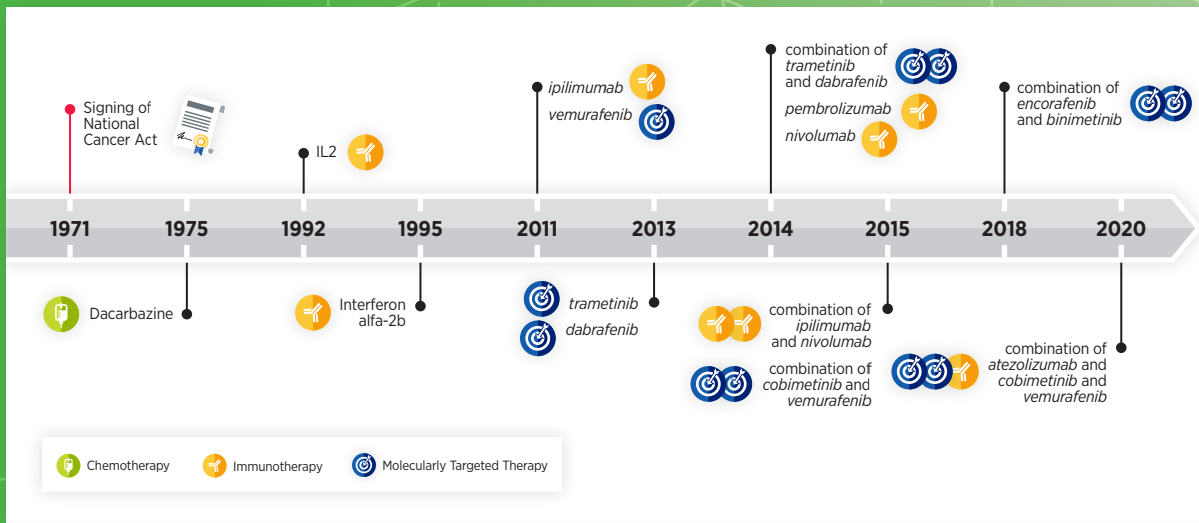


FIGURE 5

NATIONAL CANCER ACT
50 YEARS
 1971-2021

50 YEARS OF RESEARCH-DRIVEN THERAPEUTIC ADVANCES AGAINST MELANOMA



Melanoma is the deadliest form of skin cancer. According to the most recent estimates, incidence of melanoma in the U.S. will more than double by 2040, making it the second most common cancer. Until 2000, the standard of care for patients with metastatic melanoma was a cytotoxic chemotherapeutic called dacarbazine and/or an immune system stimulant called aldesleukin (Proleukin); however, neither treatment had shown a significant effect on overall survival in clinical trials. From January 1, 2011, to July 31, 2021, the U.S. Food and Drug Administration (FDA) approved four immunotherapeutics for use alone or in combination with either another immunotherapeutic or with molecularly targeted therapeutics in the treatment of patients with metastatic melanoma; these immunotherapeutics are atezolizumab (Tecentriq), ipilimumab (Yervoy), nivolumab (Opdivo), and pembrolizumab (Keytruda). In addition, the agency approved six molecularly targeted therapeutics for use alone or in combination with either another molecularly targeted therapeutic or an

immunotherapeutic for treating certain patients with metastatic melanoma; these therapeutics are binimetinib (Mektovi), cobimetinib (Cotellic), dabrafenib (Tafinlar), encorafenib (Braftovi), trametinib (Mekinist), and vemurafenib (Zelboraf). The March 2011 approval of ipilimumab came after the immunotherapeutic was shown to be the first treatment ever to extend survival for patients with this deadly disease. Together, these innovative new therapeutics have helped accelerate the decline in melanoma-related deaths both among males (5.7 percent per year between 2013 and 2018) and females (4.4 percent per year between 2012 and 2018). Importantly, the 5-year relative survival rate for individuals diagnosed with metastatic melanoma has increased from 18 percent (2006-2012) to 30 percent (2011-2017, the most recent time period for which these data are available). Note that this timeline focuses on systemic treatments for metastatic melanoma; other therapeutics have been approved for the prevention of disease recurrence or the treatment of localized lesions.