



# **Influence of Inter-professional Education on Student Knowledge, Attitudes and Beliefs of One Health. Preliminary results.**

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# Inter-Professional Education

**What if, instead of one health care professional focusing on your medical needs, a team of nine such professionals worked together to give you the best possible diagnosis and treatment?**

## **WHO (2010): Framework for Action on Inter-Professional Education & Collaborative Practice**

- Inter-professional education occurs when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes.**
- Inter-professional education is a necessary step in preparing a 'collaborative practice-ready' health workforce that is better prepared to respond to local health needs.**



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# IPE Curriculum

- **Required, comprehensive program for health professional students.**
- **9 health care disciplines: Medicine, Optometry, dental medicine, podiatric medicine, veterinary medicine, physical therapy, physician assistant, nursing and pharmacy.**
- **Threaded and integrated into the respective professional programs.**
- **Includes activities such as clinical scenarios, IPE team based patient safety and disaster management activities; patient care experiences at the Patient Care Center and documentation of IPE experiences at outside clinical rotations.**



## **IPE Program Outcomes:**

**The Western University graduate will:**

**Demonstrate an understanding of other health professionals  
Provide and promote team approach to patient care and  
health care management**

## Student Respondent Enrollment by College

College	Frequency	Percent
Allied Health	27	7.9
Dental Medicine	25	7.3
Graduate Nursing	7	2.0
Nursing	6	1.7
Optometry	16	4.7
<b>Osteopathic Medicine</b>	<b>133</b>	<b>38.8</b>
Pharmacy	27	7.9
Podiatric Medicine	10	2.9
<b>Veterinary Medicine</b>	<b>55</b>	<b>16.0</b>
Physician Assistant	1	.3
Total	307	89.5
Missing System	36	10.5
Total	343	100.0

## Students' Self-Assessment of Ability to Define "One Health"

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	Frequency	Percent
Yes	134	71.3 (Correct: 44.1)
No	54	28.7
Total	188	100

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# Correct definition and Awareness of Environment Component

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	Correctly defined One Health	Aware of Environment component
<b>Veterinary</b>	<b>76</b> (n=42)	<b>21</b> (n=9)
<b>Medical</b>	<b>30.8</b> (n=41)	<b>36.5</b> (n=15)

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# Basic study design

- **5 point Likert scale**
- **37 questions**
- **Calculated means for responses and compared between professions**

Level of Agreement	Point value
Strongly agree	5
Agree	4
Neither agree nor disagree	3
Disagree	2
Strongly disagree	1

- **T test for comparison of means was used to assess statistical significance**

# Comparison of Means of Zoonoses and Infectious Diseases Statements

Zoonoses and Infectious Diseases Statements		N	Mean
Animal health can impact human health	Veterinary student	47	4.85
	Medical student	114	4.28
Animals can serve as disease sentinels for human health	Veterinary student	47	4.83
	Medical student	113	4.31
Humans and animals are not susceptible to many of the same chronic diseases	Veterinary student	47	1.66
	Medical student	113	2.69
Zoonotic diseases do not pose a serious threat to the health of the human population	Veterinary student	47	1.36
	Medical student	113	2.01
It is important to monitor animal populations in order to detect disease outbreaks as soon as they occur	Veterinary student	47	4.57
	Medical student	111	4.07
Many pathogens that get people sick also get animals sick	Veterinary student	47	4.47
	Medical student	110	3.73
Being knowledgeable in One Health will be important to my professional practice	Veterinary student	47	4.36
	Medical student	110	3.68

**Compared to medical students, veterinary students were statistically significantly more likely to strongly agree that:**

- **Animal health can impact human health**
- **Animals can serve as disease sentinels for human health**
- **Humans and animals are susceptible to many of the same chronic diseases**
- **Zoonotic diseases pose a serious threat to the health of the human population**
- **It is important to monitor animal populations in order to detect disease outbreaks as soon as they occur**
- **Many pathogens that get people sick also get animals sick**
- **Being knowledgeable in One Health will be important to their professional practice**

## Comparison of Means for Biomedical and Comparative Research Statements

	Biomedical and Comparative Research Statements	N	Mean	Std. Deviation
Research into obesity treatment and prevention translates well between animals and people	Veterinary student	47	4.00	.885
	Medical student	111	3.24	.765
Collaborative research between human and animal health workers in the field of obesity can result in more rapid research advances	Veterinary student	47	4.64	.568
	Medical student	111	3.81	.733

## **Comparison of Means for Biomedical and Comparative Research Statements**

**Compared to medical students, veterinary students were statistically significantly more likely to strongly agree that:**

- Research into obesity treatment and prevention translates well between animals and people**
- Collaborative research between human and animal health workers in the field of obesity can result in more rapid research advances.**

# Comparison of Means for Environmental Health Statements

	Environmental Health	N	Mean	Std. Dev
<b>Climate change can have direct and indirect effects on human and animal health</b>	<b>Veterinary student</b>	<b>47</b>	<b>4.57</b>	<b>.542</b>
	<b>Medical student</b>	<b>110</b>	<b>4.07</b>	<b>.875</b>
<b>Population encroachment can cause previously isolated diseases to come into contact with naïve human and animal populations</b>	<b>Veterinary student</b>	<b>47</b>	<b>4.55</b>	<b>.653</b>
	<b>Medical student</b>	<b>112</b>	<b>4.12</b>	<b>.732</b>

**Compared to medical students, veterinary students were statistically significantly more likely to strongly agree that:**

- **Animal health can impact human health**
- **Animals can serve as disease sentinels for human health**
- **Humans and animals are susceptible to many of the same chronic diseases**
- **Zoonotic diseases pose a serious threat to the health of the human population**
- **It is important to monitor animal populations in order to detect disease outbreaks as soon as they occur**
- **Many pathogens that get people sick also get animals sick**
- **Being knowledgeable in One Health will be important to their professional practice**

**Compared to medical students, veterinary students were statistically significantly more likely to strongly agree that:**

- Climate change can have direct and indirect effects on human and animal health**
- Population encroachment can cause previously isolated diseases to come into contact with naïve human and animal populations.**



# Comparison of Means for Human Animal Bond Statements

	Human Animal Bond Statements	N	Mean	Std. Deviation
People who own pets tend to be happier than those who do not	Veterinary student	47	4.11	.729
	Medical student	114	3.46	.854
Pets can serve important roles in helping patient recovery and morale	Veterinary student	47	4.66	.522
	Medical student	111	4.20	.685

**Compared to medical students, veterinary students were statistically significantly more likely to strongly agree that:**

- People who own pets tend to be happier than people who do not**
- Pets can serve important roles in helping patient recovery and morale**

## Comparison of Means for Human Animal Bond Statements Stratified by Ownership of Pet(s)

	Do you own any pets?	N	Mean	Std. Deviation
People who own pets tend to be happier than those who do not	1 Yes	137	3.93	.769
	2 No	114	3.31	1.014
Pets can serve important roles in helping patient recovery and morale	1 Yes	136	4.50	.596
	2 No	113	4.14	.766

**Compared to non pet owners, students who own pets were statistically significantly more likely to agree that:**

- People who own pets tend to be happier**
- Pets can serve important roles in helping patient recovery and morale**

## Comparison of Means for Perceptions of Effective Health Care Delivery Statements

	Effective Health Care Delivery Statements	N	Mean	Std. Deviation
<b>Our role as healthcare providers is not just to maintain health, but improve it</b>	Veterinary student	46	4.80	.453
	Medical student	111	4.40	.704
<b>Collaboration between human and animal health care providers is important for protecting the public health</b>	Veterinary student	47	4.64	.568
	Medical student	110	4.02	.704
<b>Our role as healthcare providers is not just to fight disease, but prevent it</b>	Veterinary student	46	4.83	.486
	Medical student	112	4.48	.697

**Compared to medical students, veterinary students were statistically significantly more likely to strongly agree that:**

- Their role as healthcare providers is not just to maintain health but to improve it and also not just to fight disease but prevent it**
- Collaboration between human and animal healthcare providers is important for protecting Public Health**

# Conclusion

- **There were significant differences between veterinary and medical students in their ability to define One Health and in their appreciation of One Health concepts.**
- **These results seem to reflect the professional differences that may be impacting the adoption of the One Health approach in the current public health arena.**
- **Greater emphasis should be paid to medical curricula to further advance and apply the One Health approach.**
- **Strengthening education regarding the environmental component of One Health is needed.**

# Limitation

- **The student knowledge of One Health was not assessed before taking the IPE course. It is hard to appreciate the educational value of IPE as it relates to One Health and quantify whether students were knowledgeable before the IPE course.**
- **Another study that includes a pre and post test of knowledge, attitudes and beliefs is underway.**



# **One Health through IPE at Western University of Health Sciences**

- **Western University should be commended for taking the step to expose students from all health professions to One Health through the IPE program.**
- **Having students from various professions in the same room and discussing common health issues is already a first step towards greater inter-sectoral collaboration.**
- **In real life, health professionals rarely have the opportunity to interact at conferences and meetings, to collaborate on projects or to communally address health issues.**

