i. Executive Summary

Typically there have been 1,400 deaths annually in the borough in recent years since 2017. As mortality rates have fallen, there has been a downward trend in the annual number of deaths since 2013. The greatest reductions in mortality rates have been in the oldest agebands, except for deaths in ages 89-89 years. Because of this, people are on average dying at an older age (the aging population effect) and increasingly, with more complex health issues at end of life. Currently there are similar numbers of male and female deaths. The number of male deaths is decreasing more quickly than that of females

As population diversity increases in the borough, the proportion of death in communities of people born outside of the UK is increasing over time. Of the total number of deaths, the proportion occurring in UK born people fell from 70% to 67% over three years up to 2017.

Eighty percent of deaths are accounted for by four causes (neoplasms, circulatory, respiratory, mental/behavioural).

For cancer and mental and behavioural disorders, there is already a strong, well established trend for a reduction in hospital deaths and an increase in deaths in usual place of residence (home or care home). This trend is also already seen in deaths from circulatory causes.

For mental and behavioural disorders, there are already more community deaths and the trend will see this increase. By mid-2022 we can expect to see equal numbers of hospital and community deaths from cancer.

It is only in the case of respiratory deaths has there been no substantial improvement in community deaths over the period 2013 to 2017.

Deaths from both neoplasms and circulatory underlying causes have declined steadily. There have been substantial increases in the number of respiratory and nervous system deaths since 2013.

In 2016/17 approximately one third of deaths in Waltham Forest occurred in the usual place of residence. As a consequence of both the total number of deaths, and hospital deaths declining, the proportion of deaths in a care home or home is rising by 0.78% per year.

The proportion of deaths in care homes or homes has remained fairly constant at around 35% for people born in Europe or Caribbean Islands during the period 2013 to 2017. For people born in Asia or Africa, the proportion has increased from around 20% to 25%. Since 2015 the proportion of deaths in care home or home appears to have increased for UK born people.
Place of death varies with cause of death in Waltham Forest. For cancer, circulatory, dementia/Alzheimer’s and respiratory causes of death, in each case in Waltham Forest a lower proportion of deaths are in usual place of residence when compared to London and to England. However, over time the proportion of deaths in usual place of residence has been steadily improving in the borough and in the comparator areas for all four causes. The greatest improvements over time have been seen in dementia/Alzheimer’s as a cause. Of the four causes of death, this greatest proportion of community deaths is seen in this cause. The least improvement has been seen in respiratory disease causes of death.

In contrast the proportion of death in hospital has ranged from 60 to 80% during the period 2013 to 2017.

The large reduction in hospital deaths from 2013 to 2017 is mainly explained by reductions in circulatory and neoplasm deaths. In terms of increasing the proportion of deaths in the community, the increase in cancer home deaths has been partly offset by the reduction in home external cause deaths (essentially accidents).

When comparing the period 2013 and 2014 (pooled) against 2016 and 2017 (pooled) the large observed reduction in neoplasm hospital deaths has been accompanied by smaller increases in care home and home neoplasm deaths over the period. This suggests that there has not been a sizeable shift from hospital to community cancer deaths; instead mortality from cancer has fallen more generally.

Reductions in mental and behavioural hospital deaths were associated with increases in care home and home deaths, suggesting a transfer to the community for these causes when comparing these time periods. Deaths from circulatory, digestive, external and endocrinal causes fell in all three settings over the period. This means that for these causes, there has been no shift at all from hospital to community deaths.

There were substantial increases in respiratory and nervous system hospital deaths, but only a very slight increase in home deaths for these causes (2013 and 2014 (pooled) against 2016 and 2017 (pooled)). This means that these causes of death are becoming more prominent and are not substantially shifting to the community.

People born in Europe have consistently had the lowest proportion of death in hospital. People born in Africa or Asia have experienced the highest proportion of hospital death. Death from endocrine, nutritional or metabolic disease (including diabetes) causes is higher than expected in people born in South America and Caribbean Islands. Other notably higher than expected causes are death from infectious diseases amongst people born in African, and external causes (typically accidents) amongst Europeans.

The preferred place of death for LBWF residents is not well understood and it is not known whether these differences reflect choice in end of life or not.

Approximately two thirds of those expected to die in the next year have an entry on a palliative care register in the borough. The quality of advanced care plans associated with these registers is unknown. Currently, about 30% of those people who are expected to die within the next year have a Co-ordinate My Care plan.
ii. Strategic implications

i. Increasing population ethnic diversity at end of life means that services need to support increasing population diversity and understand the implications of this on death and dying.

ii. As age at death is increasing, the health of those dying is likely to be increasingly complex. This may mean that care and support needs at end of life increase. It is possible that as a consequence, death in the community becomes increasingly difficult to achieve.

iii. Changes to causes of death meaning services will need to support increasing numbers of respiratory and nervous system deaths and fewer deaths from neoplasms and circulatory causes.

iv. Deaths from cancer, circulatory and mental and behavioural disorders already have strong, well established trends in location of death transferring from hospital to the community.

v. The only substantial cause of death that has not shown a significant shift from hospital to community deaths is respiratory. The end of life care system should focus on supporting respiratory deaths in the community if it is to achieve an increase in community deaths. This has consequences for the structure and nature of community health, social care and clinical services supporting palliative and end of life needs.
1. Demography and death

This section covers epidemiology of end of life in Waltham Forest.

The source of all data used in this report is the ONS annual mortality files (2013 to 2017). This analysis is based on deaths of all borough residents, including those who were usually resident but died out of borough.

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>Total</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
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<td>765</td>
<td>746</td>
<td>708</td>
<td>647</td>
<td>3,562</td>
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</tr>
<tr>
<td>Female</td>
<td>701</td>
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<td>746</td>
<td>695</td>
<td>666</td>
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<td>1,492</td>
<td>1,403</td>
<td>1,313</td>
<td>7,089</td>
<td>-24.9</td>
</tr>
</tbody>
</table>

**Figure 1:** Number of deaths for LBWF residents by year. Data source: ONS annual mortality files.

Typically there have been 1,400 deaths annually in the borough in recent years since 2017 (Figure 1). These have been split evenly between males and females. As mortality rates have fallen, there has been a downward trend in the annual number of deaths since 2013. On average, the annual number of deaths has reduced by 25 deaths since 2013. Male deaths account for roughly two thirds of this reduction.

In 2017 there were 1,313 deaths. The average age of female deaths is slightly older than that of male deaths (Figure 2). The mode for both female and male deaths is 80 to 85 years. The greatest reductions in mortality have been in the oldest agebands (not shown here).

**Figure 2:** Number of deaths by ageband by sex (2017). Data source: ONS annual mortality files.
Since 2013, there has been a downward trend in the annual number of deaths in all agebands except for 80 to 89 years (and an extremely small increase in the 60 to 69 year ageband) (Figures 3 and 4). During the period 2013 to 2017, on average there has been an annual increase of 6.6 deaths in the 80 to 89 years ageband and an average annual reduction of 8.4 deaths in the 70 to 79 years ageband (Figure 4).

**Figure 3**: Annual number of deaths by ageband for LBWF residents by year. Data source: ONS annual mortality files.

**Figure 4**: Annual number of deaths by ageband for LBWF residents by year. Values in The Trend column (far right) indicate the average annual change in the number of deaths. Data source: ONS annual mortality files.
2. Place of birth and death

Mortality data does not record ethnicity. Instead, place of birth can be used to give an indication of differences that may in part relate to ethnicity. Figure 5 illustrates the annual number of deaths by place of birth for LBWF residents.

In 2017, people born in the UK accounted for 880 (67%) of the deaths in the borough. People born in Asia accounted for 152 (12%) of the total number of deaths. On average, over the period 2013 to 2017, each year there were 29 fewer deaths to people born in the UK. Deaths to people born in Europe rose by on average 4.8 deaths each year over the period. The effect of these changes is that the ethnic diversity of those dying in the borough is slowly increasing.

<table>
<thead>
<tr>
<th>Place of birth</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>Total</th>
<th>Trend</th>
</tr>
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<tbody>
<tr>
<td>UK</td>
<td>973</td>
<td>1,046</td>
<td>1,000</td>
<td>939</td>
<td>880</td>
<td>4,838</td>
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<tr>
<td>Asia</td>
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<td>180</td>
<td>159</td>
<td>174</td>
<td>152</td>
<td>806</td>
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<tr>
<td>Europe*</td>
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<td>101</td>
<td>105</td>
<td>109</td>
<td>113</td>
<td>521</td>
<td>4.8</td>
</tr>
<tr>
<td>Caribbean Islands</td>
<td>106</td>
<td>84</td>
<td>127</td>
<td>98</td>
<td>101</td>
<td>516</td>
<td>0.4</td>
</tr>
<tr>
<td>Africa</td>
<td>65</td>
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<td>89</td>
<td>63</td>
<td>58</td>
<td>338</td>
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</tr>
<tr>
<td>South America</td>
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<td>4</td>
<td>3</td>
<td>10</td>
<td>9</td>
<td>46</td>
<td>-0.2</td>
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<tr>
<td>N. America / Oceania</td>
<td>7</td>
<td>4</td>
<td>3</td>
<td>10</td>
<td></td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,397</td>
<td>1,484</td>
<td>1,492</td>
<td>1,403</td>
<td>1,313</td>
<td>7,089</td>
<td>-24.9</td>
</tr>
</tbody>
</table>

**Figure 5:** Annual number of deaths for LBWF residents by place of birth by year. *excluding UK deaths. Data source: ONS annual mortality files.

This trend in place of birth is illustrated in Figure 6 which indicates deaths in people born in the UK form a declining proportion of deaths over time. This means that the proportion of deaths in communities of people born outside of the UK is increasing over time. Of the total number of deaths, the proportion occurring in UK born people fell from 70% to 67% over three years up to 2017.
3. Cause of death

During the period 2013 to 2017, neoplasms have been the leading underlying cause of deaths apart from in 2016 (Figure 7). Circulatory deaths have been the second most common underlying cause, followed by respiratory. The same data is illustrated in Figure 8 to illustrate the trend in underlying cause of death. This shows that deaths from both neoplasms and circulatory underlying causes have declined steadily. Only deaths from respiratory causes have increased.
Figure 8: Trend in underlying cause of death for LBWF residents by year. Data source: ONS annual mortality files.

Figure 9 illustrates annual underlying cause of death data and trend in number of deaths. From this it can be seen that the greatest annual reductions in number of deaths have been for circulatory and neoplasms (12 and 9 on average respectively). Deaths from other causes, nervous system and respiratory have been increasing over the period on average.

Deaths with underlying cause of cancer and circulatory have been falling. Respiratory deaths have been rising over time.

<table>
<thead>
<tr>
<th>Cause</th>
<th>2013</th>
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<th>2016</th>
<th>2017</th>
<th>Total</th>
<th>Trend</th>
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</thead>
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<tr>
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<td>468</td>
<td>404</td>
<td>356</td>
<td>392</td>
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<tr>
<td>Circulatory</td>
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<td>395</td>
<td>395</td>
<td>361</td>
<td>358</td>
<td>1,910</td>
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<tr>
<td>Respiratory</td>
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<td>177</td>
<td>222</td>
<td>208</td>
<td>190</td>
<td>991</td>
<td>2</td>
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<tr>
<td>Mental &amp; behav. dis.</td>
<td>122</td>
<td>147</td>
<td>137</td>
<td>130</td>
<td>124</td>
<td>660</td>
<td>-1</td>
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<tr>
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<td>68</td>
<td>46</td>
<td>50</td>
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<tr>
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<td>62</td>
<td>56</td>
<td>56</td>
<td>260</td>
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<td>External</td>
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<td>25</td>
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<tr>
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<tr>
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<td>43</td>
<td>99</td>
<td>37</td>
<td>259</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>1,397</td>
<td>1,484</td>
<td>1,492</td>
<td>1,403</td>
<td>1,313</td>
<td>7,089</td>
<td>-25</td>
</tr>
</tbody>
</table>

Figure 9: Underlying cause of death and trend for LBWF residents by year. *Endocrine, nutritional or metabolic disease (including diabetes). Data source: ONS annual mortality files.
Figure 10: Change in number of deaths by cause of death (2013 and 2014 (pooled) compared with 2016 and 2017 (pooled)). Data source: ONS annual mortality files.

Figure 10 illustrates changes in the number of deaths between 2013 and 2014 (pooled) and 2016 and 2017 (pooled). From this it can be seen that the greatest reductions in numbers of deaths have been seen in neoplasms and circulatory causes. There have been substantial increases in the number of respiratory and nervous system deaths over this period, as has been seen across London.

4. Cause of death and place of birth

Over the period 2013 to 2017, it can be seen from Figure 11 that neoplasms and circulatory disease are the leading underlying causes of death for people born in the UK. The same data is shown in Figure 12, excluding deaths of people born in the UK. This shows that circulatory disease is the leading cause of death for people born in Asia. Figure 12 also indicates that external causes appear disproportionally high for those born in Europe and mental & behavioural causes appear to be high for those born in the Caribbean Islands.
Figure 11: Underlying cause of death for LBWF residents by place of birth for 2013 to 2017. Data source: ONS annual mortality files.

Figure 12: Underlying cause of death for LBWF residents by place of birth (excluding UK) for 2013 to 2017. Data source: ONS annual mortality files.
Figure 13: Underlying cause of death for LBWF residents by place of birth for 2013 to 2017. Data source: ONS annual mortality files.

Figure 14: Underlying cause of death for LBWF residents by place of birth (excluding UK) for 2013 to 2017. Data source: ONS annual mortality files.
Figure 15: Standardised ratio (observed / expected number of deaths) for LBWF residents by place of birth and underlying cause of death for 2013 to 2017. *Endocrine, nutritional or metabolic disease (including diabetes). Data source: ONS annual mortality files.

A standardised ratio (observed / expected number of deaths) was calculated for each underlying cause and place of birth category and is shown in Figure 15. A ratio of less than one indicates fewer deaths compared to the LBWF resident population as a whole. Conversely, a ratio of more than one indicates more deaths than expected for that population.

From this it can be seen that death from endocrine, nutritional or metabolic disease (including diabetes) is higher than expected in people born in South America and Caribbean Islands. Other notably higher than expected causes are death from infectious diseases amongst people born in African, and external causes (typically accidents) amongst Europeans.

5. Place of death

In 2016/17 approximately one third of deaths in Waltham Forest occurred in the usual place of residence (Figure 16). This is the fourth lowest proportion in London and statistically significantly below the London and England averages. This has remained relatively stable since the preceding five years.
Figure 16: Comparison of proportion of deaths in usual place of residence. Data source: ONS annual mortality files.

Figure 17 illustrates the place of death for the two sexes in 2017. The majority of deaths occur in hospital. In 2017 about one third of deaths were in a care home or home and only 10 were in a hospice. 29 were categorised as Other.

Figure 17: Number of deaths by sex and place of death for LBWF residents (2017). Data source: ONS annual mortality files.
Figure 18 illustrates the historic and projected trend in place of death. Projected trends are based on linear regression of monthly historic data (Apr 2013 to Mar 2017). This Figure illustrates the trend for a reduction in the total number of deaths, and the number of deaths in hospital. Over this period the number of deaths in care homes or homes has ready constant.
Figure 18: Historic and projected monthly number of deaths by place of death for LBWF residents (2013 to 2017). Data source: ONS annual mortality files.

Figure 19: Historic and projected monthly proportion of deaths by place of death for LBWF residents (%) (2013 to 2017). Data source: ONS annual mortality files.

Figure 19 illustrates the effect of changing number of deaths by place on the proportion of deaths in hospital and care home or home. As a consequence of both the total number of deaths, and hospital deaths declining, the proportion of deaths in a care home or home is rising by 0.78% per year.
a) neoplasms

b) circulatory
c) respiratory

d) mental and behavioural disorders
Eighty percent of deaths are accounted for by the four causes shown in Figure 20. From Figure 20 it can be seen that for cancer and circulatory causes, the historic trend (2013 to 2017) is for a reduction in hospital deaths and an increase in deaths in usual place of residence (home or care home). This trend is most strongly established for neoplasms, so that if current trends continue, by mid 2022 equal numbers of hospital and community deaths from cancer are forecast.

For mental and behavioural disorders, there are already more community deaths and the trend will see this increase.

Only in the case of respiratory deaths has there been no substantial change in place of death over the period 2013 to 2017.

6. Place of death and age

Figure 21 indicates that since 2013 / 2014 there has been an increase in the proportion of community deaths for the older age groups (ie 70+ years). The proportion of community deaths has remained unchanged for those dying in middle years of life.

7. Place of death and place of birth

Figure 22 illustrates how place of death varies by place of birth.
Figure 22: Number of deaths by place of birth and place of death (2017). Data source: ONS annual mortality files.

Figure 23: Trend in proportion of deaths in care home or home by place of birth (2017). Data source: ONS annual mortality files.
Figures 23 and 24 illustrate how the proportion of deaths in hospital and care home/home has changed during the period 2013 to 2017 for place of birth.

The proportion of deaths in care homes or homes has remained fairly constant at around 35% for people born in Europe or Caribbean Islands (Figure 24) during the period 2013 to 2017. For people born in Asia or Africa, the proportion has increased from around 20% to 25%. Since 2015 the proportion of deaths in care home or home appears to have increased for UK born people.

In contrast the proportion of death in hospital has ranged from 60 to 80% during the period 2013 to 2017. People born in Europe have consistently had the lowest proportion of death in hospital. People born in Africa or Asia have experienced the highest proportion of hospital death.

The preferred place of death for LBWF residents is not well understood and it is not known whether these differences reflect choice in end of life or not.

8. Place of death and cause of death

Place of death varies with cause of death in Waltham Forest (Figures 25, 26, 27 and 28). For the four causes of death shown, in each case in Waltham Forest a lower proportion of deaths are in usual place of residence when compared to London and to England. However, over time the proportion of deaths in usual place of residence has been steadily improving in the borough and in the comparator areas for all four causes. The greatest improvements over time have been seen in
dementia/Alzheimer’s as a cause. Of the four causes of death, this greatest proportion of community deaths is seen in this cause. The least improvement has been seen in respiratory disease causes of death.
**Figure 25:** Comparison of proportion of cancer deaths in usual place of residence. Data source: ONS annual mortality files.

**Figure 26:** Comparison of proportion of deaths due to circulatory diseases in usual place of residence. Data source: ONS annual mortality files.
Figure 27: Comparison of proportion of deaths due to dementia/Alzheimer’s in usual place of residence. Data source: ONS annual mortality files.

Figure 28: Comparison of proportion of deaths due to respiratory diseases in usual place of residence. Data source: ONS annual mortality files.
Figure 29: Number of deaths by place of death and cause of death (2016 & 2017). Data source: ONS annual mortality files.

Figure 29 illustrates that neoplasms were the leading cause of hospital deaths in 2016 and 2017 whereas circulatory deaths were the leading cause of deaths at home. Deaths due to mental and behavioural disorders formed the leading cause of death in care homes. Differences in diagnosis coding of underlying cause of death between place of death settings might account for some of the observed differences.
From Figure 30 it can be seen that the large reduction in hospital deaths from 2013 to 2017 is mainly explained by reductions in circulatory and neoplasm deaths. In terms of increasing the proportion of deaths in the community, the increase in cancer home deaths has been partly offset by the reduction in home external cause deaths (essentially accidents).

The large reduction in neoplasm hospital deaths over the period has been accompanied by smaller increases in care home and home neoplasm deaths over the time period. This suggests that there has not been a sizeable shift from hospital to community cancer deaths; instead mortality from cancer has fallen more generally.

Reductions in mental and behavioural hospital deaths were associated with increases in care home and home deaths, suggesting a transfer to the community for these causes. Deaths from circulatory, digestive, external and endocrinial causes fell in all three settings over the period. This means that for these causes, there has been no shift at all from hospital to community deaths.

There were substantial increases in respiratory and nervous system hospital deaths, but only a very slight increase in home deaths for these causes. This means that these causes of death are becoming more prominent and are not substantially shifting to the community.

There was a substantial reduction in external cause deaths (accidents) in homes and hospital.
9. Advanced care plans

As at October 2018, there were 809 patients on the GP practice palliative care registers in the borough and of these there were 384 with a Co-ordinate My Care plan. This means that for approximately two thirds of the expected number of people dying annually (1,300), there is an entry on a palliative care register in the borough. Currently, about 30% of those people who are expected to die within the next year have a Co-ordinate My Care plan.

It is expected that an advanced care plan would have been created for patients on a palliative care register but the quality and timeliness of these plans is likely to be variable. It is expected that all Co-ordinate My Care plans would be of sufficient quality and timeliness.

10. Strategic implications

i. Increasing population ethnic diversity at end of life means that services need to support increasing population diversity and understand the implications of this on death and dying.

ii. As age at death is increasing, the health of those dying is likely to be increasingly complex. This may mean that care and support needs at end of life increase. It is possible that as a consequence, death in the community becomes increasingly difficult to achieve.

iii. Changes to causes of death meaning services will need to support increasing numbers of respiratory and nervous system deaths and fewer deaths from neoplasms and circulatory causes.

iv. Deaths from cancer, circulatory and mental and behavioural disorders already have strong, well established trends in location of death transferring from hospital to the community.

v. The only substantial cause of death that has not shown a shift from hospital to community deaths is respiratory. The end of life care system should focus on supporting respiratory deaths in the community if it is to achieve an increase in community deaths. This has consequences for the structure and nature of community health, social care and clinical services supporting palliative and end of life.