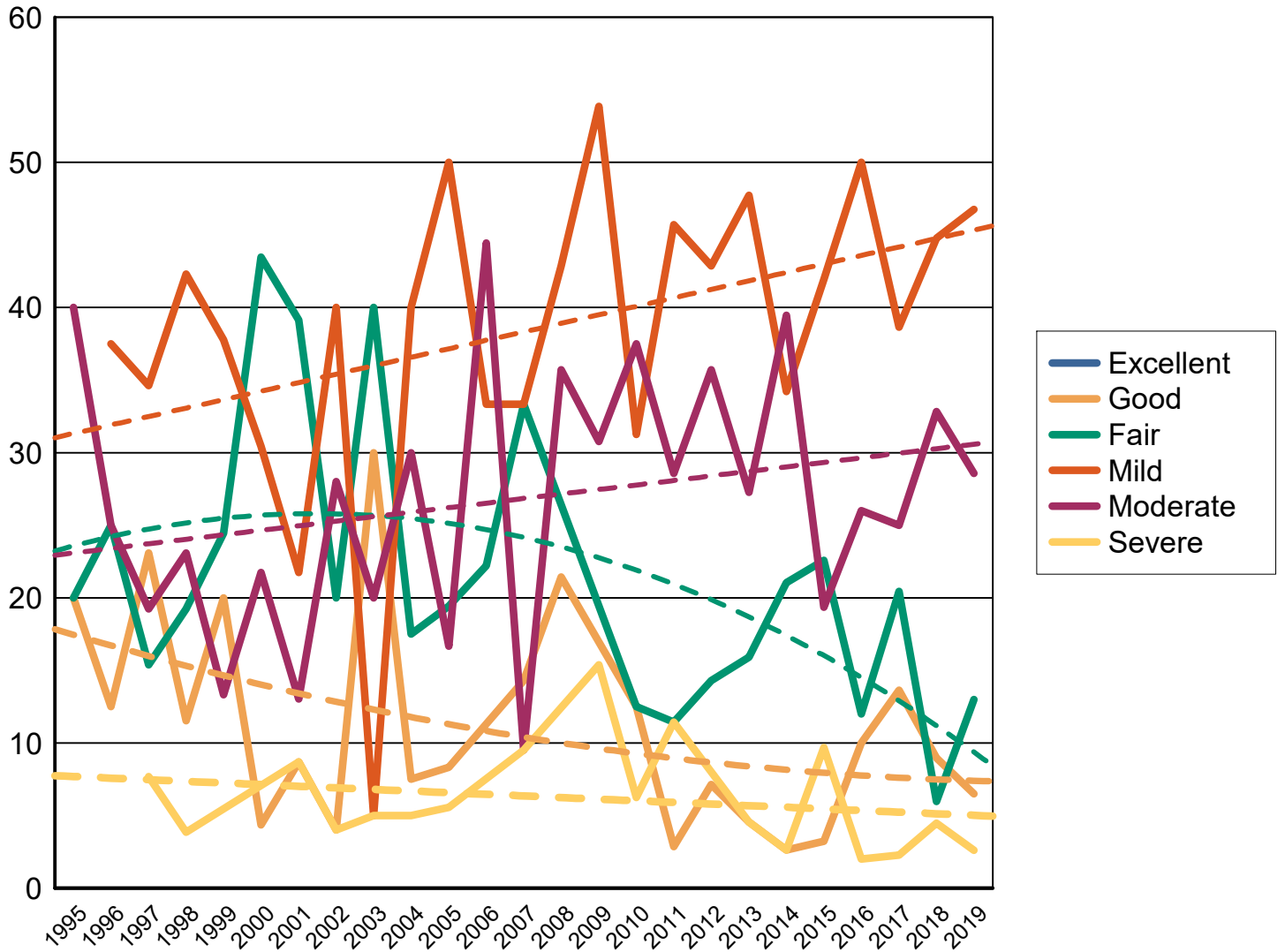


|                                 | <i>Dysplastic rank, all breeds with more than 100 cases</i> | <i>Normals</i> | <i>Equivocal or Carrier</i> | <i>Abnormal</i> |
|---------------------------------|---|----------------|-----------------------------|-----------------|
| Hips                            | 1 of 191  | 252 27.85%     | 1 0.11%                     | 652 72.04%      |
| Elbow                           | 2 of 135  | 155 61.02%     | 1 0.39%                     | 98 38.58%       |
| Congenital Cardiac              |   | 446 100.00%    | 0                           | 0               |
| Thyroid                         |   | 30 73.17%      | 10 24.39%                   | 1 2.44%         |
| Dentition Database              |   | 26 100.00%     | 0                           | 0               |
| Chondrodystrophy (Cddy)         |   | 1 100.00%      | 0                           | 0               |
| Advanced Cardiac                |   | 42 100.00%     | 0                           | 0               |
| Shoulder                        |   | 1 100.00%      | 0                           | 0               |
| OFA EYE Registry                |   | 609 98.07%     | 0                           | 12 1.93%        |
| Tracheal Hypoplasia             |   | 58 82.86%      | 5 7.14%                     | 7 10.00%        |
| Serum Bile Acid                 |   | 2 100.00%      | 0                           | 0               |
| Spine                           |   | 11 19.30%      | 0                           | 46 80.70%       |
| Hyperuricosuria                 |   | 1 100.00%      | 0                           | 0               |
| Chondrodysplasia (Cdpa)         |   | 1 100.00%      | 0                           | 0               |
| Legg-Calve-Perthes              |   | 199 99.50%     | 0                           | 1 0.50%         |
| Baer Hearing Test               |   | 1 100.00%      | 0                           | 0               |
| Degenerative Myelopathy         |   | 389 53.58%     | 243 33.47%                  | 94 12.95%       |
| Primary Lens Luxation           |   | 17 94.44%      | 1 5.56%                     | 0               |
| Necrotizing Meningoencephalitis |   | 546 75.21%     | 172 23.69%                  | 8 1.10%         |
| Phosphofructokinase Deficiency  |   | 1 100.00%      | 0                           | 0               |
| Dominant Black                  |   | 3 100.00%      | 0                           | 0               |
| Patella                         |   | 1153 94.90%    | 0                           | 62 5.10%        |
| Basic Cardiac                   |   | 29 100.00%     | 0                           | 0               |
| Pyruvate Kinase Deficiency      |   | 134 100.00%    | 0                           | 0               |

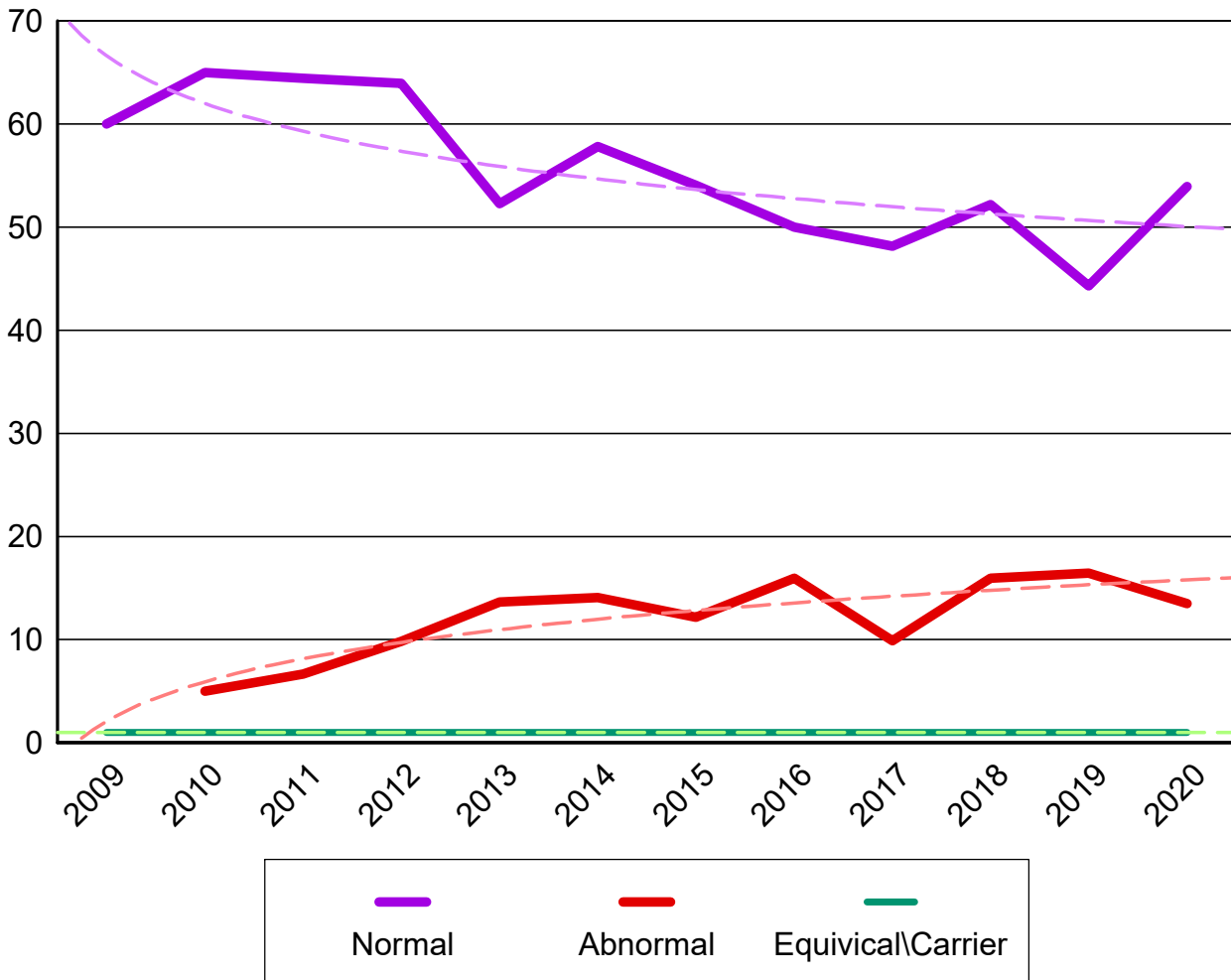
PUG

### Hip percentages by rating with trendlines



DEGENERATIVE MYELOPATHY

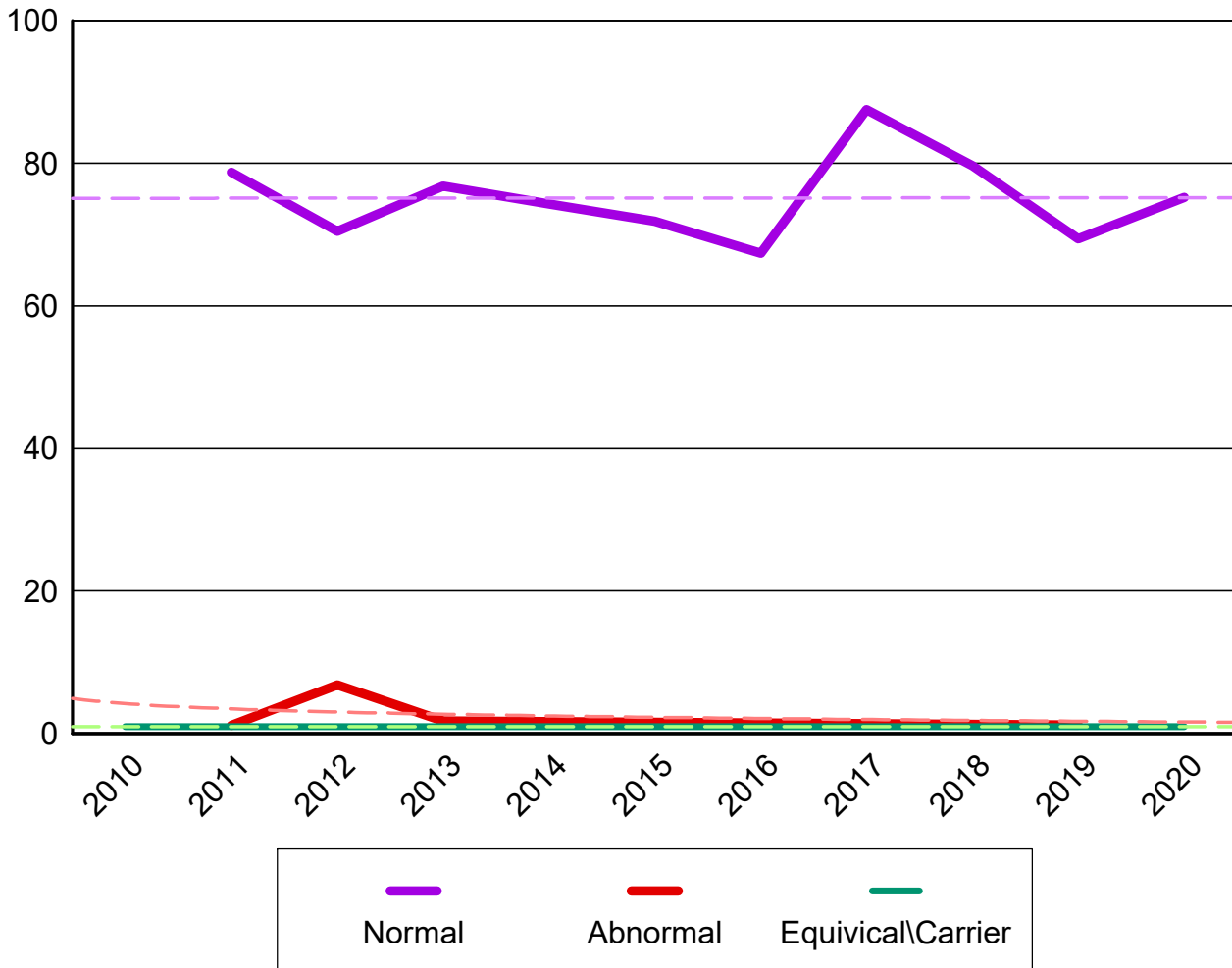
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PUG

NECROTIZING MENINGOENCEPHALITIS

PUG



**Percent submitted to the open registry**

**Hips**

| Report year | Cases | Excellent % | Good %      | Fair %       | Borderline % | Mild %       | Moderate %   | Severe %    |
|-------------|-------|-------------|-------------|--------------|--------------|--------------|--------------|-------------|
| 1979        | 2     | 0           | 0           | 0            | 0            | 1<br>50.00%  | 1<br>50.00%  | 0           |
| 1986        | 3     | 0           | 1<br>33.33% | 0            | 0            | 1<br>33.33%  | 1<br>33.33%  | 0           |
| 1987        | 6     | 0           | 1<br>16.67% | 0            | 0            | 0            | 3<br>50.00%  | 2<br>33.33% |
| 1988        | 6     | 0           | 3<br>50.00% | 0            | 0            | 2<br>33.33%  | 1<br>16.67%  | 0           |
| 1990        | 7     | 0           | 0           | 1<br>14.29%  | 0            | 2<br>28.57%  | 2<br>28.57%  | 2<br>28.57% |
| 1991        | 2     | 0           | 0           | 0            | 0            | 2<br>100.00% | 0            | 0           |
| 1992        | 7     | 0           | 0           | 1<br>14.29%  | 0            | 4<br>57.14%  | 2<br>28.57%  | 0           |
| 1993        | 6     | 0           | 1<br>16.67% | 1<br>16.67%  | 0            | 1<br>16.67%  | 3<br>50.00%  | 0           |
| 1994        | 3     | 0           | 1<br>33.33% | 0            | 0            | 0            | 1<br>33.33%  | 1<br>33.33% |
| 1995        | 5     | 0           | 1<br>20.00% | 1<br>20.00%  | 1<br>20.00%  | 0            | 2<br>40.00%  | 0           |
| 1996        | 8     | 0           | 1<br>12.50% | 2<br>25.00%  | 0            | 3<br>37.50%  | 2<br>25.00%  | 0           |
| 1997        | 26    | 0           | 6<br>23.08% | 4<br>15.38%  | 0            | 9<br>34.62%  | 5<br>19.23%  | 2<br>7.69%  |
| 1998        | 26    | 0           | 3<br>11.54% | 5<br>19.23%  | 0            | 11<br>42.31% | 6<br>23.08%  | 1<br>3.85%  |
| 1999        | 44    | 0           | 9<br>20.00% | 11<br>24.44% | 1<br>2.22%   | 17<br>37.78% | 6<br>13.33%  | 0           |
| 2000        | 23    | 0           | 1<br>4.35%  | 10<br>43.48% | 0            | 7<br>30.43%  | 5<br>21.74%  | 0           |
| 2001        | 23    | 0           | 2<br>8.70%  | 9<br>39.13%  | 2<br>8.70%   | 5<br>21.74%  | 3<br>13.04%  | 2<br>8.70%  |
| 2002        | 25    | 0           | 1<br>4.00%  | 5<br>20.00%  | 1<br>4.00%   | 10<br>40.00% | 7<br>28.00%  | 1<br>4.00%  |
| 2003        | 20    | 0           | 6<br>30.00% | 8<br>40.00%  | 0            | 1<br>5.00%   | 4<br>20.00%  | 1<br>5.00%  |
| 2004        | 40    | 0           | 3<br>7.50%  | 7<br>17.50%  | 0            | 16<br>40.00% | 12<br>30.00% | 2<br>5.00%  |
| 2005        | 36    | 0           | 3<br>8.33%  | 7<br>19.44%  | 0            | 18<br>50.00% | 6<br>16.67%  | 2<br>5.56%  |
| 2006        | 18    | 0           | 0           | 4<br>22.22%  | 0            | 6<br>33.33%  | 8<br>44.44%  | 0           |
| 2007        | 21    | 0           | 3<br>14.29% | 7<br>33.33%  | 0            | 7<br>33.33%  | 2<br>9.52%   | 2<br>9.52%  |

**Percent submitted to the open registry**

**Hips**

| Report year   | Cases         | Excellent<br>% | Good<br>%     | Fair<br>%     | Borderline<br>% | Mild<br>%     | Moderate<br>% | Severe<br>%  |
|---------------|---------------|----------------|---------------|---------------|-----------------|---------------|---------------|--------------|
| 2008          | 14            | 0              | 3             | 0             | 0               | 6             | 5             | 0            |
|               | <b>50.00%</b> |                | 21.43%        |               |                 | 42.86%        | 35.71%        |              |
| 2009          | 13            | 0              | 0             | 0             | 0               | 7             | 4             | 2            |
|               | <b>69.23%</b> |                |               |               |                 | 53.85%        | 30.77%        | 15.38%       |
| 2010          | 16            | 0              | 2             | 2             | 0               | 5             | 6             | 1            |
|               | <b>43.75%</b> |                | 12.50%        | 12.50%        |                 | 31.25%        | 37.50%        | 6.25%        |
| 2011          | 35            | 0              | 1             | 4             | 0               | 16            | 10            | 4            |
|               | <b>71.43%</b> |                | 2.86%         | 11.43%        |                 | 45.71%        | 28.57%        | 11.43%       |
| 2012          | 42            | 0              | 3             | 6             | 0               | 18            | 15            | 0            |
|               | <b>78.57%</b> |                | 7.14%         | 14.29%        |                 | 42.86%        | 35.71%        |              |
| 2013          | 44            | 0              | 2             | 7             | 0               | 21            | 12            | 2            |
|               | <b>70.45%</b> |                | 4.55%         | 15.91%        |                 | 47.73%        | 27.27%        | 4.55%        |
| 2014          | 38            | 0              | 1             | 8             | 0               | 13            | 15            | 1            |
|               | <b>60.53%</b> |                | 2.63%         | 21.05%        |                 | 34.21%        | 39.47%        | 2.63%        |
| 2015          | 31            | 0              | 1             | 7             | 1               | 13            | 6             | 3            |
|               | <b>74.19%</b> |                | 3.23%         | 22.58%        | 3.23%           | 41.94%        | 19.35%        | 9.68%        |
| 2016          | 50            | 0              | 5             | 6             | 0               | 25            | 13            | 1            |
|               | <b>54.00%</b> |                | 10.00%        | 12.00%        |                 | 50.00%        | 26.00%        | 2.00%        |
| 2017          | 44            | 0              | 6             | 9             | 0               | 17            | 11            | 1            |
|               | <b>56.82%</b> |                | 13.64%        | 20.45%        |                 | 38.64%        | 25.00%        | 2.27%        |
| 2018          | 67            | 1              | 6             | 4             | 1               | 30            | 22            | 3            |
|               | <b>56.72%</b> | 1.49%          | 8.96%         | 5.97%         | 1.49%           | 44.78%        | 32.84%        | 4.48%        |
| 2019          | 77            | 0              | 5             | 10            | 2               | 36            | 22            | 2            |
|               | <b>58.44%</b> |                | 6.49%         | 12.99%        | 2.60%           | 46.75%        | 28.57%        | 2.60%        |
| 2020          | 81            | 0              | 10            | 11            | 1               | 29            | 27            | 3            |
|               | <b>32.10%</b> |                | 12.35%        | 13.58%        | 1.23%           | 35.80%        | 33.33%        | 3.70%        |
| <b>Totals</b> | <b>914</b>    | <b>1</b>       | <b>93</b>     | <b>158</b>    | <b>10</b>       | <b>360</b>    | <b>250</b>    | <b>42</b>    |
|               |               | <b>0.11%</b>   | <b>10.16%</b> | <b>17.27%</b> | <b>1.09%</b>    | <b>39.34%</b> | <b>27.32%</b> | <b>4.59%</b> |

**Elbow**

| <i>Report Year</i> | <i>Cases</i> | <i>Normal %</i> | <i>Grade 1 %</i> | <i>Grade 2 %</i> | <i>Grade 3 %</i> | <i>Borderline %</i> |
|--------------------|--------------|-----------------|------------------|------------------|------------------|---------------------|
| 1994               | 1            |                 |                  |                  | 1                | 100.00%             |
| 1995               | 1            |                 |                  | 1                | 100.00%          |                     |
| 1997               | 1            | 1               |                  |                  |                  | 100.00%             |
| 1998               | 4            | 2               | 2                |                  |                  |                     |
|                    |              | 50.00%          | 50.00%           |                  |                  |                     |
| 1999               | 5            |                 | 3                |                  | 1                | 1                   |
|                    |              |                 | 60.00%           |                  | 20.00%           | 20.00%              |
| 2000               | 6            | 4               | 1                | 1                |                  |                     |
|                    |              | 66.67%          | 16.67%           | 16.67%           |                  |                     |
| 2001               | 9            | 3               | 3                | 3                |                  |                     |
|                    |              | 33.33%          | 33.33%           | 33.33%           |                  |                     |
| 2002               | 4            | 2               | 2                |                  |                  |                     |
|                    |              | 50.00%          | 50.00%           |                  |                  |                     |
| 2003               | 4            | 3               | 1                |                  |                  |                     |
|                    |              | 75.00%          | 25.00%           |                  |                  |                     |
| 2004               | 17           | 5               | 6                | 6                |                  |                     |
|                    |              | 29.41%          | 35.29%           | 35.29%           |                  |                     |
| 2005               | 13           | 4               | 4                | 5                |                  |                     |
|                    |              | 30.77%          | 30.77%           | 38.46%           |                  |                     |
| 2006               | 8            | 3               | 1                | 3                | 1                |                     |
|                    |              | 37.50%          | 12.50%           | 37.50%           | 12.50%           |                     |
| 2007               | 10           | 4               | 4                | 2                |                  |                     |
|                    |              | 40.00%          | 40.00%           | 20.00%           |                  |                     |
| 2008               | 8            | 4               | 3                | 1                |                  |                     |
|                    |              | 50.00%          | 37.50%           | 12.50%           |                  |                     |
| 2009               | 4            | 3               | 1                |                  |                  |                     |
|                    |              | 75.00%          | 25.00%           |                  |                  |                     |
| 2010               | 10           | 10              |                  |                  |                  |                     |
|                    |              | 100.00%         |                  |                  |                  |                     |
| 2011               | 6            | 6               |                  |                  |                  |                     |
|                    |              | 100.00%         |                  |                  |                  |                     |
| 2012               | 15           | 13              | 1                | 1                |                  |                     |
|                    |              | 86.67%          | 6.67%            | 6.67%            |                  |                     |
| 2013               | 12           | 9               | 2                | 1                |                  |                     |
|                    |              | 75.00%          | 16.67%           | 8.33%            |                  |                     |
| 2014               | 14           | 7               | 6                | 1                |                  |                     |
|                    |              | 50.00%          | 42.86%           | 7.14%            |                  |                     |
| 2015               | 5            | 4               | 1                |                  |                  |                     |
|                    |              | 80.00%          | 20.00%           |                  |                  |                     |

**Elbow**

| <i>Report Year</i> | <i>Cases</i> | <i>Normal</i><br><i>%</i>   | <i>Grade 1</i><br><i>%</i> | <i>Grade 2</i><br><i>%</i> | <i>Grade 3</i><br><i>%</i> | <i>Borderline</i><br><i>%</i> |
|--------------------|--------------|-----------------------------|----------------------------|----------------------------|----------------------------|-------------------------------|
| 2016               | 18           | 13<br>72.22%                | 4<br>22.22%                | 1<br>5.56%                 |                            |                               |
| 2017               | 12           | 11<br>91.67%                | 1<br>8.33%                 |                            |                            |                               |
| 2018               | 25           | 16<br>64.00%                | 8<br>32.00%                | 1<br>4.00%                 |                            |                               |
| 2019               | 14           | 13<br>92.86%                | 1<br>7.14%                 |                            |                            |                               |
| 2020               | 28           | 15<br>53.57%                | 10<br>35.71%               | 3<br>10.71%                |                            |                               |
| <b>Totals</b>      | <b>254</b>   | <b>155</b><br><b>61.02%</b> | <b>65</b><br><b>25.59%</b> | <b>30</b><br><b>11.81%</b> | <b>3</b><br><b>1.18%</b>   | <b>1</b><br><b>0.39%</b>      |



**Advanced Cardiac**

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Carrier</i> | <i>% Carrier</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|----------------|------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                |                  |
| 2016               | 4            | 4             | 100.0           |                 |                   |                |                  |
| 2017               | 6            | 6             | 100.0           |                 |                   |                |                  |
| 2018               | 6            | 6             | 100.0           |                 |                   |                |                  |
| 2019               | 17           | 17            | 100.0           |                 |                   |                |                  |
| 2020               | 9            | 9             | 100.0           |                 |                   |                |                  |
| <b>Totals</b>      | <b>42</b>    | <b>42</b>     | <b>100.0</b>    |                 |                   |                |                  |

**Baer Hearing Test**

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Equivocal</i> | <i>% Equivocal</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|------------------|--------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                  |                    |
| 2009               | 1            | 1             | 100.0           |                 |                   |                  |                    |
| <b>Totals</b>      | <b>1</b>     | <b>1</b>      | <b>100.0</b>    |                 |                   |                  |                    |

**Chondrodysplasia (Cdpa)**

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Carrier</i> | <i>% Carrier</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|----------------|------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                |                  |
| 2019               | 1            | 1             | 100.0           |                 |                   |                |                  |
| <b>Totals</b>      | <b>1</b>     | <b>1</b>      | <b>100.0</b>    |                 |                   |                |                  |

**Chondrodystrophy (Cddy)**

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Carrier</i> | <i>% Carrier</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|----------------|------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                |                  |
| 2019               | 1            | 1             | 100.0           |                 |                   |                |                  |
| <b>Totals</b>      | <b>1</b>     | <b>1</b>      | <b>100.0</b>    |                 |                   |                |                  |

**Congenital Cardiac**

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Equivocal</i> | <i>% Equivocal</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|------------------|--------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                  |                    |
| 1999               | 1            | 1             | 100.0           |                 |                   |                  |                    |
| 2003               | 2            | 2             | 100.0           |                 |                   |                  |                    |
| 2004               | 5            | 5             | 100.0           |                 |                   |                  |                    |
| 2005               | 4            | 4             | 100.0           |                 |                   |                  |                    |
| 2006               | 4            | 4             | 100.0           |                 |                   |                  |                    |
| 2007               | 4            | 4             | 100.0           |                 |                   |                  |                    |
| 2008               | 9            | 9             | 100.0           |                 |                   |                  |                    |
| 2009               | 12           | 12            | 100.0           |                 |                   |                  |                    |
| 2010               | 18           | 18            | 100.0           |                 |                   |                  |                    |
| 2011               | 27           | 27            | 100.0           |                 |                   |                  |                    |
| 2012               | 12           | 12            | 100.0           |                 |                   |                  |                    |
| 2013               | 30           | 30            | 100.0           |                 |                   |                  |                    |

### Congenital Cardiac

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Equivocal</i> | <i>% Equivocal</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|------------------|--------------------|
| 2014               | 23           | 23            | 100.0           |                 |                   |                  |                    |
| 2015               | 17           | 17            | 100.0           |                 |                   |                  |                    |
| 2016               | 32           | 32            | 100.0           |                 |                   |                  |                    |
| 2017               | 44           | 44            | 100.0           |                 |                   |                  |                    |
| 2018               | 41           | 41            | 100.0           |                 |                   |                  |                    |
| 2019               | 105          | 105           | 100.0           |                 |                   |                  |                    |
| 2020               | 56           | 56            | 100.0           |                 |                   |                  |                    |
| <b>Totals</b>      | <b>446</b>   | <b>446</b>    | <b>100.0</b>    |                 |                   |                  |                    |

### Degenerative Myelopathy

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Carrier</i> | <i>% Carrier</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|----------------|------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                |                  |
| 2009               | 5            | 3             | 60.0            |                 |                   | 2              | 40.0             |
| 2010               | 20           | 13            | 65.0            | 1               | 5.0               | 6              | 30.0             |
| 2011               | 45           | 29            | 64.4            | 3               | 6.7               | 13             | 28.9             |
| 2012               | 61           | 39            | 63.9            | 6               | 9.8               | 16             | 26.2             |
| 2013               | 44           | 23            | 52.3            | 6               | 13.6              | 15             | 34.1             |
| 2014               | 64           | 37            | 57.8            | 9               | 14.1              | 18             | 28.1             |
| 2015               | 74           | 40            | 54.1            | 9               | 12.2              | 25             | 33.8             |
| 2016               | 94           | 47            | 50.0            | 15              | 16.0              | 32             | 34.0             |
| 2017               | 81           | 39            | 48.2            | 8               | 9.9               | 34             | 42.0             |
| 2018               | 69           | 36            | 52.2            | 11              | 15.9              | 22             | 31.9             |
| 2019               | 79           | 35            | 44.3            | 13              | 16.5              | 31             | 39.2             |
| 2020               | 89           | 48            | 53.9            | 12              | 13.5              | 29             | 32.6             |
| <b>Totals</b>      | <b>725</b>   | <b>389</b>    | <b>53.7</b>     | <b>93</b>       | <b>12.8</b>       | <b>243</b>     | <b>33.5</b>      |

### Dentition Database

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Carrier</i> | <i>% Carrier</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|----------------|------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                |                  |
| 2016               | 11           | 11            | 100.0           |                 |                   |                |                  |
| 2018               | 6            | 6             | 100.0           |                 |                   |                |                  |
| 2019               | 6            | 6             | 100.0           |                 |                   |                |                  |
| 2020               | 3            | 3             | 100.0           |                 |                   |                |                  |
| <b>Totals</b>      | <b>26</b>    | <b>26</b>     | <b>100.0</b>    |                 |                   |                |                  |

### Dominant Black

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Carrier</i> | <i>% Carrier</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|----------------|------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                |                  |
| 2020               | 3            | 3             | 100.0           |                 |                   |                |                  |
| <b>Totals</b>      | <b>3</b>     | <b>3</b>      | <b>100.0</b>    |                 |                   |                |                  |

### Eyes

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Breeder opt.</i> | <i>% Breeder opt.</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|---------------------|-----------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                     |                       |
| 2012               | 1            | 1             | 100.0           |                 |                   |                     |                       |
| 2013               | 65           | 10            | 15.4            | 3               | 4.6               | 52                  | 80.0                  |
| 2014               | 48           | 15            | 31.3            | 2               | 4.2               | 31                  | 64.6                  |
| 2015               | 69           | 15            | 21.7            | 2               | 2.9               | 52                  | 75.4                  |
| 2016               | 76           | 26            | 34.2            | 1               | 1.3               | 49                  | 64.5                  |
| 2017               | 66           | 24            | 36.4            |                 |                   | 42                  | 63.6                  |
| 2018               | 62           | 13            | 21.0            | 3               | 4.8               | 46                  | 74.2                  |
| 2019               | 150          | 41            | 27.3            | 1               | 0.7               | 108                 | 72.0                  |
| 2020               | 84           | 35            | 41.7            |                 |                   | 49                  | 58.3                  |
| <b>Totals</b>      | <b>621</b>   | <b>180</b>    | <b>29.0</b>     | <b>12</b>       | <b>1.9</b>        | <b>429</b>          | <b>69.1</b>           |

### Hyperuricosuria

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Carrier</i> | <i>% Carrier</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|----------------|------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                |                  |
| 2020               | 1            | 1             | 100.0           |                 |                   |                |                  |
| <b>Totals</b>      | <b>1</b>     | <b>1</b>      | <b>100.0</b>    |                 |                   |                |                  |

### Legg-Calve-Perthes

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Carrier</i> | <i>% Carrier</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|----------------|------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                |                  |
| 2003               | 1            | 1             | 100.0           |                 |                   |                |                  |
| 2004               | 1            | 1             | 100.0           |                 |                   |                |                  |
| 2005               | 35           | 35            | 100.0           |                 |                   |                |                  |
| 2006               | 1            | 1             | 100.0           |                 |                   |                |                  |
| 2008               | 1            | 1             | 100.0           |                 |                   |                |                  |
| 2009               | 3            | 3             | 100.0           |                 |                   |                |                  |
| 2010               | 4            | 4             | 100.0           |                 |                   |                |                  |
| 2011               | 1            |               |                 | 1               | 100.0             |                |                  |
| 2012               | 2            | 2             | 100.0           |                 |                   |                |                  |
| 2013               | 3            | 3             | 100.0           |                 |                   |                |                  |
| 2014               | 12           | 12            | 100.0           |                 |                   |                |                  |
| 2015               | 5            | 5             | 100.0           |                 |                   |                |                  |
| 2016               | 11           | 11            | 100.0           |                 |                   |                |                  |
| 2017               | 13           | 13            | 100.0           |                 |                   |                |                  |
| 2018               | 25           | 25            | 100.0           |                 |                   |                |                  |
| 2019               | 30           | 30            | 100.0           |                 |                   |                |                  |
| 2020               | 57           | 57            | 100.0           |                 |                   |                |                  |
| <b>Totals</b>      | <b>205</b>   | <b>204</b>    | <b>99.5</b>     | <b>1</b>        | <b>0.5</b>        |                |                  |

### Necrotizing Meningoencephalitis

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Carrier</i> | <i>% Carrier</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|----------------|------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                |                  |
| 2010               | 1            |               |                 |                 |                   | 1              | 100.0            |

### Necrotizing Meningoencephalitis

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Carrier</i> | <i>% Carrier</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|----------------|------------------|
| 2011               | 174          | 137           | 78.7            | 2               | 1.2               | 35             | 20.1             |
| 2012               | 44           | 31            | 70.5            | 3               | 6.8               | 10             | 22.7             |
| 2013               | 56           | 43            | 76.8            | 1               | 1.8               | 12             | 21.4             |
| 2014               | 35           | 26            | 74.3            |                 |                   | 9              | 25.7             |
| 2015               | 64           | 46            | 71.9            |                 |                   | 18             | 28.1             |
| 2016               | 46           | 31            | 67.4            |                 |                   | 15             | 32.6             |
| 2017               | 40           | 35            | 87.5            |                 |                   | 5              | 12.5             |
| 2018               | 59           | 47            | 79.7            |                 |                   | 12             | 20.3             |
| 2019               | 85           | 59            | 69.4            | 1               | 1.2               | 25             | 29.4             |
| 2020               | 121          | 91            | 75.2            |                 |                   | 30             | 24.8             |
| <b>Totals</b>      | <b>725</b>   | <b>546</b>    | <b>75.3</b>     | <b>7</b>        | <b>1.0</b>        | <b>172</b>     | <b>23.7</b>      |

### Patella

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Carrier</i> | <i>% Carrier</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|----------------|------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                |                  |
| 1994               | 1            | 1             | 100.0           |                 |                   |                |                  |
| 1995               | 2            | 2             | 100.0           |                 |                   |                |                  |
| 1996               | 7            | 5             | 71.4            | 2               | 28.6              |                |                  |
| 1997               | 16           | 13            | 81.3            | 3               | 18.8              |                |                  |
| 1998               | 22           | 21            | 95.5            | 1               | 4.6               |                |                  |
| 1999               | 11           | 11            | 100.0           |                 |                   |                |                  |
| 2000               | 26           | 25            | 96.2            | 1               | 3.9               |                |                  |
| 2001               | 19           | 18            | 94.7            | 1               | 5.3               |                |                  |
| 2002               | 32           | 32            | 100.0           |                 |                   |                |                  |
| 2003               | 21           | 19            | 90.5            | 2               | 9.5               |                |                  |
| 2004               | 56           | 49            | 87.5            | 7               | 12.5              |                |                  |
| 2005               | 37           | 35            | 94.6            | 2               | 5.4               |                |                  |
| 2006               | 23           | 19            | 82.6            | 4               | 17.4              |                |                  |
| 2007               | 18           | 17            | 94.4            | 1               | 5.6               |                |                  |
| 2008               | 18           | 18            | 100.0           |                 |                   |                |                  |
| 2009               | 22           | 22            | 100.0           |                 |                   |                |                  |
| 2010               | 34           | 33            | 97.1            | 1               | 2.9               |                |                  |
| 2011               | 46           | 45            | 97.8            | 1               | 2.2               |                |                  |
| 2012               | 48           | 47            | 97.9            | 1               | 2.1               |                |                  |
| 2013               | 73           | 70            | 95.9            | 3               | 4.1               |                |                  |
| 2014               | 63           | 60            | 95.2            | 3               | 4.8               |                |                  |
| 2015               | 53           | 51            | 96.2            | 2               | 3.8               |                |                  |
| 2016               | 78           | 73            | 93.6            | 5               | 6.4               |                |                  |
| 2017               | 92           | 91            | 98.9            | 1               | 1.1               |                |                  |
| 2018               | 83           | 75            | 90.4            | 8               | 9.6               |                |                  |
| 2019               | 159          | 153           | 96.2            | 6               | 3.8               |                |                  |
| 2020               | 154          | 147           | 95.5            | 7               | 4.6               |                |                  |
| <b>Totals</b>      | <b>1214</b>  | <b>1152</b>   | <b>94.9</b>     | <b>62</b>       | <b>5.1</b>        |                |                  |

### Phosphofructokinase Deficiency

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|

**Pug**

### Phosphofructokinase Deficiency

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|
| 2019               | 1            | 1             | 100.0           |                 |                   |
| <b>Totals</b>      | <b>1</b>     | <b>1</b>      | <b>100.0</b>    |                 |                   |

### Primary Lens Luxation

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Carrier</i> | <i>% Carrier</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|----------------|------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                |                  |
| 2013               | 1            |               |                 |                 |                   | 1              | 100.0            |
| 2018               | 4            | 4             | 100.0           |                 |                   |                |                  |
| 2019               | 5            | 5             | 100.0           |                 |                   |                |                  |
| 2020               | 8            | 8             | 100.0           |                 |                   |                |                  |
| <b>Totals</b>      | <b>18</b>    | <b>17</b>     | <b>94.4</b>     |                 |                   | <b>1</b>       | <b>5.6</b>       |

### Pyruvate Kinase Deficiency

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Carrier</i> | <i>% Carrier</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|----------------|------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                |                  |
| 2014               | 6            | 6             | 100.0           |                 |                   |                |                  |
| 2015               | 8            | 8             | 100.0           |                 |                   |                |                  |
| 2016               | 5            | 5             | 100.0           |                 |                   |                |                  |
| 2017               | 15           | 15            | 100.0           |                 |                   |                |                  |
| 2018               | 25           | 25            | 100.0           |                 |                   |                |                  |
| 2019               | 29           | 29            | 100.0           |                 |                   |                |                  |
| 2020               | 46           | 46            | 100.0           |                 |                   |                |                  |
| <b>Totals</b>      | <b>134</b>   | <b>134</b>    | <b>100.0</b>    |                 |                   |                |                  |

### Serum Bile Acid

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Equivocal</i> | <i>% Equivocal</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|------------------|--------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                  |                    |
| 2016               | 2            | 2             | 100.0           |                 |                   |                  |                    |
| <b>Totals</b>      | <b>2</b>     | <b>2</b>      | <b>100.0</b>    |                 |                   |                  |                    |

### Shoulder

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |
| 2016               | 1            | 1             | 100.0           |                 |                   |
| <b>Totals</b>      | <b>1</b>     | <b>1</b>      | <b>100.0</b>    |                 |                   |

### Thyroid

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Equivocal</i> | <i>% Equivocal</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|------------------|--------------------|
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|------------------|--------------------|

### Thyroid

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Equivocal</i> | <i>% Equivocal</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|------------------|--------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                  |                    |
| 1998               | 1            |               |                 |                 |                   | 1                | 100.0              |
| 2001               | 2            | 1             | 50.0            |                 |                   | 1                | 50.0               |
| 2002               | 2            | 1             | 50.0            |                 |                   | 1                | 50.0               |
| 2003               | 2            | 2             | 100.0           |                 |                   |                  |                    |
| 2004               | 4            | 3             | 75.0            |                 |                   | 1                | 25.0               |
| 2005               | 2            | 2             | 100.0           |                 |                   |                  |                    |
| 2006               | 5            | 5             | 100.0           |                 |                   |                  |                    |
| 2008               | 2            | 2             | 100.0           |                 |                   |                  |                    |
| 2011               | 4            | 3             | 75.0            |                 |                   | 1                | 25.0               |
| 2012               | 2            | 2             | 100.0           |                 |                   |                  |                    |
| 2013               | 2            | 1             | 50.0            |                 |                   | 1                | 50.0               |
| 2015               | 2            | 2             | 100.0           |                 |                   |                  |                    |
| 2016               | 1            | 1             | 100.0           |                 |                   |                  |                    |
| 2017               | 4            | 2             | 50.0            | 1               | 25.0              | 1                | 25.0               |
| 2018               | 3            | 1             | 33.3            |                 |                   | 2                | 66.7               |
| 2019               | 1            |               |                 |                 |                   | 1                | 100.0              |
| 2020               | 2            | 2             | 100.0           |                 |                   |                  |                    |
| <b>Totals</b>      | <b>41</b>    | <b>30</b>     | <b>73.2</b>     | <b>1</b>        | <b>2.4</b>        | <b>10</b>        | <b>24.4</b>        |

### Tracheal Hypoplasia

| <i>Report year</i> | <i>Cases</i> | <i>Normal</i> | <i>% Normal</i> | <i>Abnormal</i> | <i>% Abnormal</i> | <i>Equivocal</i> | <i>% Equivocal</i> |
|--------------------|--------------|---------------|-----------------|-----------------|-------------------|------------------|--------------------|
| <b>Pug</b>         |              |               |                 |                 |                   |                  |                    |
| 2012               | 1            | 1             | 100.0           |                 |                   |                  |                    |
| 2016               | 3            | 3             | 100.0           |                 |                   |                  |                    |
| 2017               | 1            | 1             | 100.0           |                 |                   |                  |                    |
| 2018               | 10           | 8             | 80.0            | 2               | 20.0              |                  |                    |
| 2019               | 18           | 12            | 66.7            | 6               | 33.3              |                  |                    |
| 2020               | 32           | 32            | 100.0           |                 |                   |                  |                    |
| <b>Totals</b>      | <b>65</b>    | <b>57</b>     | <b>87.7</b>     | <b>8</b>        | <b>12.3</b>       |                  |                    |