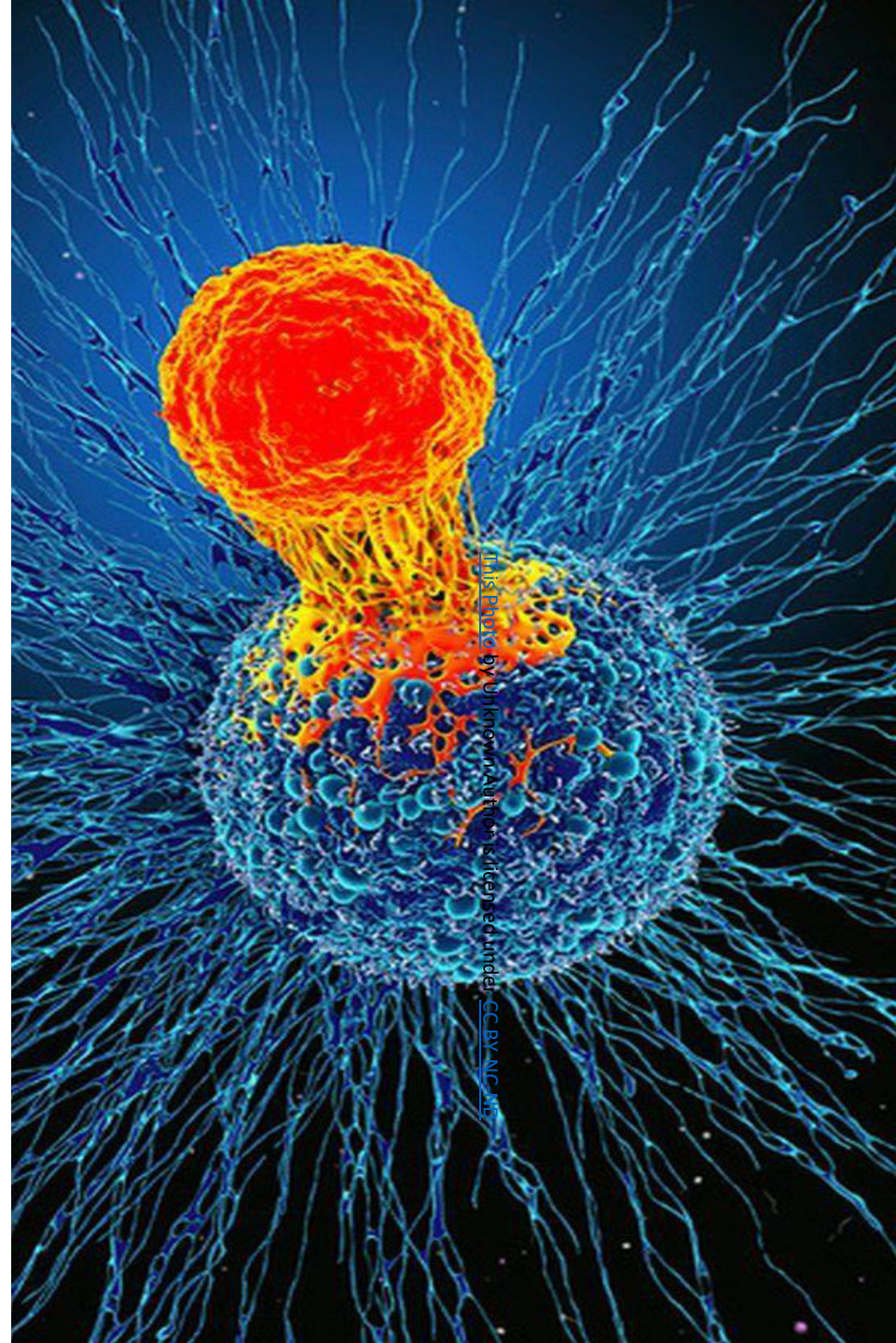


# **MULTIPLE MYELOMA TREATMENT : A POPULATION-BASED STUDY ON SURVIVAL RATE IN USA FOR YEAR 2014-2019**

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## MULTIPLE MYELOMA OVERVIEW IN USA

- Myeloma is a blood cancer of cells found in the bone marrow, specifically the so-called “plasma cells.” The bone marrow is the spongy tissue inside your bones that normally creates the different parts of your blood.
- Myeloma is usually called multiple myeloma because most people (90% or more) have more than 1 bone lesion when they are diagnosed, or lesions develop over the course of the illness.

**Multiple Myeloma** is relatively an uncommon cancer in USA

**Lifetime risk** of getting MM in USA is 0.76% ( 1in 132)

**Multiple Myeloma** market have grown thrice in last decade in USA

**Death Rate** in USA is 3.2 per 100,000 Men and Women in USA

**Average treatment cost** of MM in USA is \$74,000 to \$256,000

# MULTIPLE MYELOMA TREATMENT PARADIGM

## Diagnosis and Risk Stratification

Stem cell transplant  
ineligible

Stem cell  
transplant eligible

INDUCTION

CONSOLIDATION

MAINTENANCE

INDUCTION FOLLOWED BY CONTINUOUS THERAPY

RELAPSE 1

RELAPSE 2

RELAPSE 3

REFRACTORY DISEASE

# TREATMENT OPTIONS FOR MULTIPLE MYELOMA

## Chemotherapy

Although some meds are in pills, chemo is usually delivered through an IV infusion or via an injection, killing cancer cells over the course of four to six weeks

## Targeted Therapy

This type of treatment zeroes in on certain proteins and receptors in cancer cells slowing the growth and boosting your immune system to fight.

## COMMON TREATMENTS FOR MULTIPLE MYELOMA



## Steroids

These drugs include prednisone and dexamethasone which help to reduce inflammation, swelling and pain. They can also ease some chemotherapy side effects.

## Radiation Therapy

Treatment given with the help of various radiations which penetrate under the body and kills the cancerous cells.

## METHODOLOGY

- The study was conducted between March 21 to June 1, 2022, in which we studied in detail about the Multiple Myeloma, various therapies available for its treatment and the survival rate of Multiple Myeloma in US population.

### Research Question

- What is the 5-year survival rate of patients diagnosed with Multiple Myeloma undergoing treatment in USA?
- What is the growth rate in MM patient volume between Year 2018-2022? (Average New Patients and Total New Patients)

## RESEARCH DESIGN



**A population-based study was conducted to analyze the extent of survival rate of patients over a period in USA. Real-time data recorded for Multiple Myeloma patients has been used in the survival rate study.**

## RESEARCH METHODS



**STUDY TYPE:**  
Descriptive  
Study

**STUDY AREA:**  
USA

**STUDY  
PERIOD:**  
21<sup>st</sup> March  
2022 to 19<sup>th</sup>  
June 2022

**SAMPLE  
TECHNIQUE**  
Convenience  
Sampling

**DATA TYPE:**  
Secondary  
Research

**STUDY  
RESPONDENTS**  
All age group



## OBJECTIVES

- To study the survival rate of people diagnosed with Multiple Myeloma undergoing treatment in USA between year 2017-2021.
- To study various therapies used in the management of Multiple Myeloma.
- To study the growth rate in MM Patient volume between year 2018-2022.

## DATA ANALYSIS PLAN

- It is a quantitative analysis in which for survival rate study we will be using the SEER data 2015-2019 and to study the growth in MM patient volume we will be extracting data using SQL from dataset depository.
- Data will be gathered through different data sets available in dataset depository naming IQVIA data, EDM and Intrinsiq data.
- The data will be extracted using the SQL tool.
- The analysis of data will be done using the excel.



## DATASETS

The following datasets have been used for the research purpose:

### IQVIA DDD

- Sales and Volume data. Coverage of data is 85-95% at subnational level
- Outlet profile: Retail, non-retail/hospital or both.

### INTRINSIQ

- Covers dosing and Line of therapy information. 20-30% coverage
- Enhance claims coverage by enhancing ION.

### EDM

- Prescription level data at account. 85-95% coverage.
- Payer analytics

## ETHICAL CONSIDERATIONS

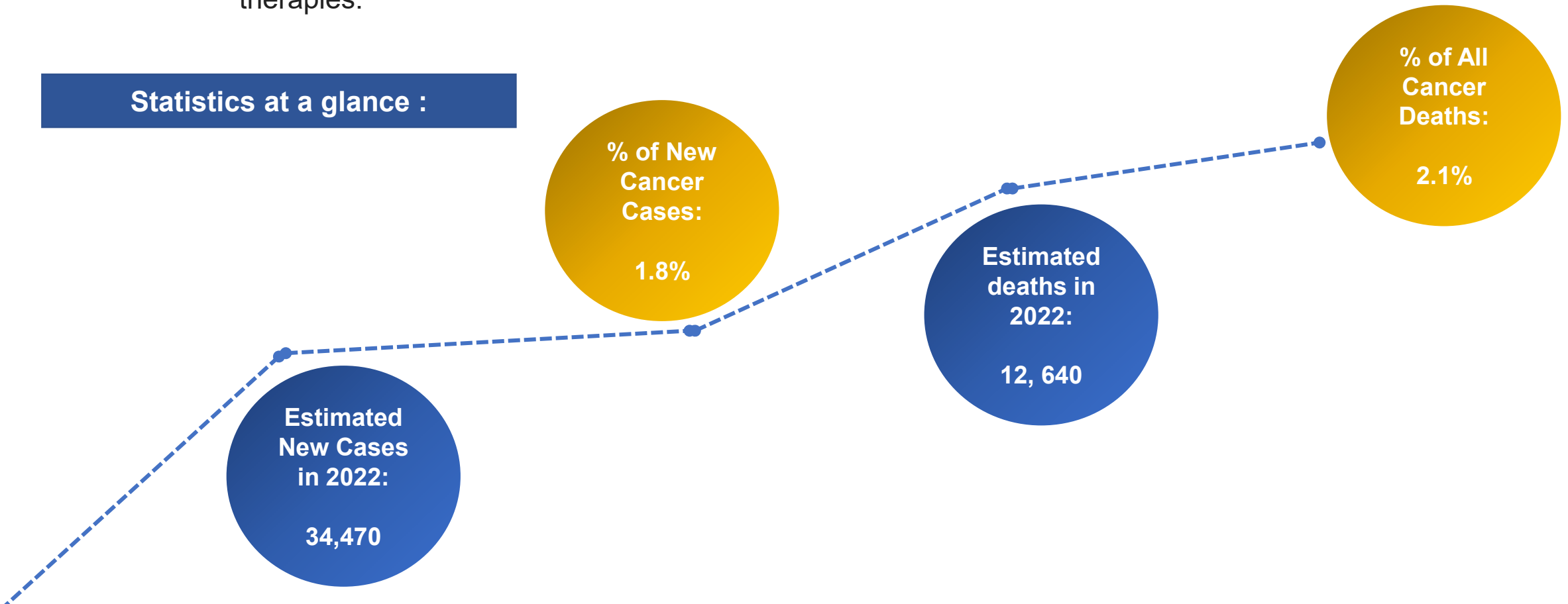
- Informed consent must be taken from study participants. Participation in the study was population based.
- All participants were made aware of the purpose of the study.
- Approval was taken from authorized signatory to use the name of the tool in the study.
- Personal data such as name and contact number were not collected from any of the participants. Identity of the participants have been kept anonymous.
- The data used for MM patient volume is confidential and the confidentiality will be kept for client satisfaction.
- The data is not utilized for any other unjustified reason.
- Only the main statistics are being used out of the complete analysis since the data is sensitive.



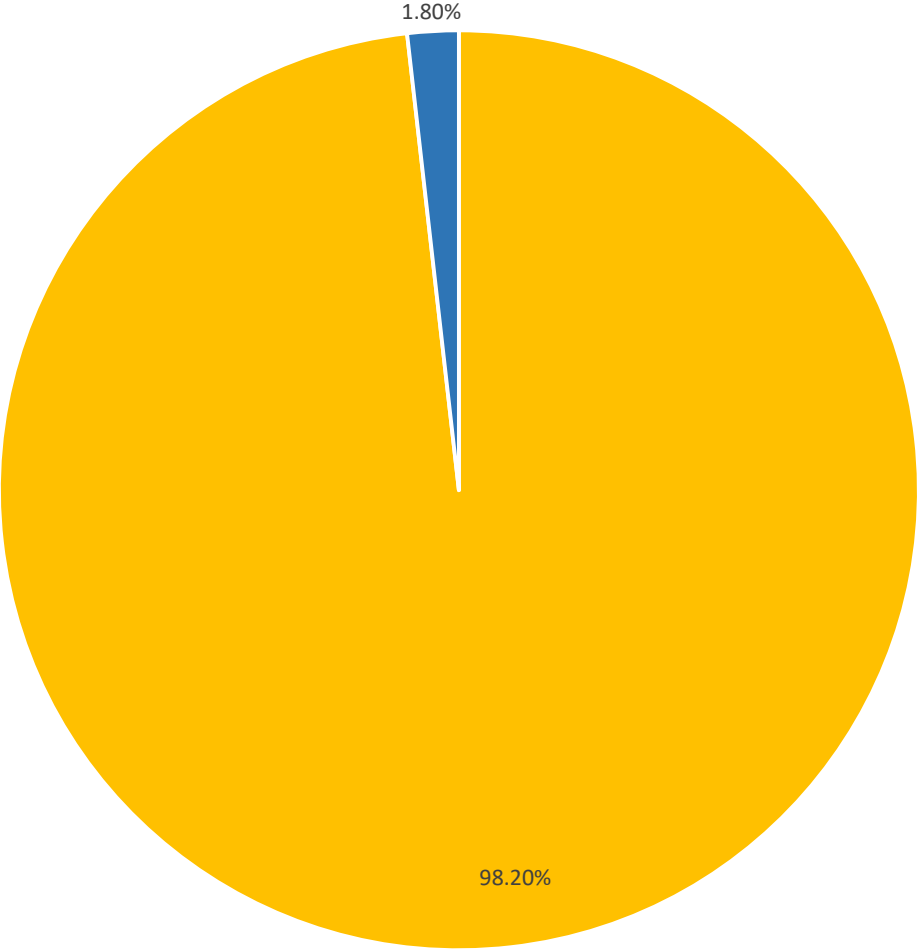
## RESULTS AND DISCUSSIONS

MM treatment utilization was described among the entire newly diagnosed MM population by identifying utilization of novel and non-novel pharmacotherapies. Furthermore, among these newly diagnosed patients who received a MM treatment, patients treated with novel therapies within 1 year of diagnosis showed significantly better survival than those with only non-novel therapies.

### Statistics at a glance :



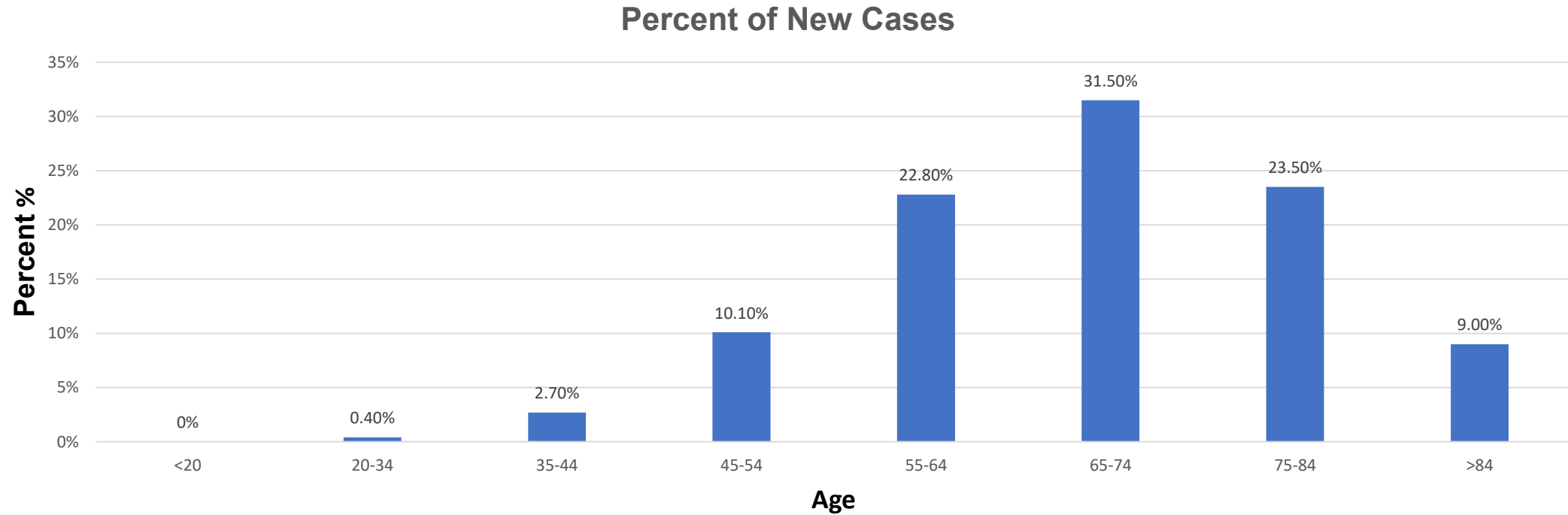
Myeloma represents 1.8% of all new cancer cases in USA



■ All cancer cases   ■ Multiple Myeloma Cases

| Common types of cancer            | Estimated new cases 2022 | Estimated deaths 2022 |
|-----------------------------------|--------------------------|-----------------------|
| 1. Breast Cancer (Female)         | 287, 850                 | 43, 250               |
| 1. Prostate Cancer                | 268, 490                 | 34, 500               |
| 1. Lung and Bronchus Cancer       | 236, 490                 | 130, 180              |
| 1. Colorectal Cancer              | 151, 030                 | 52, 580               |
| 1. Melanoma of the skin           | 99, 780                  | 7, 650                |
| 1. Bladder Cancer                 | 81, 180                  | 17, 100               |
| 1. Non-Hodgkin Lymphoma           | 80, 470                  | 20,250                |
| 1. Kidney and Renal Pelvis Cancer | 79, 000                  | 13, 920               |
| 1. Uterine Cancer                 | 65, 950                  | 12, 550               |
| 1. Pancreatic Cancer              | 62, 210                  | 49, 830               |
| 11. Myeloma                       | 34, 470                  | 12, 640               |

## PERCENTAGE OF NEW CASES BY AGE

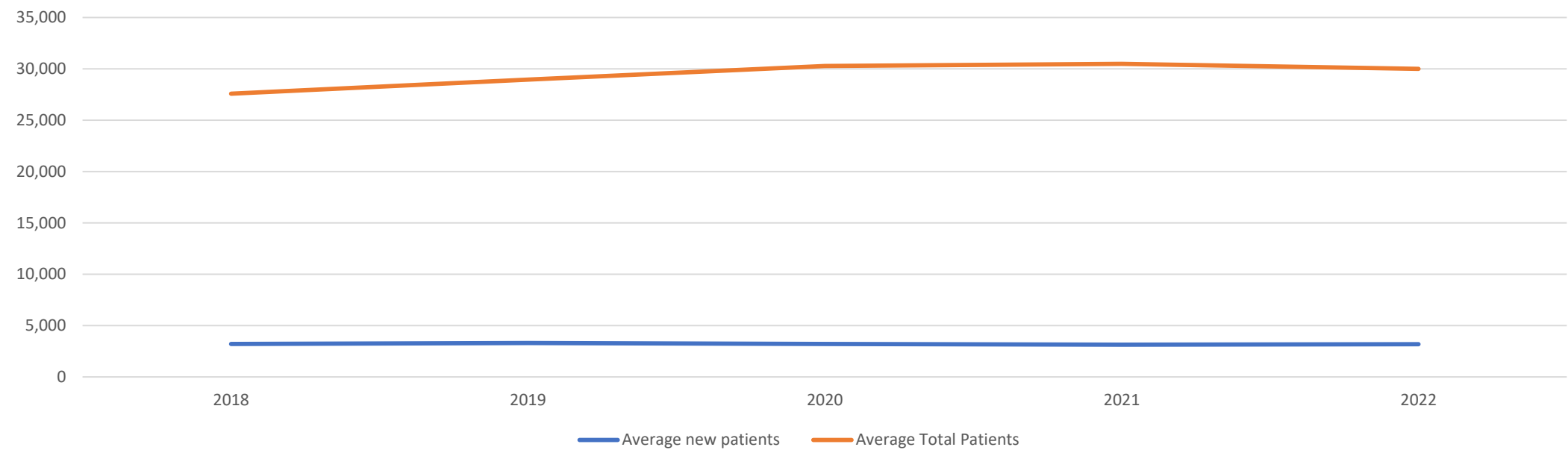


**Inference: Myeloma is most frequently diagnosed among people aged 65-74 years.**

**Median Age at Diagnosis:  
69**

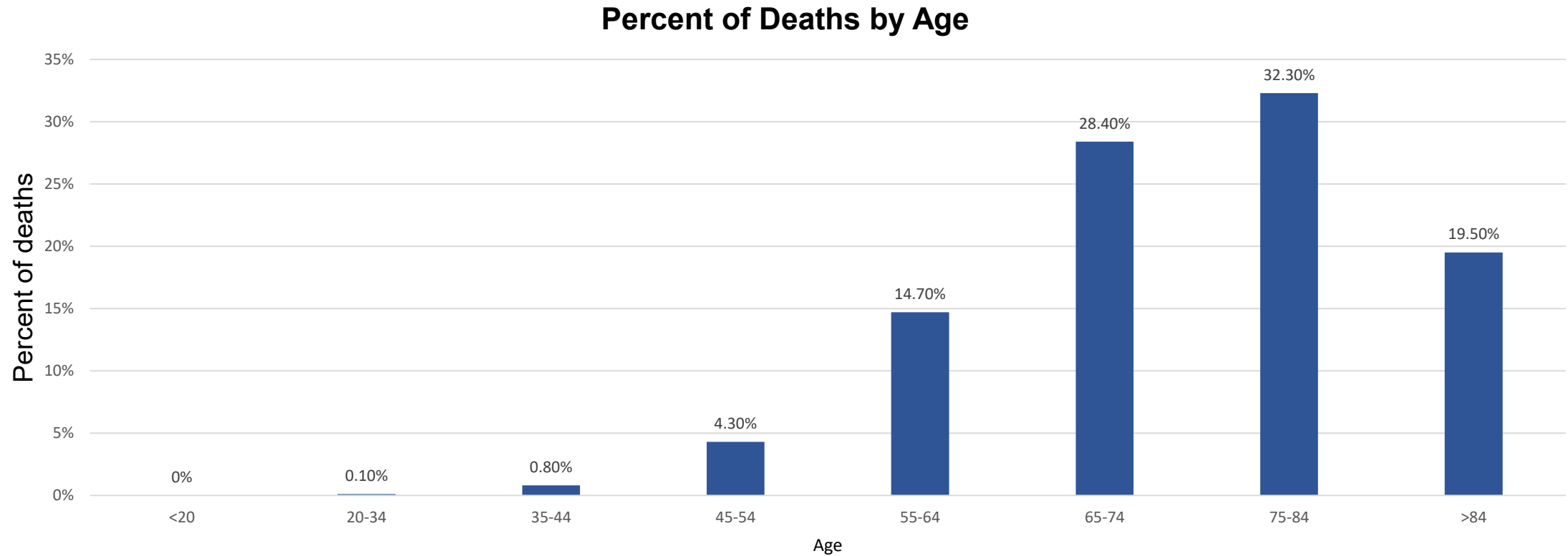
# GROWTH IN MM PATIENT VOLUME

Growth in MM Patient Volume between year 2018-2022



|      | Average New Patients | Total New Patients |
|------|----------------------|--------------------|
| 2018 | 3,207                | 27,575             |
| 2019 | 3,306                | 28,942             |
| 2020 | 3,220                | 30,262             |
| 2021 | 3,144                | 30,491             |
| 2022 | 3,182                | 29,992             |

## PERCENTAGE OF DEATHS BY AGE

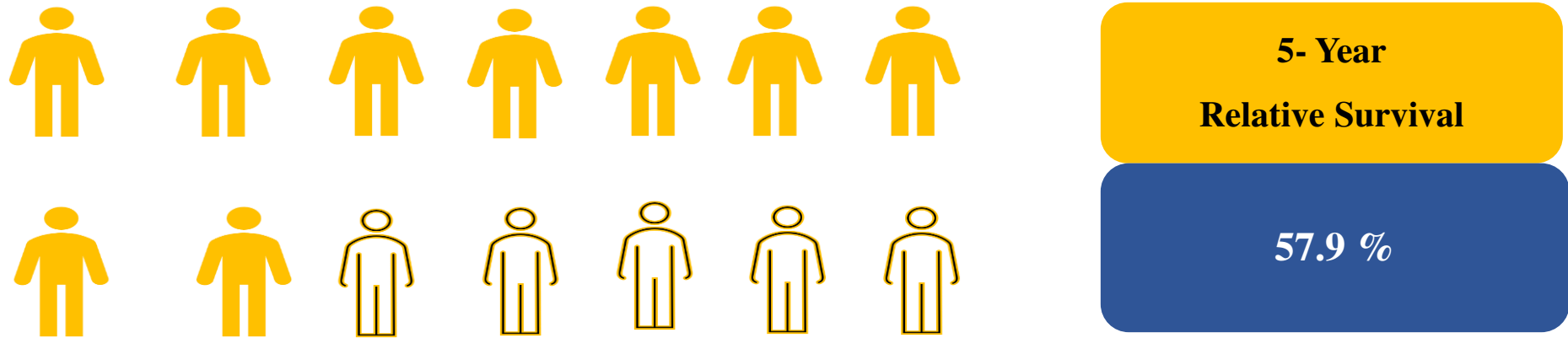


**Inference: The percent of myeloma deaths is highest among people aged 65-74 years.**

**Median Age at Death:  
75**



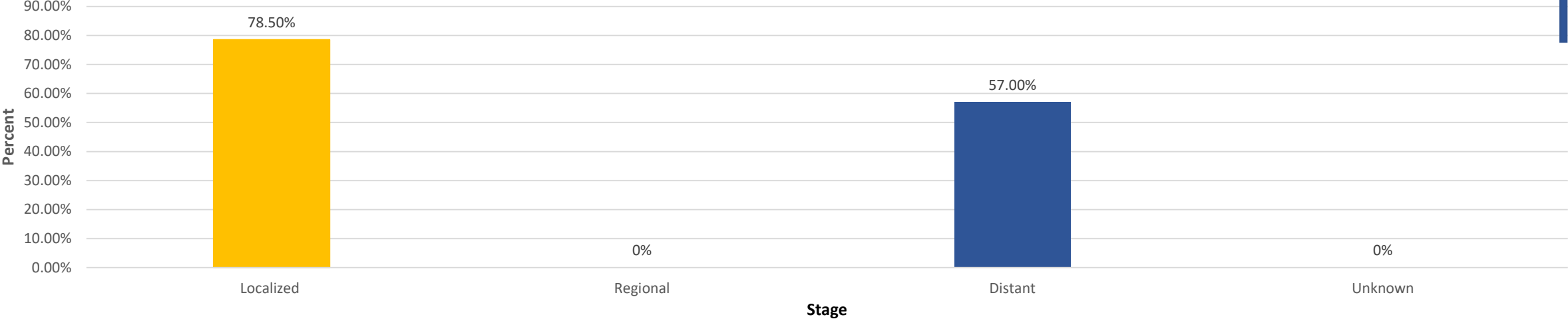
## SURVIVAL STATISTICS OF MULTIPLE MYELOMA PATIENTS IN USA



- Based on SEER data 2012-2018. White figures represent those who have died of myeloma. Green figures represent those who have survived 5 years or more.

# 5-YEAR RELATIVE SURVIVAL RATE BY STAGE

5-Year Relative Survival



| STAGES                                       | PERCENTAGE |
|----------------------------------------------|------------|
| Localized<br>(Confined to primary site)      | 4%         |
| Regional<br>(Spread to Regional Lymph nodes) | 0%         |
| Regional<br>(Spread to Regional Lymph nodes) | 95%        |
| Unknown<br>(Unstaged)                        | 0%         |

## RECOMMENDATIONS

- Keeping track of new cases, deaths, and survival over time (trends) can help scientists understand whether progress is being made and where additional research is needed to address challenges, such as improving screening or finding better treatments.
- Using statistical models for analysis, age-adjusted rates for new myeloma cases have been stable over years.
- To better study the real-time population data sets are the better options to go ahead with the study as they are updated every week so we can get the accurate and reliable information.
- For better research of real-time population, we can refer all these datasets such as EDM, IQVIA and INTRINSIQ as they are updated on weekly basis with all the information.
- The survival rate and the growth rate help in studying the actual market of the disease multiple myeloma in USA.

## CONCLUSION

The overall 5-year survival rate for people with multiple myeloma in the United States is 55%. For the 4% of people who are diagnosed at an early stage, the 5-year survival rate is over 77%. If the cancer has spread to a distant part of the body, the 5-year survival rate is over 54.

In conclusion, our large population-based study showed that the survival of Multiple Myeloma patients has been improving dramatically, in particular during the last decade. We believe this progress is due to the revolutionary changes in the therapeutic arsenal and supportive care in MM.

## REFERENCES

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Thank  
You