

# 2014 Vector Transmitted Infections Study

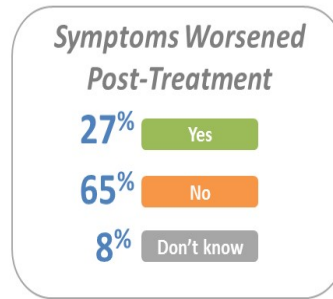
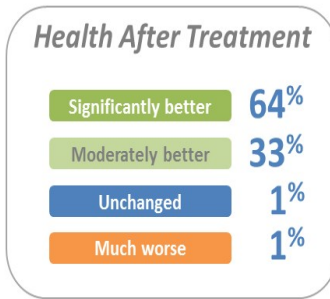
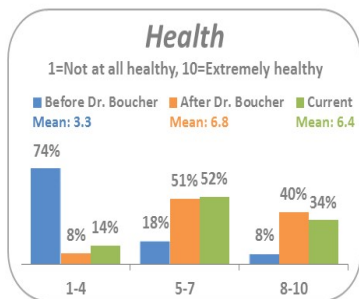
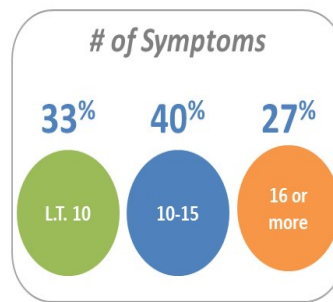
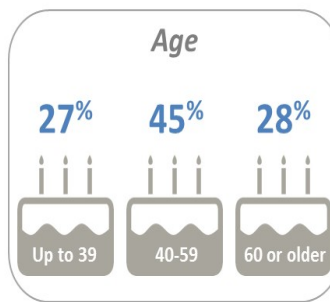
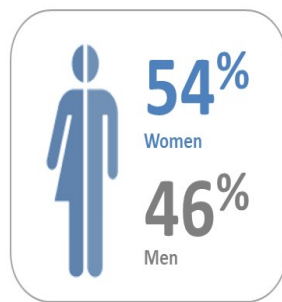
## Methodology

The following presents results of the **2014 Vector Transmitted Infections Study**.

- In December 2014, an online survey was undertaken with patients of Dr. Ben Boucher to gather feedback to help improve the diagnosis and treatment of vector transmitted infections.
- The survey was distributed to 96 patients and a total of 75 surveys were completed between December 9-29, 2014.
- This represents a response rate of 78% of all patients that initially agreed to participate in this study.
- All patients had provided their consent to be contacted by **Corporate Research Associates Inc.** to participate in this confidential study.

## Highlights

- This survey/case study shows a high participation rate and the overall results would suggest that the diagnosis and treatment of the patients involved in this study have benefitted from Dr. Boucher's work.
- The perceived benefits are supported by the high percentage of study participants that report being either completely cured or having their symptoms considerably relieved by Dr. Boucher's diagnosis and treatment.
- The high self-reported improvement in each of the symptoms identified previous to being treated by Dr. Boucher is strong evidence of the positive outcomes of his treatment.
- Further, the high percentage willing to recommend Dr. Boucher to others for the treatment of vector-transmitted disease is an endorsement of the perceived value of his treatment.
- It is worth noting that a high number of those that reported that their symptoms worsened after six months of treatment, did not have the opportunity to complete their treatment with Dr. Boucher as he discontinued his practice in this area.

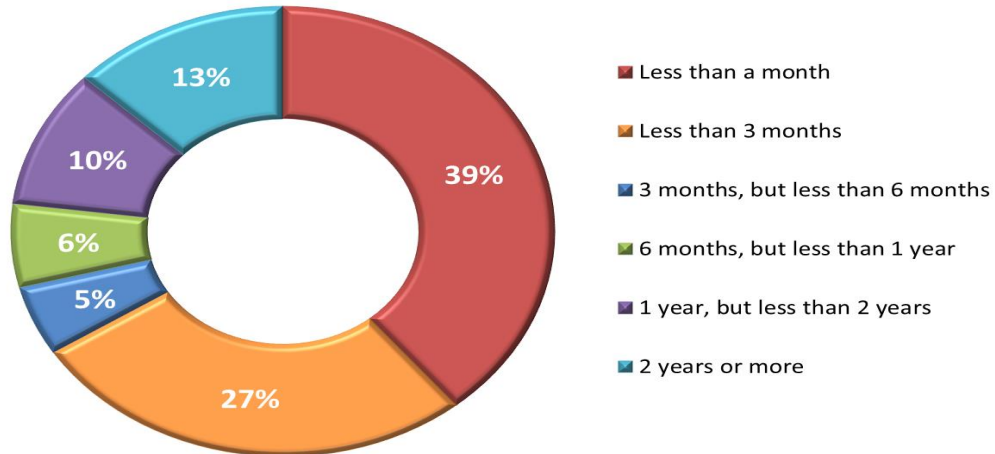


Q25, Q24, Q3, Q23, Q9, Q11, 13, Q15 (n=75)

## Timeframe Between Symptoms and Seeing Dr. Boucher

The vast majority of those participating in this study were treated by Dr. Boucher within three months of first experiencing their symptoms. (Tables 1/4)

### Time Between Experiencing Symptoms and Seeing Dr. Boucher



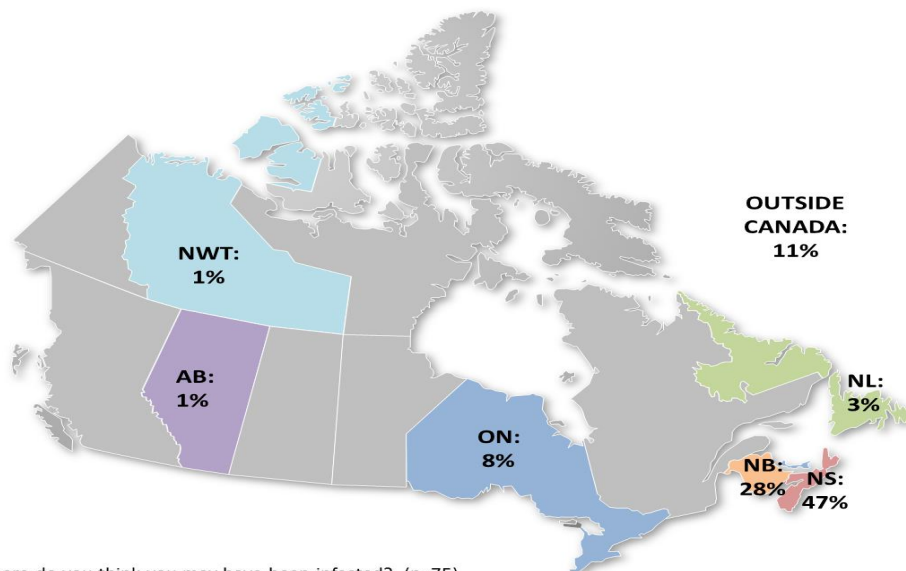
Q.1: When did you first experience the symptoms that eventually led you to see Dr. Boucher?

Q.4: When did you first seek medical help for the health problems that you eventually saw Dr. Boucher about? (n=66)

## Suspected Origin of Infection

In the majority of cases, the suspected origin of the infection was thought to be either in Nova Scotia or New Brunswick. (Table 2)

### Suspected Origin of Infection

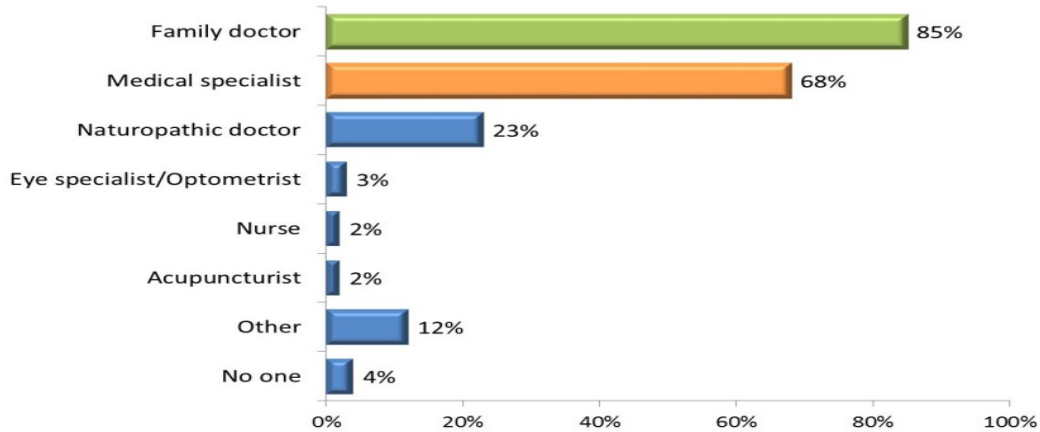


Q.2: Where do you think you may have been infected? (n=75)

## Contacted Prior to Seeing Dr. Boucher

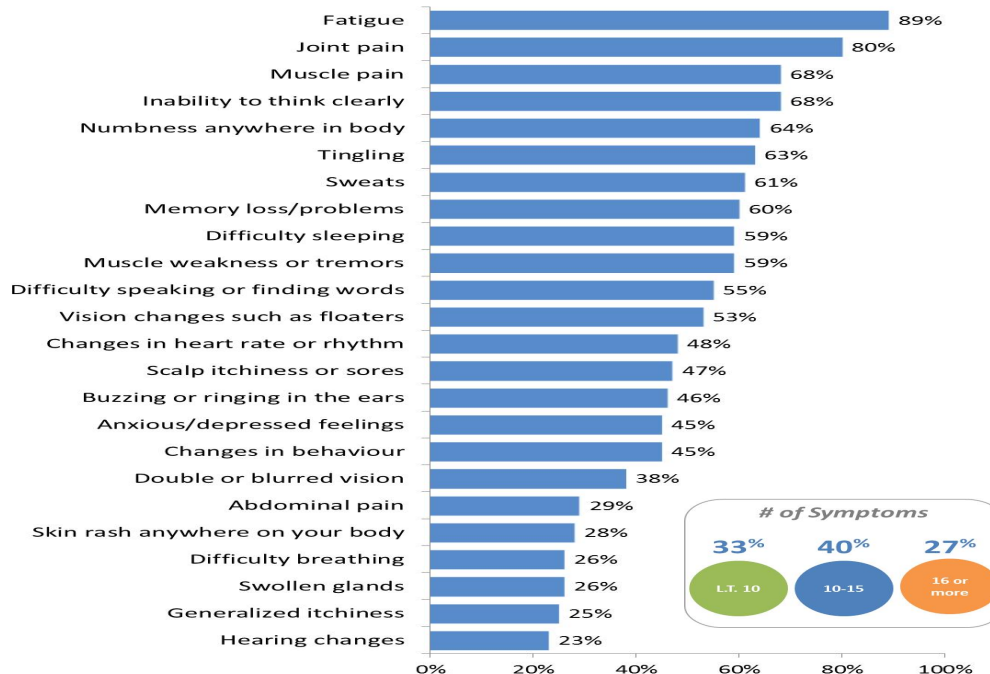
- It is apparent that most of those surveyed had seen more than one medical practitioner prior to seeing Dr. Boucher, including more than two-thirds that had been referred to a specialist. (Table 5)
- It is interesting that a quarter had also previously seen a naturopathic doctor.

### Contacted About Health Issues Prior to Seeing Dr. Boucher



Q.5: Prior to seeing Dr. Boucher about your medical problems, who did you contact about your health issues? (n=75)

### Symptoms Prior to Seeing Dr. Boucher

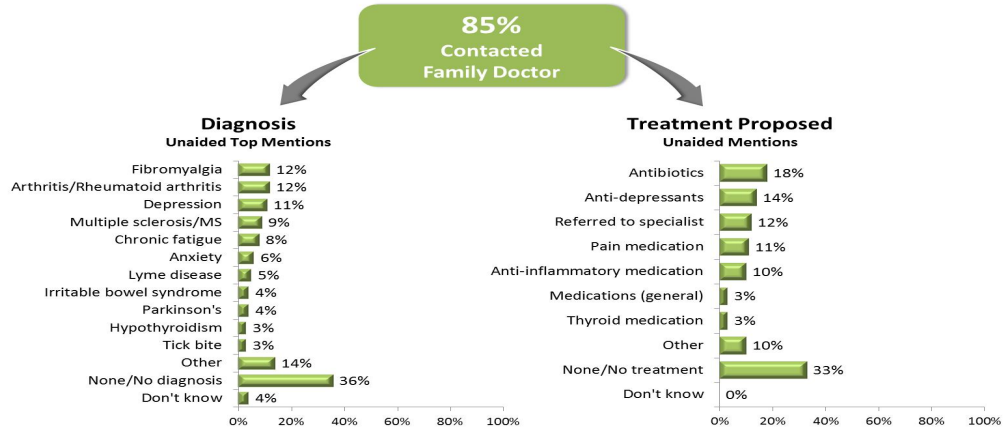


Q.3: Which of the following symptoms did you experience at that time? (n=75)

### Contacted Family Doctor Prior to Seeing Dr. Boucher

- Most of the study's participants had seen their family doctor for diagnosis and treatment of their symptoms. Only a small percentage of these doctors diagnosed a vector-transmitted disease, while more than a third received no diagnosis at all. (Table 5)
- The most frequent treatments included a regime of either antibiotics, anti-depressant or pain or anti-inflammatory medicines. Some were also referred to a specialist. Interestingly, among those that had contacted their family doctor for treatment, a third received no treatment at all. (Tables 6)

### Contact, Diagnosis and Treatment Prior to Seeing Dr. Boucher

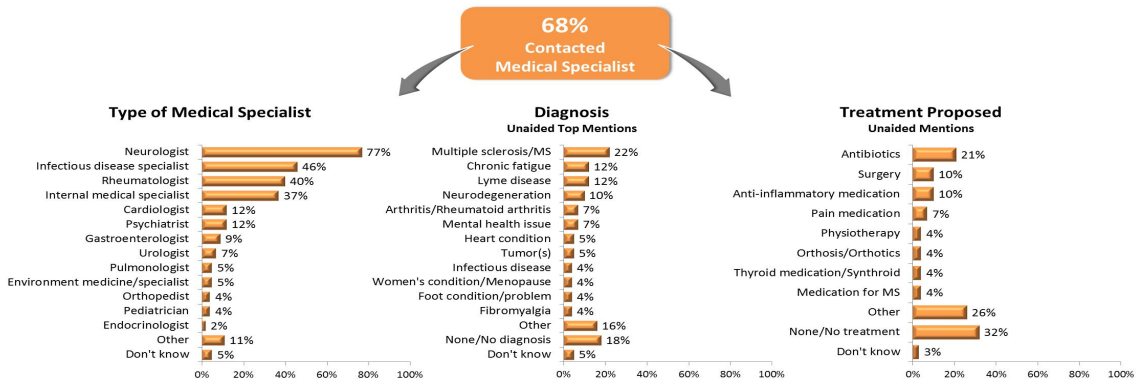


Q.5: Prior to seeing Dr. Boucher about your medical problems, who did you contact about your health issues? (n=75)  
 Q.6: [IF 'FAMILY DOCTOR' IN Q.5] What was the diagnosis and treatment proposed by your family doctor? (n=64)

### Contacted Medical Specialist Prior to Seeing Dr. Boucher

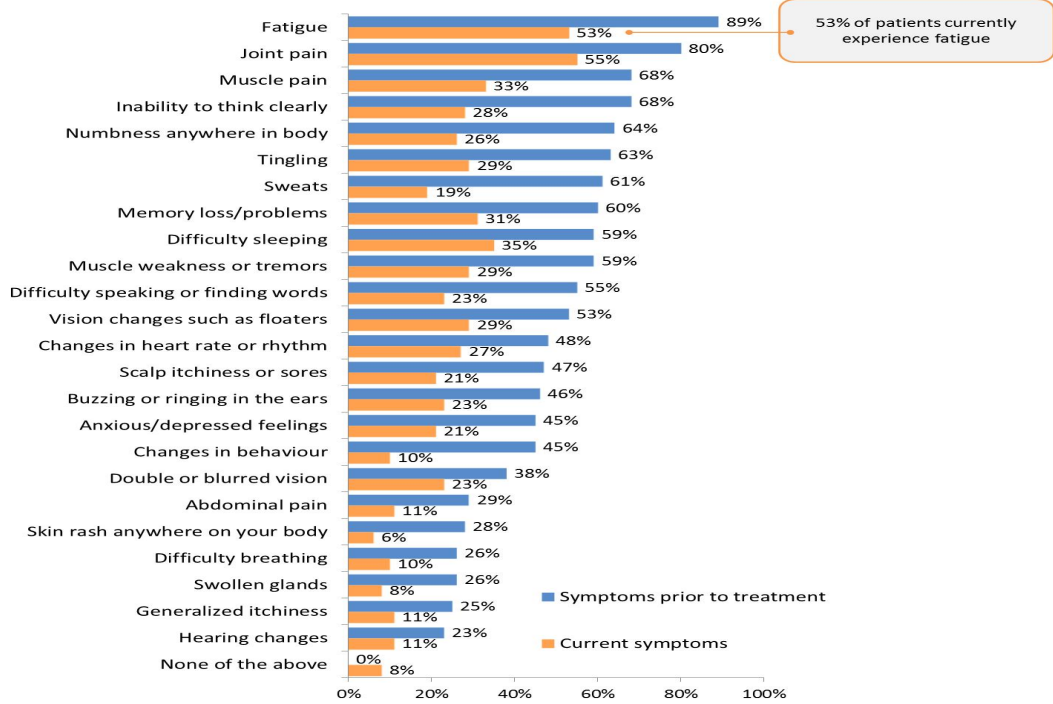
- Among those who had contacted a specialist, it is clear that more than one specialist was seen. A neurologist was the most frequent specialist seen by those using a specialist to diagnose their disease, followed by an infectious disease specialist, a rheumatologist and an internal medical specialist. (Table 7)
- MS was the most frequent diagnosis from these specialists. There was a slightly higher diagnosis of vector transmitted disease among specialists relative to the diagnosis by family doctors, but still relatively low. Nearly two in ten received no diagnosis at all. (Table 8 Diagnosis)
- Antibiotics was the most frequently prescribed treatment from specialists, followed by surgery and the use of pain or anti-inflammatory medicines. For a third of those that had consulted with a specialist, there was no reported treatments offered. (Table 8 Treatment)

### Contact, Diagnosis and Treatment Prior to Seeing Dr. Boucher



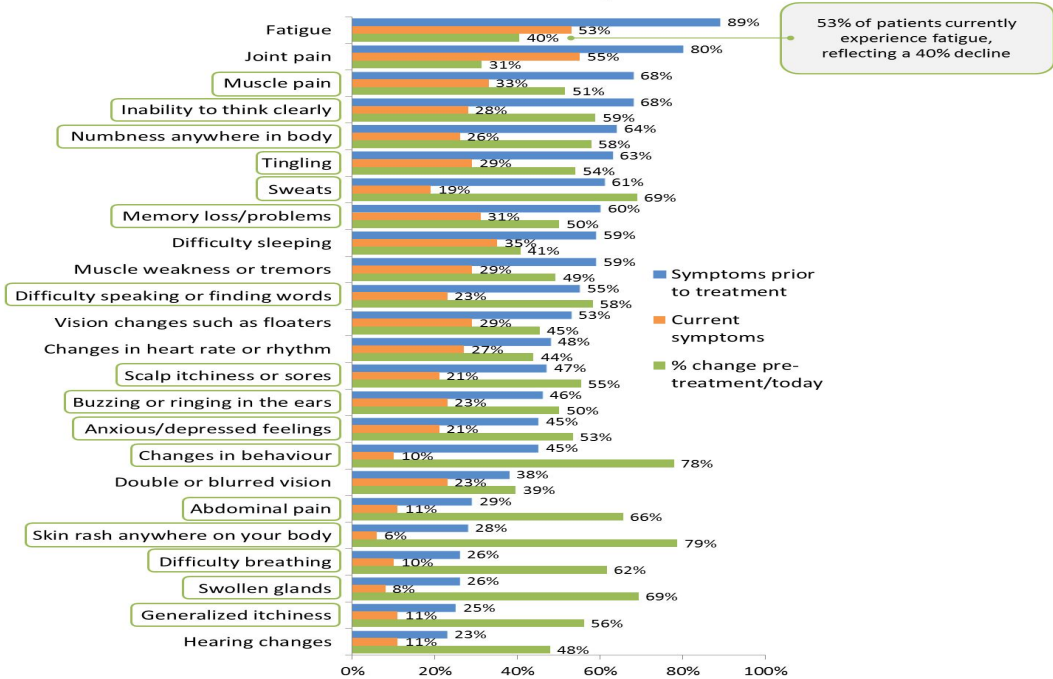
Q.5: Prior to seeing Dr. Boucher about your medical problems, who did you contact about your health issues? (n=75)  
 Q.7: [IF 'MEDICAL SPECIALIST' IN Q.5] What type of medical specialist(s) did you see? (n=43)  
 Q.8: [IF 'MEDICAL SPECIALIST' IN Q.5] What was the diagnosis and treatment proposed by the medical specialist(s) that you saw, before you saw Dr. Boucher? (n=43)  
 Note: Sample size reflects those who chose 'medical specialist' in Q.5 prior to coding.

## Symptoms Prior to Treatment vs. Current Symptoms



Q.3: Which of the following symptoms did you experience at that time? (n=75)  
 Q.12: [IF SYMPTOM SELECTED IN Q.3] And which of the symptoms that you had prior to being treated by Dr. Boucher still remain today? (n=75)

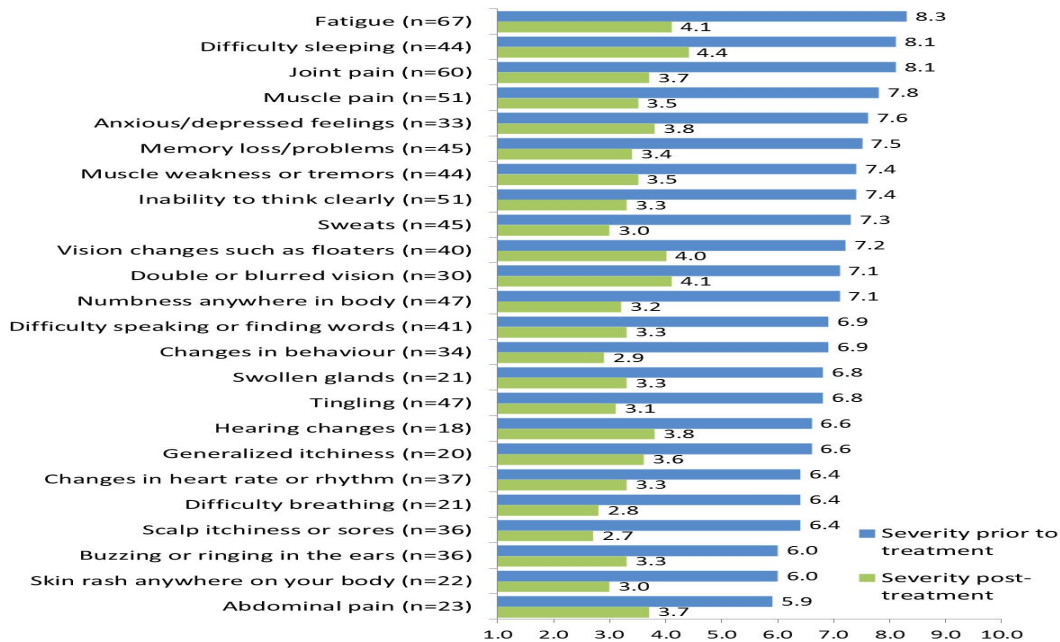
## % Change Between Symptoms Prior to Treatment and Today



Q.3: Which of the following symptoms did you experience at that time? (n=75)  
 Q.12: [IF SYMPTOM SELECTED IN Q.3] And which of the symptoms that you had prior to being treated by Dr. Boucher still remain today? (n=75)  
 Q3/Q12: % change between symptoms before treatment and symptoms after treatment. (n=75)

## Severity of Pain or Discomfort of Symptoms Prior to Treatment vs. Post-Treatment by Dr. Boucher

Rating on 10-pt Scale: 1=Not at all severe, 10=Extremely severe

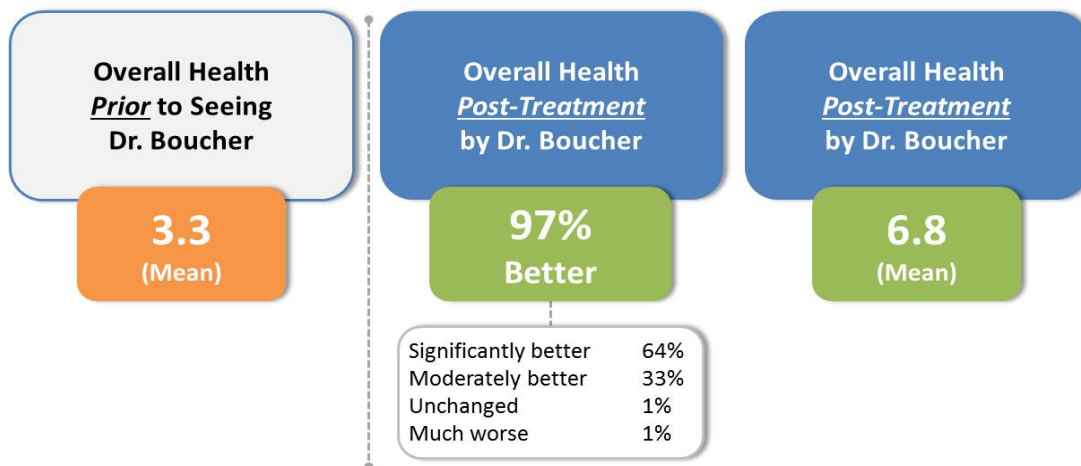


Q.10: Immediately prior to seeing Dr. Boucher and beginning treatment, how severe, in terms of pain or discomfort, would you rate each of the symptoms that you were experiencing on a scale of "1" to "10" where "1" represents "not at all severe" and "10" represents "extremely severe"?

Q.11: After being treated by Dr. Boucher, how severe, in terms of pain and discomfort, were each of the symptoms that you had been experiencing prior to seeing Dr. Boucher using the same "ten-point" scale?

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## Overall Health Prior to Treatment and Post-Treatment by Dr. Boucher



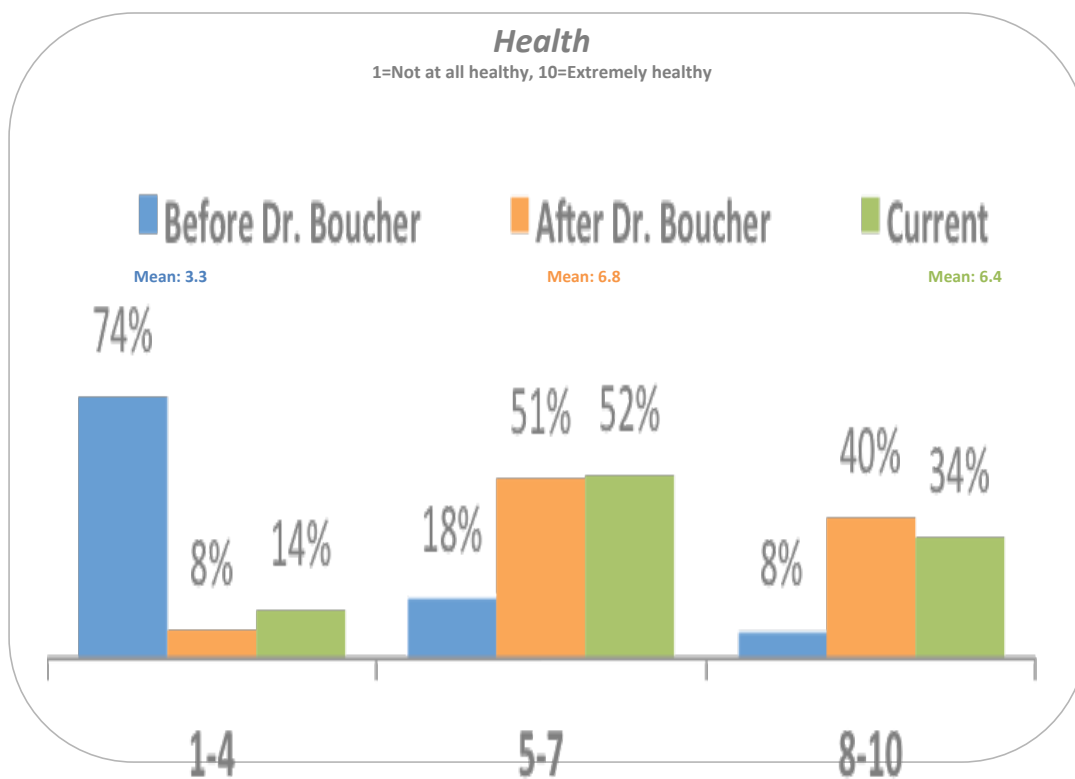
Q.9: Prior to seeing Dr. Boucher, how would you rate your overall health on a "ten-point" scale, where "1" represents "not at all healthy" and "10" represents "extremely healthy"? (n=75)

Q.13: After seeing and being treated by Dr. Boucher, would you say that, overall, your health issues were significantly better, moderately better, unchanged, moderately worse, or much worse? (n=75)

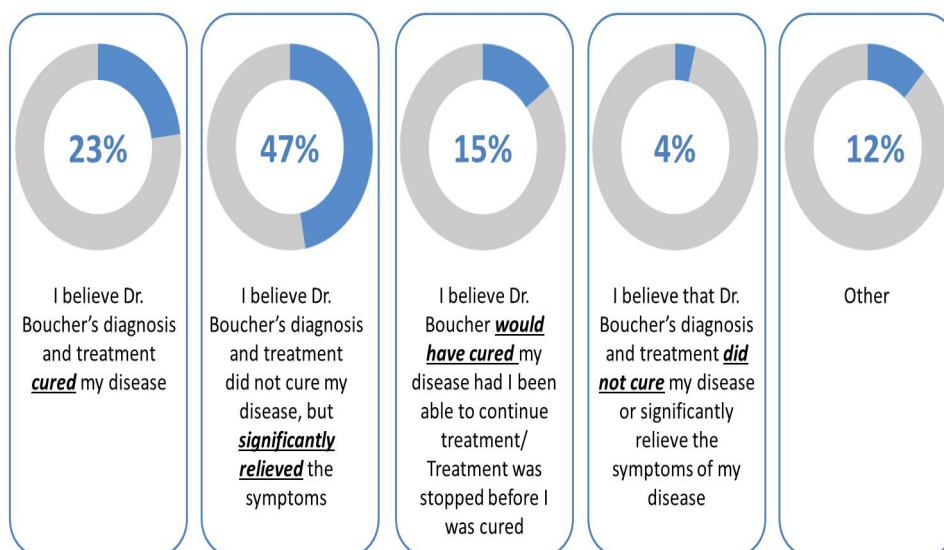
Q.14: Using a scale of "1" to "10" where "1" represents "not at all healthy" and "10" represents "extremely healthy", how would you rate your overall health after being treated by Dr. Boucher? (n=75)

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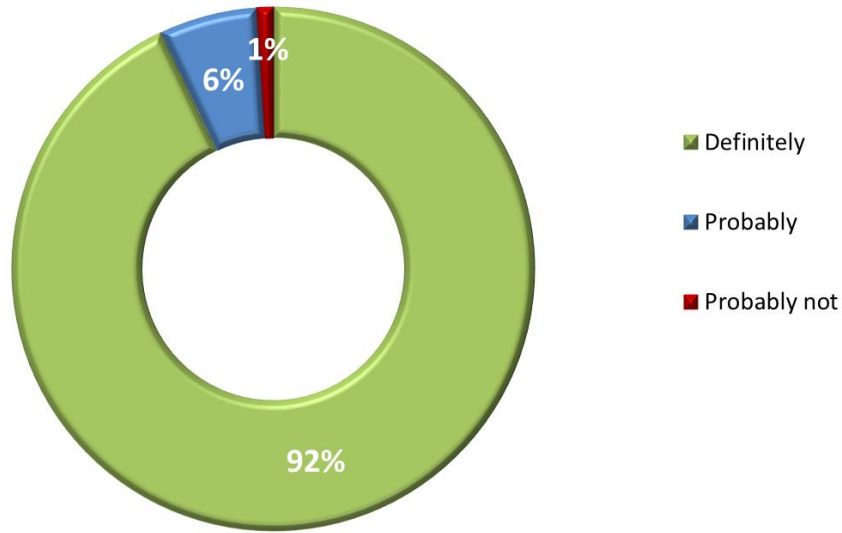


### Best Represents Opinion of Diagnosis and Treatment Provided by Dr. Boucher



Q.17: Which of the following statements best represents your opinion of the diagnosis and treatment provided to you by Dr. Boucher? (n=75)

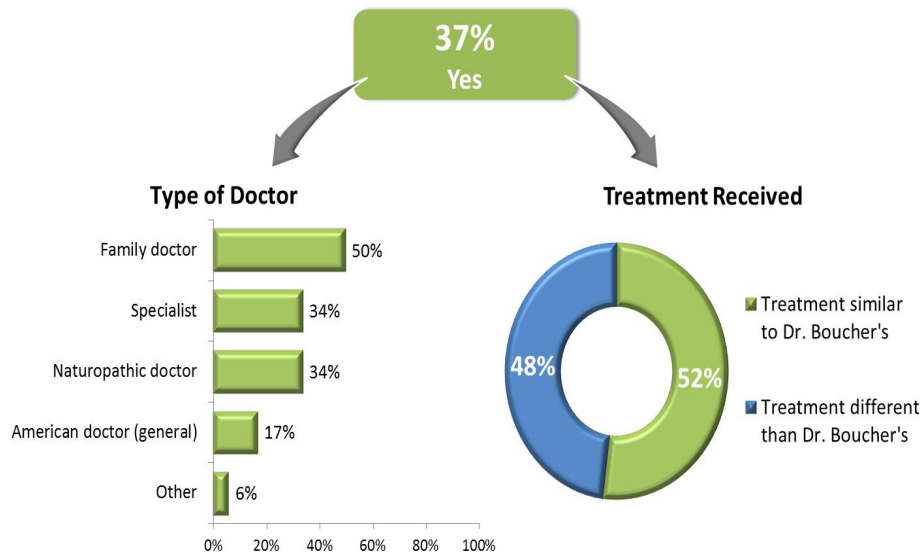
## Likelihood of Recommending Dr. Boucher to Others Suffering from Vector Transmitted Infections/Diseases



Q.18: Based on your experience, how likely would you be to recommend Dr. Boucher to others suffering from vector transmitted infections or other similar types of diseases? Would you definitely, probably, probably not, or definitely not recommend Dr. Boucher to others in a similar position? (n=75)

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## Saw a Doctor for Treatment of Vector Transmitted Disease After Dr. Boucher Discontinued Treatment



Q.20: Have you seen a doctor for treatment of vector transmitted disease after Dr. Boucher discontinued his treatment? (n=75)

Q.21: [IF 'YES' IN Q.20] What type of doctor did you see for treatment of vector transmitted disease after Dr. Boucher discontinued his treatment? (n=29)

Q.22: [IF 'YES' IN Q.20] What type of treatment did you receive at that time? (n=29)

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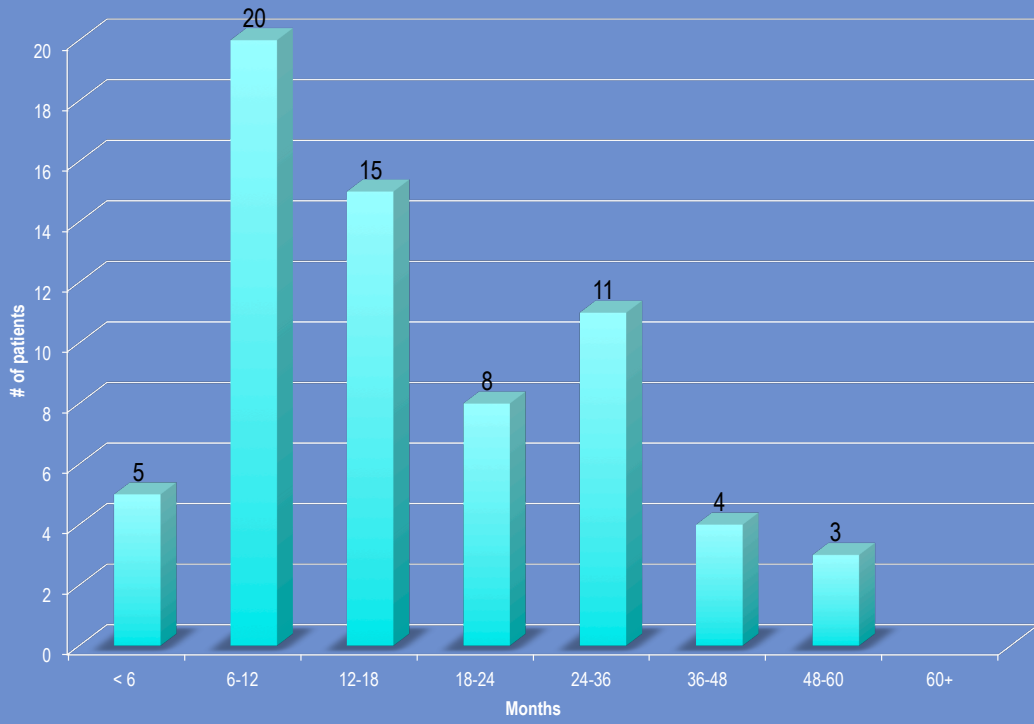
# Tests

- ◆ ELISA Pos 1 Neg 42
- ◆ MRI Pos 22 Neg 6
- ◆ Western Blot (IGeneX) Pos 16 Neg 9
- ◆ DNA (urine) Borrelia 3 Neg 6

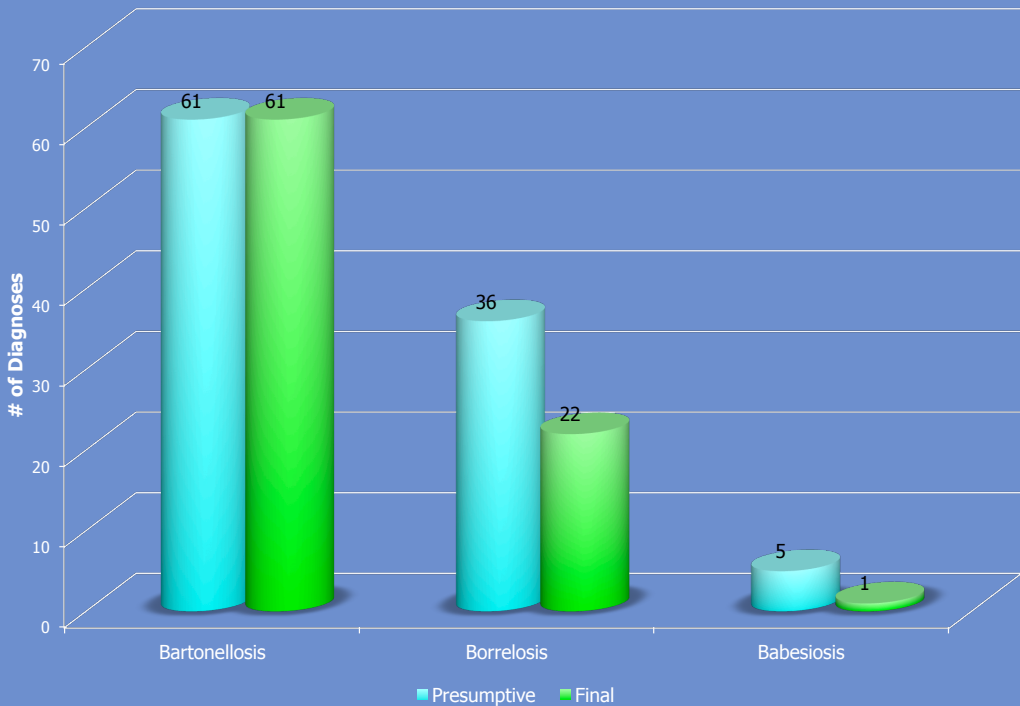
## System Symptoms Changes

|                  | 1st Visit<br>Score | Last Visit<br>Score | Change   | %    |
|------------------|--------------------|---------------------|----------|------|
| General          | 3,901.00           | 1,413.50            | -2487.5  | -64% |
| Men/Cog/Beh      | 4,465.00           | 1,628.00            | -2837.0  | -64% |
| Head & Neck      | 3,263.00           | 1,194.00            | -2069.0  | -63% |
| Respiratory      | 293.50             | 93.50               | -200.0   | -68% |
| Cardiovascular   | 823.00             | 262.00              | -561.0   | -68% |
| Ears             | 715.00             | 254.00              | -461.0   | -64% |
| Eyes             | 1,424.00           | 658.00              | -766.0   | -54% |
| Gastrointestinal | 969.50             | 372.00              | -597.5   | -62% |
| Musculoskeletal  | 4,475.00           | 2,012.00            | -2463.0  | -55% |
| Neurological     | 1,920.50           | 694.00              | -1226.5  | -64% |
| Urogenital       | 670.00             | 282.00              | -388.0   | -58% |
| Dermatological   | 862.00             | 404.50              | -457.5   | -53% |
| Total Score      | 23,781.50          | 9,267.50            | -14514.0 | -61% |

### Treatment Duration



### Suspected Diagnoses



# Treated Patients not in Study

|       | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | Total |
|-------|------|------|------|------|------|------|-------|
| # pts | 5    | 18   | 37   | 30   | 13   | 1    | 104   |

Male 40 Female 64

## Age Range

2 - 85 years Average Age 44

## Suspected Year of Infection

|       | 80-89 | 90-99 | 00-09 | 10-13 | NK |
|-------|-------|-------|-------|-------|----|
| # pts | 1     | 12    | 65    | 14    | 12 |

## Probable Infection Sites

|      | NS | NB | PQ | ON | MB | SK | AB | BC | Other |
|------|----|----|----|----|----|----|----|----|-------|
| #pts | 48 | 25 | 2  | 11 | 2  | 2  | 4  | 3  | 7     |

# Treated Patients not in Study

|                            | #  | %  |
|----------------------------|----|----|
| Recognized Tick Bite       | 56 | 54 |
| Rash                       | 27 | 26 |
| ELISA tests (all negative) | 26 | 0  |
| Western Blot Positives     | 26 | 25 |
| MRI Findings               | 11 | 11 |
| DNA Positives              | 2  | 2  |

## Probable Diagnoses

|               |    |    |
|---------------|----|----|
| Borreliosis   | 57 | 55 |
| Bartonellosis | 76 | 73 |
| Babesiosis    | 18 | 17 |
| Ehrlichiosis  | 4  | 4  |

## Treatment Duration

| Mths | 1 | 2-6 | 7-12 | 12-24 | 25-36 | 36-42 |
|------|---|-----|------|-------|-------|-------|
| Pts  | 3 | 34  | 24   | 17    | 12    | 2     |

# People Requesting Assessment with Information

|                                    |              |              |              |              |           |           |           |              |
|------------------------------------|--------------|--------------|--------------|--------------|-----------|-----------|-----------|--------------|
| <b>Year</b>                        |              |              |              |              |           |           |           |              |
|                                    | <u>2010</u>  | <u>2011</u>  | <u>2012</u>  | <u>Total</u> |           |           |           |              |
| # pts                              | 6            | 13           | 26           | 45           |           |           |           |              |
| Male                               | 20           |              | Female       | 25           |           |           |           |              |
| <b>Age Range</b>                   |              |              |              |              |           |           |           |              |
|                                    | 19-78        | Average Age  |              | 46           |           |           |           |              |
| <b>Suspected Year of Infection</b> |              |              |              |              |           |           |           |              |
|                                    | <u>90-99</u> | <u>00-09</u> | <u>10-13</u> | <u>NK</u>    |           |           |           |              |
| # pts                              | 5            | 15           | 17           | 8            |           |           |           |              |
| <b>Probable Infection Sites</b>    |              |              |              |              |           |           |           |              |
|                                    | <u>NS</u>    | <u>NB</u>    | <u>PQ</u>    | <u>ON</u>    | <u>MB</u> | <u>PE</u> | <u>BC</u> | <u>Other</u> |
| #pts                               | 8            | 6            | 3            | 10           | 1         | 1         | 4         | 12           |

# People Requesting Assessment with Information

|                           |    |     |
|---------------------------|----|-----|
|                           | #  | %   |
| Recognized Tick Bite      | 28 | 62  |
| Rash                      | 18 | 40  |
| ELISA (all negative)      | 16 | 0   |
| Western Blot Positives    | 19 | 42  |
| MRI Findings              | 2  | 4.5 |
| DNA Positives             | 1  | 2   |
| <b>Possible Diagnoses</b> |    |     |
| Borreliosis               | 7  | 16  |
| Bartonellosis             | 7  | 16  |
| Babesiosis                | 4  | 9   |
| Unknown                   | 30 | 67  |

# People Requesting Assessment without Information

## Year

|       | 2010 | 2011 | 2012 | Total |
|-------|------|------|------|-------|
| # pts | 6    | 11   | 29   | 46    |

Male 22 Female 25

## Residence

|      | NS | NB | NF | ON | MB | AB | BC | Other |
|------|----|----|----|----|----|----|----|-------|
| #pts | 18 | 13 | 1  | 5  | 1  | 1  | 1  | 7     |

## SUMMARY

- Vector Transmitted Infections should be suspected more frequently; from 2006-2013: 96 treated and approached for study, 104 others treated, 91 requesting assessment/treatment
- Vector Insects and Humans need improved testing; it's not just ticks and it's not just Lyme
- Brain MRI's may be more supportive than serology for diagnosis
- More than one infection may exist at the same time
- Clinical diagnosis is imperative; testing may be supportive; Herxing on herbals/antibiotics suggests infection; treating until symptoms resolve is crucial
- Antibiotic resistance and Herxing may be decreased by using herbals first

# Summary

- Patients diagnosed with fibromyalgia, chronic fatigue syndrome, arthritis/rheumatoid arthritis, and MS with multi-system symptoms may have a VTI
- PCR analysis of two tick species in the Halifax, NS area revealed approximately 75 and 70 percent infection with Bartonella
- Concern re possible infection transmission from blood transfusion, saliva, sexual intercourse and from mother to fetus is warranted
- General practitioners and infectious disease specialists should increase their awareness, recognition, and treatment of Lyme and other vector transmitted infections.

## THANK YOU

- ◆ Maximize The Good
- ◆ Minimize The Bad