 years		Lifetime (until 65)	
	Participant	Public	Participant	Public
Earnings	\$2,772	--	\$66,268	--
Fringe Benefits	554	--	13,254	--
Taxes	-697	697	-16,666	16,666
<u>Transfers</u>				
UI	-250	250	-2,350	2,350
TANF	-136	136	95	-95
FS	-66	66	-453	453
Medicaid	-78	78	-283	283
<u>Costs</u>				
Foregone earns.	-14,497	--	-14,497	--
Program costs	-2,133	-4,692	-2,133	-4,692

Private Career Schools

Net Impact Estimates:

<u>Outcome</u>	<u>Short-Term</u>	<u>Short-Term (Completers)</u>
Employment	2.6%	8.2%
Hourly wage	-\$0.25*	\$0.73
Hours worked	-4.9* hrs.	15.1 hrs.
Earnings	\$10*	\$373
Receive TANF	2.7%	-0.9%*
Receive FS	2.9%	-2.6%
Enroll in Medicaid	3.8%	-0.7%*
Receive UI benefits	--	--

Short-term: = 3 quarters after exit in 99/00

Long-term: = not estimated

*Not statistically significant at .10 level; 2001:q1\$

Secondary Voc. Tech. Education

Net Impact Estimates:

<u>Outcome</u>	<u>Short-Term</u>	<u>Long-Term</u>
Employment	5.5%	5.7%
Hourly wage	\$0.29*	\$0.50
Hours worked	11.4 hrs.	27.1 hrs.
Earnings	\$112	\$451
Receive TANF	0.0%*	0.1%*
Receive FS	-0.4%	0.1%*
Enroll in Medicaid	-0.6%	-0.3%*
Receive UI benefits	--	1.0%

Short-term: = 3 quarters after exit in 99/00

Long-term: = ave. of 8-11 quarters after exit in 97/98

*Not statistically significant at .10 level; 2001:q1\$

Benefits and Costs

Benefit/Cost	First 2.5 years		Lifetime (until 65)	
	Participant	Public	Participant	Public
Earnings	\$3,041	--	\$59,363	--
Fringe Benefits	608	--	11,873	--
Taxes	-765	765	-14,930	14,930
<u>Transfers</u>				
UI	10	-10	3,201	-3,201
TANF	-140	140	123	-123
FS	-19	19	332	-332
Medicaid	4	-4	29	-29
<u>Costs</u>				
Foregone earns.	-386	--	-386	--
Program costs	--	-870	--	-870

Conclusions and Implications

- System has positive impacts on earnings and employment

Program	<u>Long-term</u>		<u>Lifetime</u>
	<u>Earnings</u>	<u>Employment</u>	<u>Earnings**</u>
JTPA II-a	\$543	7.4%	\$61,565
JTPA II-c	-\$72*	5.3%	\$28,853
JTPA III	\$466	7.3%	\$75,293
Apprenticeship	\$1,908	5.3%	--
Job Prep	\$1,185	7.0%	\$96,263
Ad. Basic Skills	-\$43*	1.6%	\$5,263
Worker Retraining	\$423	6.3%	\$66,268
Private Career Schools	--	--	--
Secondary Voc. Tech.	\$451	5.7%	\$59,363

*Not significant

** Discounted

Conclusions and Implications (Continued)

- High School voc. tech. has positive outcomes (replication of other studies)
- Dislocated workers and worker retraining have high foregone earnings and relatively low short-term outcomes. But, positive long-term outcomes indicate that participants need to be patient/persistent.

Conclusions and Implications (Continued)

- Job preparation at community colleges has good return on investment
- Apprenticeship has extremely high impacts on earnings and hourly wages, esp. for completers

Table 1
Short-Run^a Net Impacts of Washington's Education and Training System, by Program

Program	Net Employment Impact (In percentage points)	Net Quarterly Earnings Impacts ('01 \$)
JTPA 2a	3.6%	\$105**
JTPA 2c	-4.0%	\$86**
JTPA 3	2.2%	-\$397
Comm. College ABE	-5.2%	-\$613
Comm. College Job Prep	7.6%	\$1,470
Comm. College Worker Retraining	8.0%	\$147**
Private Career Schools	2.6%	\$10**
Apprenticeships	5.4%	\$2,030
High School Career Technical Ed.	5.5%	\$112

^aDefined as three quarters after exit.

**Not statistically significant at the 0.10 level

Table 2
Longer-Run^a Net Impacts of Washington's Education and Training System, by Program

Program	Net Employment Impact (In percentage points)	Net Quarterly Earnings Impacts ('01 \$)
JTPA 2a	7.4%	\$543
JTPA 2c	5.3%	-\$72**
JTPA 3	7.3%	\$466
Comm. College ABE	1.6%	-\$43**
Comm. College Job Prep	7.0%	\$1,185
Comm. College Worker Retraining	6.3%	\$423
Apprenticeships	5.3%	\$1,908
High School Career Technical Ed.	5.7%	\$451

^aDefined as average over quarters 8–11 after exit.

**Not statistically significant at the 0.10 level

Table 3
Discounted Benefits and Costs of Washington's Education and Training System, by Program

Program	First 2.5 years		Lifetime	
	Participant	Public	Participant	Public
JTPA 2a	Bene. = \$987 Costs = \$360	Bene. = \$3,561 Costs = \$3,384	Bene. = \$55,254 Costs = \$ 360	Bene. = \$18,624 Costs = \$ 3,384
JTPA 2c	Bene. = -\$3,350 Costs = \$ 343	Bene. = \$1,759 Costs = \$2,325	Bene. = \$27,540 Costs = \$ 343	Bene. = \$ 7,084 Costs = \$ 2,325
JTPA 3	Bene. = \$ 4,413 Costs = \$12,175	Bene. = \$ 787 Costs = \$2,575	Bene. = \$69,106 Costs = \$12,175	Bene. = \$21,246 Costs = \$ 2,575
Comm. College ABE	Bene. = \$2,189 Costs = \$ 278	Bene. = -\$1,397 Costs = \$ 983	Bene. = \$3,650 Costs = \$ 278	Bene. = \$2,666 Costs = \$ 983
Comm. College Job Prep	Bene. = \$3,520 Costs = \$4,493	Bene. = \$1,610 Costs = \$6,916	Bene. = \$88,710 Costs = \$ 4,493	Bene. = \$26,806 Costs = \$ 6,916
Comm. College Worker Retraining	Bene. = \$ 2,099 Costs = \$16,630	Bene. = \$1,227 Costs = \$4,692	Bene. = \$59,865 Costs = \$16,630	Bene. = \$19,657 Costs = \$ 4,692
High School Career Technical Ed.	Bene. = \$ 2,739 Costs = \$ 386	Bene. = \$ 910 Costs = \$ 870	Bene. = \$59,991 Costs = \$ 386	Bene. = \$11,245 Costs = \$ 870

Note: Benefits for a participant include discounted values of earnings and fringe benefits less taxes plus income transfers (TANF, Food Stamps, Medicaid, UI benefits); for the public, benefits include tax receipts minus transfer payments. Costs include program costs (public and participant, if tuition/fees) and foregone earnings (participant).