10-Year Analysis of Cancer Cases in the UAE (Excel-Based Project)

Project Overview

This report outlines a comprehensive analysis of cancer cases in the United Arab Emirates over a 10-year period. Conducted solely using Microsoft Excel, the project demonstrates the power of spreadsheet tools in deriving actionable public health insights without reliance on advanced BI platforms.

Methodology

Raw cancer registry data was cleaned, structured, and analyzed using Excel pivot tables, slicers, dynamic charts, and conditional formatting. Data was disaggregated by age group, gender, nationality, cancer type, stage, treatment type, and outcome.

Key Analytical Insights

1. Age Distribution:

- Highest incidence was recorded in the 30–41 age group (1,729 cases).
- The 18–29 age group showed the lowest occurrence (1,614 cases).

2. Gender and Nationality:

- Females constituted the most affected gender (4,985 cases).
- Emiratis represented the majority nationality among patients (5,920 cases).

3. Cancer Type:

- Leukemia emerged as the most common cancer type (1,314 patients).
- Prostate cancer was the least frequent (1,221 patients).

4. Cancer Staging:

- Stage III had the highest number of diagnoses (3,041 patients), followed closely by Stage II (3,036 patients).
- Stage IV was the least reported (1,504 cases).

5. Treatment Distribution:

- Radiation therapy was the most administered (2,519 patients).
- Chemotherapy followed closely (2,486 patients).

6. Diagnosis and Treatment Trends:

- The peak diagnosis year was 2020 with 1,131 cases.
- Diagnoses dropped sharply in 2024, with only 195 cases, potentially indicating data gaps or access issues.
- 2021 had the highest number of treatment initiations (1,122 patients).

7. Outcomes:

- A significant 4,931 patients recovered from cancer.
- 992 cases ended in mortality.

Q&A Outcome Highlights Excel's native filter and slicer tools enabled data-driven responses to analytical questions such as:

- "Which age group is most affected?"
- "What was the most common treatment type?"
- "How did diagnosis numbers change over time?"

Recommendations

1. **Targeted Screening:** Focus on ages 30–41 with targeted campaigns and early diagnosis programs.
2. **Youth Engagement:** Promote early checkups among the 18–29 group to establish preventative habits.
3. **Specialized Units:** Develop leukemia centers and train hematology specialists.
4. **Funding & Research:** Prioritize leukemia for research and treatment innovation.
5. **Treatment Infrastructure:** Invest in radiation equipment and training due to its high usage.
6. **Investigate Chemotherapy Access:** Explore reasons for its lower usage rate.
7. **Post-2020 Decline:** Investigate drop in 2024 cases for data accuracy or systemic issues.
8. **Women-Focused Programs:** Prioritize screening and care initiatives for female patients.
9. **Cultural Relevance:** Develop outreach in Arabic for Emirati population.
10. **Public Health Reengagement:** Restore momentum in cancer awareness post-pandemic.

Conclusion

Cancer remains a major health concern in the UAE, with significant patterns emerging across demographics, cancer types, and treatment outcomes. Leukemia's dominance and the 30–41 age group's vulnerability highlight where public health efforts should be concentrated. The drop in diagnoses in 2024 suggests systemic disruptions possibly linked to the aftermath of the COVID-19 pandemic. This report recommends a data-driven, culturally informed approach to prevention, early diagnosis, and treatment optimization in order to improve national cancer outcomes.