Title: Mobility, Mortality, and the Middle Ages: Identification of Migrant Individuals in a
14th Century Black Death Cemetery Population

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Mobility and migration patterns of groups and individuals have long been a topic of
interest to archaeologists, used for broad explanatory models of cultural change as well as
illustrations of historical particularism. The 14th century was a tumultuous period of history in
Britain, with severely erratic weather patterns, the Great Famine of 1315-1322, the Scottish
Wars of Independence, and the Hundred Years' War providing additional migration pressures
to the ordinary economic issues drawing individuals to their capital under more stable
conditions. East Smithfield Black Death Cemetery (Royal Mint) had a documented use
period of only two years (AD 1348-1350), providing a precise historical context (~50 years)
for data.
Adults (n=30) from the East Smithfield site were sampled for strontium and oxygen
stable isotope analysis of tooth enamel. Five individuals were demonstrated to be statistical
outliers through the combined strontium and oxygen isotope data. Potential origins for
migrants ranged from London's surrounding hinterlands to distant portions of northern and
western Britain. Historic food sourcing practices for London were found to be an important
factor for consideration in a broader than expected $^{87}Sr/^{86}Sr$ range reflected in a comparison of
enamel samples from three London datasets. The pooled dataset demonstrated a high level of
consistency between site data, divergent from the geologically-predicted range. We argue

that this supports the premise that isotope data in human populations must be approached as a
complex interaction between behaviour and environment, and thus should be interpreted
cautiously with the aid of alternate lines of evidence.