Early diagnosis of lung cancer is linked to achieving better outcomes for patients, and improving rates of survival. Over the last twenty years significant technological advances, developments in research and evolutions in specialised care have had a significant improvement to both the diagnosis of lung cancer and lung cancer supportive care.

**Advancement in Diagnosis**

- **2000** - PET/CT Scanner used for the first time in the USA for the diagnosis and staging of lung cancer.
- **2001** - PET/CT scanner used for the first time in Europe for the diagnosis and staging of lung cancer.
- **2007** - Patterns of DNA damage is observed in people with a history of substance abuse who develop lung cancer. These findings indicate that gene expression can serve as a lung cancer biomarker.
- **2010** - New lung cancer staging system is adopted: The American Joint Committee on Cancer (AJCC) and the Union for International Cancer Control (UICC) issue new guidelines for the system used by doctors to assess lung cancer and select the best combination of treatments for each patient. Greater consensus leads to improvements in uniformity of lung cancer diagnosis and treatment.
- **2014** - Study identifies novel genomic changes in the most common type of lung cancer: Researchers from The Cancer Genome Atlas (TCGA) Research Network identify novel mutations in the most common subtype of lung cancer.
- **2015** - First PD-L1 companion diagnostic assay is approved for use in NSCLC: The US FDA regulatory body approves PD-L1 IHC 22C3 pharmDx assay as the first companion diagnostic for NSCLC (non-small-cell lung cancer).
- **2016** - Lung cancer signature detected with simple breath test: Study shows that a simple breath test to detect a lung cancer ‘signature’ may be used in the future for lung cancer diagnosis and recurrence monitoring.

**Improvement in Care**

- **2004** - Widespread utilization of multi-disciplinary teams in cancer care: Between 1996 and 2004 there was a marked increase in the utilization of multi-disciplinary teams (MDTs) for the management of lung cancer patients within Europe and the USA. In 2004 more than 80% of patients were managed by a MDT, compared to less than 20% in 1996.
- **2007** - European Union health services review: Committee publishes guidelines for multi-disciplinary approach to cancer care: To ensure the best decisions about diagnosis, treatment and support.
- **2010** - One year survival rates improve: In the UK, 20% of men and 30% of women are alive a year after lung cancer diagnosis, compared to 17% of all patients in 1990.
- **2011** - UK National Lung Cancer audit shows impact of specialist nurses on care of lung cancer patients: An annual audit shows 64.8% of patients who saw a specialist nurse received treatment compared with 34.0% of patients those who did not.
- **2012** - Reduction in lung cancer incidence and mortality trends in the USA: Over the same period the rate of death from lung cancer decreased by 2.7% per year among men and 0.9% per year among women. Over the same period the rate of death from lung cancer decreased by 2.7% per year among men and 1.4% per year among women.
- **2014** - Insights into models for supportive care: Data from descriptive studies provides insights into supportive care service models in lung cancer, including: establishing a single point of contact for family advice regarding changes in symptom presentation and service models that offer home-based and remote monitoring.

Over the last two decades, significant advances have been made in the area of lung cancer research. As a result, patients with lung cancer are diagnosed sooner and continue to live longer following treatment, leading to a greater interest in the assessment of their quality of life.

References: