



UROLOGY & OLDER ADULTS EPIDEMIOLOGY & BURDEN OF DISEASE

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Janbazan Medical and Engineering Research Center (JMERC)

Day: Friday 3-Sep-2026 (۱۳-شهریور-۱۴۰۵)

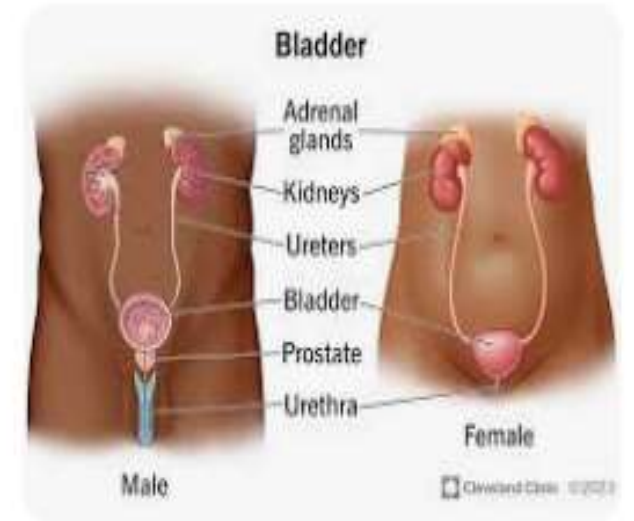
Time: 10:00-13:00

Janbazan Medical and Engineering Research Center (JMERC)

OLDER ADULTS

- **Prostate cancer,**
- **Benign prostatic hyperplasia(BPH),**
- **UTI**

Global population aged 65+:
761 million in 2021 to 1.6 billion 2050



BENIGN PROSTATIC HYPERPLASIA(BPH), UTI, PROSTATE CANCER:



- Ageing,
- Not modifiable behaviour,
- Non-fatal or slow-fatal_ less mortality,
- More years lived with disability (YLD) and
- More health-system cost
- Obstruction promotes infection, infection triggers catheterisation, cancer treatment produces both
- Burden is shifting from high-income to low- and middle-income countries faster than diagnostic and surgical capacity is being built



The Growth of Aging Population in Iran: An Achievement or a Challenge?

Bakhtiar Piroozli, Amjad Mohamadi-Bolbanabad & Azad Shokri

Pages 711-714 | Published online: 10 Apr 2024

Cite this article <https://doi.org/10.1080/01634372.2024.2340725>



An Achievement or a Challenge?

- **Mean age: 32 yrs**
- **Elderly rate:**
 - ❖ **2016: 9/5%** **2024: 11%**
 - ❖ **Estimation: 2030: 15%**
 - **Estimation: 2050: 30%**

سه برابر : 25y





آینده پژوهی ساختار جمعیتی در ایثارگران (جانباز/شاهد) $N \sim 963,000$

➤ در حال حاضر: 25.5٪ جمعیت سالمند: ($n=248,507$)



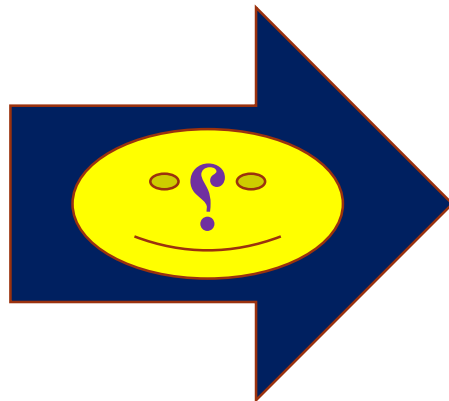
➤ سال ۱۴۱۰: 70.8٪ جمعیت سالمند: چالش جدی ۶۰-۶۹ ساله ها

▪ رشد سالمندی: ($n=595,172$) + ۷۰ سال حدود ۱۵٪



➤ سال ۱۴۲۰: 81.5٪ جمعیت سالمند: چالش جدی ۷۰ سال و بالاتر

▪ ($n=580,365$) + ۷۰ سال حدود ۶۵٪



زنگ خطر "چالش فرصت یا بحران":
آمادگی برای مواجهه این شیفیت جمعیتی چقدر است؟
آیا زیرساخت های لازم برای ارائه خدمات مهیا است؟



GBD:1990-2019 (AGE +75): UROLOGY IN TOP 18

Communicable, maternal, neonatal, and nutritional diseases
Non-communicable diseases
Injuries

F 75 years and older

1 Ischaemic heart disease	18.6 (17.1 to 19.7)	1 Ischaemic heart disease	16.2 (14.6 to 17.6)	66.6 (57.7 to 74.2)	-32.4 (-35.8 to -29.4)
2 Stroke	15.5 (14.3 to 16.7)	2 Stroke	13.0 (11.7 to 14.0)	60.5 (48.7 to 72.5)	-33.4 (-38.3 to -28.5)
3 COPD	9.9 (8.6 to 10.7)	3 COPD	8.5 (7.5 to 9.2)	63.6 (49.1 to 86.1)	-31.0 (-37.1 to -21.9)
4 Alzheimer's disease	3.8 (1.7 to 8.6)	4 Alzheimer's disease	5.6 (2.6 to 12.2)	180.0 (168.0 to 194.7)	2.6 (-2.1 to 6.6)
5 Lower respiratory infections	3.3 (3.0 to 3.6)	5 Diabetes	4.0 (3.6 to 4.3)	190.7 (179.4 to 201.0)	23.1 (18.6 to 27.5)
6 Diarrhoeal diseases	3.1 (2.0 to 4.5)	6 Lower respiratory infections	3.3 (2.9 to 3.6)	87.4 (76.2 to 99.6)	-25.3 (-29.3 to -20.4)
7 Diabetes	2.6 (2.4 to 2.9)	7 Lung cancer	2.6 (2.3 to 2.8)	164.3 (143.6 to 183.8)	16.4 (7.4 to 24.9)
8 Hypertensive heart disease	2.3 (1.9 to 2.5)	8 Falls	2.6 (2.2 to 2.9)	166.4 (151.1 to 183.4)	6.4 (0.4 to 13.3)
9 Age-related hearing loss	2.0 (1.5 to 2.7)	9 Chronic kidney disease	2.5 (2.3 to 2.7)	196.0 (173.9 to 211.1)	21.6 (12.6 to 27.4)
10 Lung cancer	1.9 (1.8 to 2.0)	10 Age-related hearing loss	2.5 (1.9 to 3.3)	137.8 (132.0 to 143.9)	-2.2 (-4.3 to -0.2)
11 Falls	1.8 (1.6 to 2.1)	11 Hypertensive heart disease	2.4 (1.8 to 2.7)	106.0 (68.5 to 131.7)	-15.1 (-31.5 to -5.0)
12 Tuberculosis	1.8 (1.6 to 2.1)	12 Diarrhoeal diseases	1.9 (1.2 to 3.0)	15.1 (-16.8 to 65.3)	-51.0 (-64.9 to -30.4)
13 Low back pain	1.7 (1.2 to 2.3)	13 Low back pain	1.8 (1.3 to 2.4)	105.7 (100.2 to 111.4)	-12.5 (-13.8 to -11.3)
14 Chronic kidney disease	1.6 (1.5 to 1.8)	14 Colorectal cancer	1.7 (1.5 to 1.8)	126.9 (113.4 to 138.3)	-4.5 (-9.7 to 0.1)
15 Stomach cancer	1.6 (1.4 to 1.7)	15 Blindness and vision loss	1.7 (1.3 to 2.2)	124.7 (119.3 to 130.7)	-7.4 (-9.9 to -4.8)
16 Blindness and vision loss	1.4 (1.1 to 1.8)	16 Atrial fibrillation	1.3 (1.1 to 1.5)	148.6 (134.8 to 161.9)	-1.8 (-6.9 to 2.5)
17 Colorectal cancer	1.4 (1.3 to 1.5)	17 Stomach cancer	1.3 (1.1 to 1.4)	55.0 (43.8 to 66.6)	-32.9 (-37.5 to -28.0)
18 Asthma	1.2 (1.0 to 1.7)	18 Prostate cancer	1.1 (1.0 to 1.4)	117.0 (102.1 to 142.3)	-8.5 (-14.6 to 2.1)
19 Cirrhosis	1.2 (1.0 to 1.3)	19 Cirrhosis	1.1 (1.0 to 1.2)	82.3 (62.1 to 100.9)	-21.3 (-30.2 to -13.5)
20 Prostate cancer	1.0 (0.8 to 1.2)	20 Parkinson's disease	1.1 (1.0 to 1.2)	153.7 (138.7 to 166.6)	6.0 (0.0 to 11.1)
21 Atrial fibrillation	1.0 (0.8 to 1.2)	21 Osteoarthritis	1.1 (0.6 to 2.1)	139.5 (136.5 to 142.6)	0.8 (-0.4 to 2.1)
22 Osteoarthritis	0.9 (0.5 to 1.7)	22 Oral disorders	0.9 (0.6 to 1.3)	112.0 (106.4 to 117.6)	-10.9 (-12.9 to -8.8)
23 Oral disorders	0.8 (0.6 to 1.2)	23 Tuberculosis	0.9 (0.8 to 1.0)	-6.3 (-16.9 to 14.6)	-59.2 (-64.0 to -50.3)
24 Parkinson's disease	0.8 (0.8 to 0.9)	24 Asthma	0.8 (0.7 to 1.0)	25.2 (3.2 to 41.2)	-46.2 (-55.9 to -39.8)
25 Upper digestive diseases	0.8 (0.7 to 0.9)	25 Road injuries	0.8 (0.7 to 0.9)	110.0 (99.8 to 118.1)	-9.3 (-13.5 to -5.9)

The most common cancers in men

The most commonly diagnosed types of cancer in men (excl. NMSC)

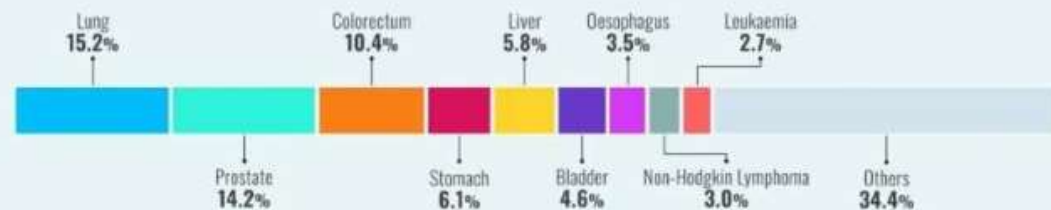


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According to the World Health Organization, lung cancer was diagnosed in 1.6 million men in 2022 and caused 1.2 million deaths. It is the most common cancer among men in 33 of 185 countries.



DISTRIBUTION OF THE MOST COMMON CANCERS IN MEN BY THEIR SHARE OF TOTAL NEW CASES



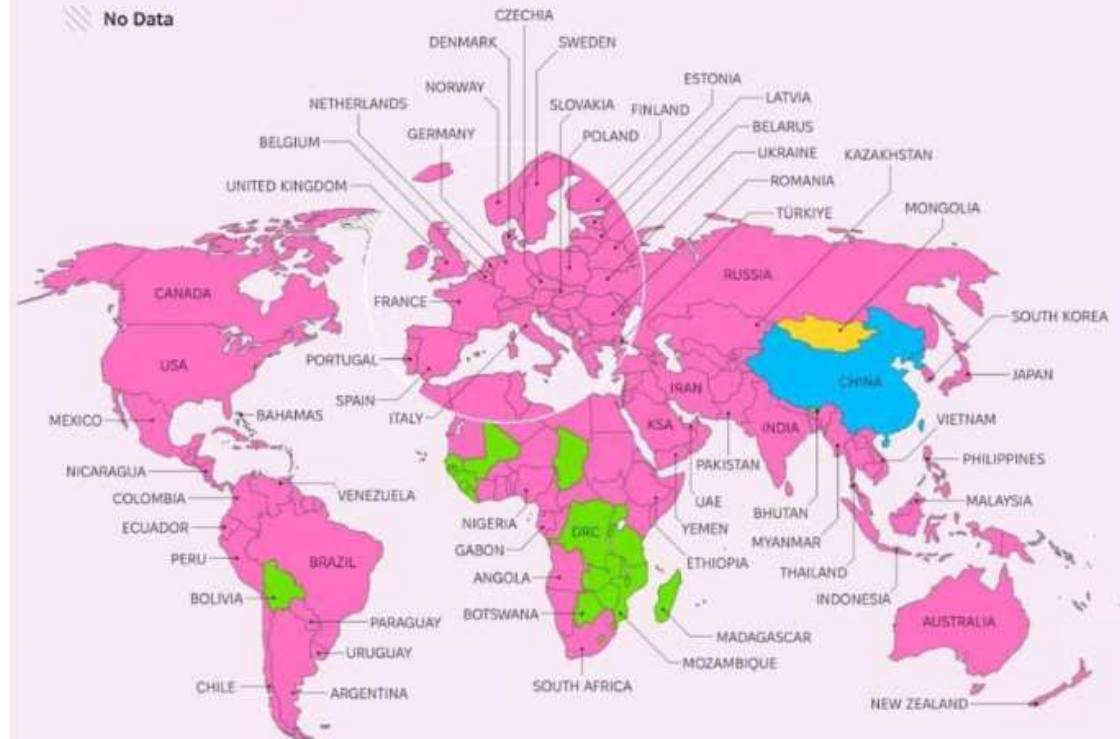
The most common cancers in women

The most commonly diagnosed types of cancer in women (excl. NMSC)

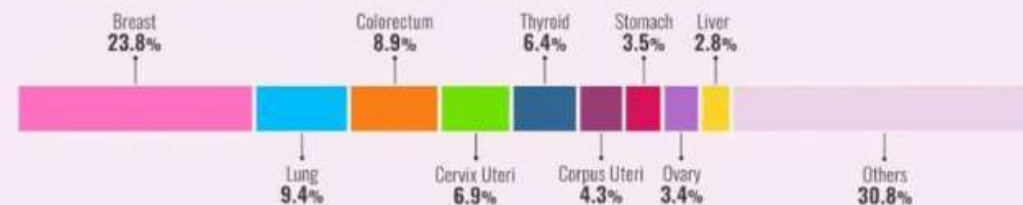


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According to World Health Organization, breast cancer was diagnosed in 2.3 million women in 2022 and caused 670,000 deaths. In 157 out of 185 countries, it was the most common cancer among women.



DISTRIBUTION OF THE MOST COMMON CANCERS IN WOMEN BY THEIR SHARE OF TOTAL NEW CASES



Changing Epidemiology



Incidence Outpaces Mortality Reductions:

- Global incidence has increased substantially (+161% between 1990 and 2021), reflecting improvements in diagnostic infrastructure.
- Age-standardized mortality has seen a slight decline globally (-0.83%), reflecting improvements in treatments in high-income regions.

Geographic disparities remain severe, with highest burdens shifting toward regions **lacking diagnostic infrastructure.**

Ref: James ND, Tannock IN, N'Dow J, et al. *The Lancet Commission on Prostate Cancer. The Lancet* (2024) 403:1683–1722. DOI: 10.1016/S0140-6736(24)00517-4.

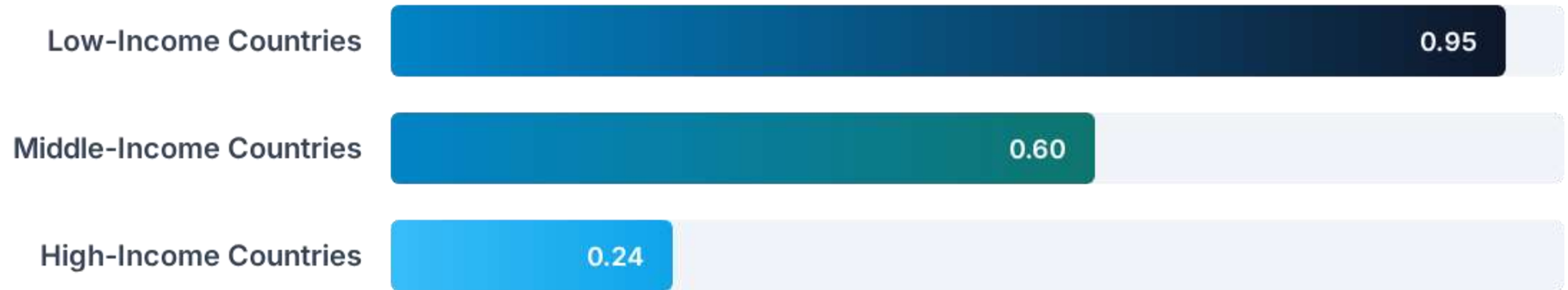
Ref: Global burden of prostate cancer: age-period-cohort analysis (GBD 2021), PubMed 2025





Income countries Disparities in Outcomes

Mortality-to-Incidence Ratio (MIR) Across Economic Regions:



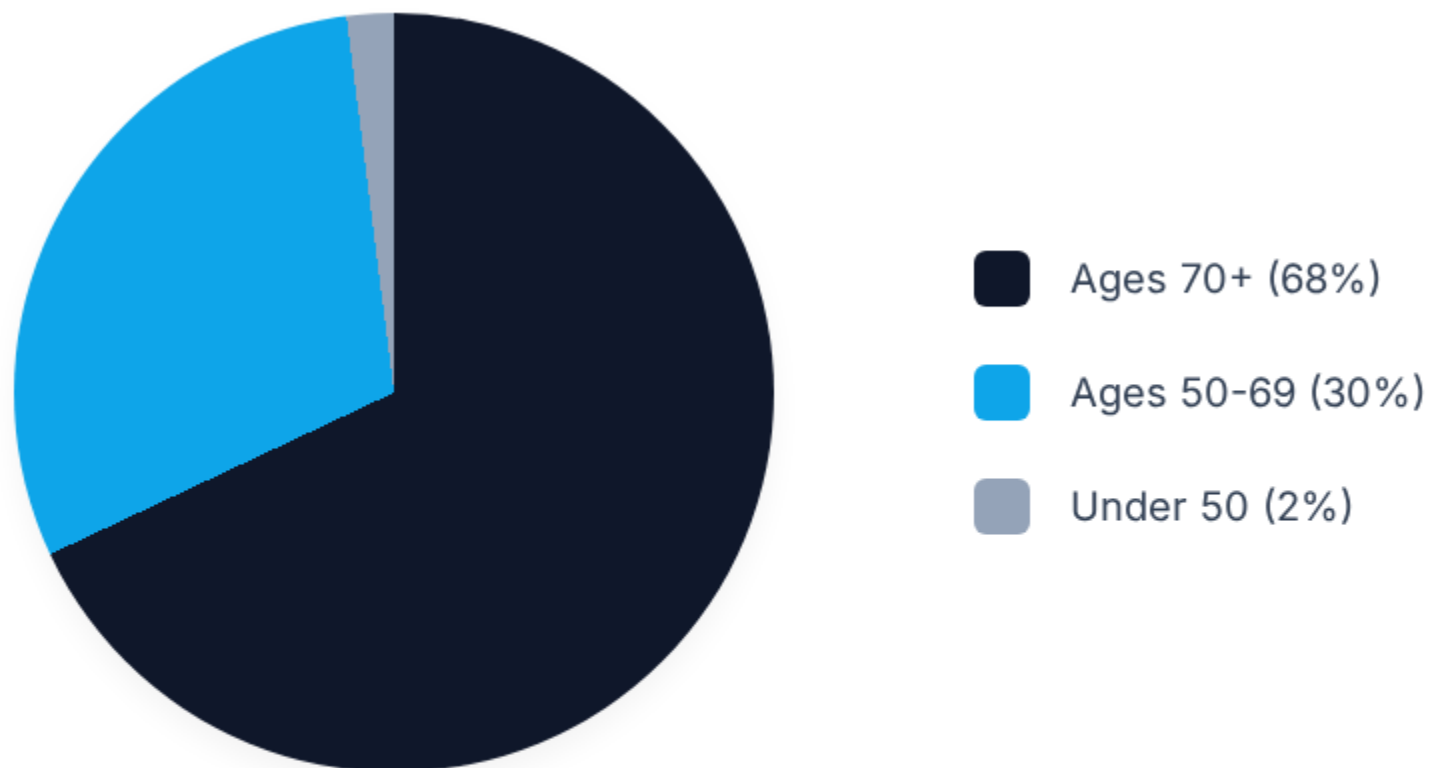
The mortality-to-incidence ratio is nearly five times higher in low-income countries compared to high-income regions, heavily reflecting severe gaps

***Early detection,
Screening practices, and
Access to therapeutic interventions.***

Ref: Global Epidemiological Trends (GBD 2021), Translational Andrology and Urology, 2025; Prostate Cancer Statistics Global Overview 2026



Disease Burden by Age Group



*Prostate cancer overwhelmingly affects older populations. **Individuals aged 70 and above account for 68% of the global Disability-Adjusted Life Years (DALYs)**, underscoring the disease's direct association with global aging populations.*



Global Disparities: HIC vs LMIC



5-Fold Mortality Gap

The mortality-to-incidence ratio (MIR) is 0.95 in low-income countries compared to 0.24 in high-income countries.

 The Lancet (2024)



Late Presentation

Advanced metastatic disease represents the vast majority of primary diagnoses in LMICs due to non-existent screening.

 JAMA Netw Open (2022)



Infrastructure Shortage

 Profound deficits persist in urological surgeons, radiotherapy equipment, and access to essential ARPI therapies.

The Lancet (2024)





The Limitations of Prevention

Ineffective Lifestyle Interventions

Unlike many other malignancies, the main risk factors for prostate cancer (**age, family history, African heritage**) are unavoidable.

The projected rise in cases cannot be prevented by lifestyle changes or broad public health interventions alone.

The Screening Imperative

Primary prevention is early screening high risk males, the strategic focus must shift toward secondary prevention.

Trials of screening are urgently needed in LMICs to inform ways to improve early diagnosis without causing massive overdiagnosis of trivial disease.



ESTIMATED PROSTATE CANCER MORTALITY RATE: 185 COUNTRIES-2025



Highest **DALYs**:

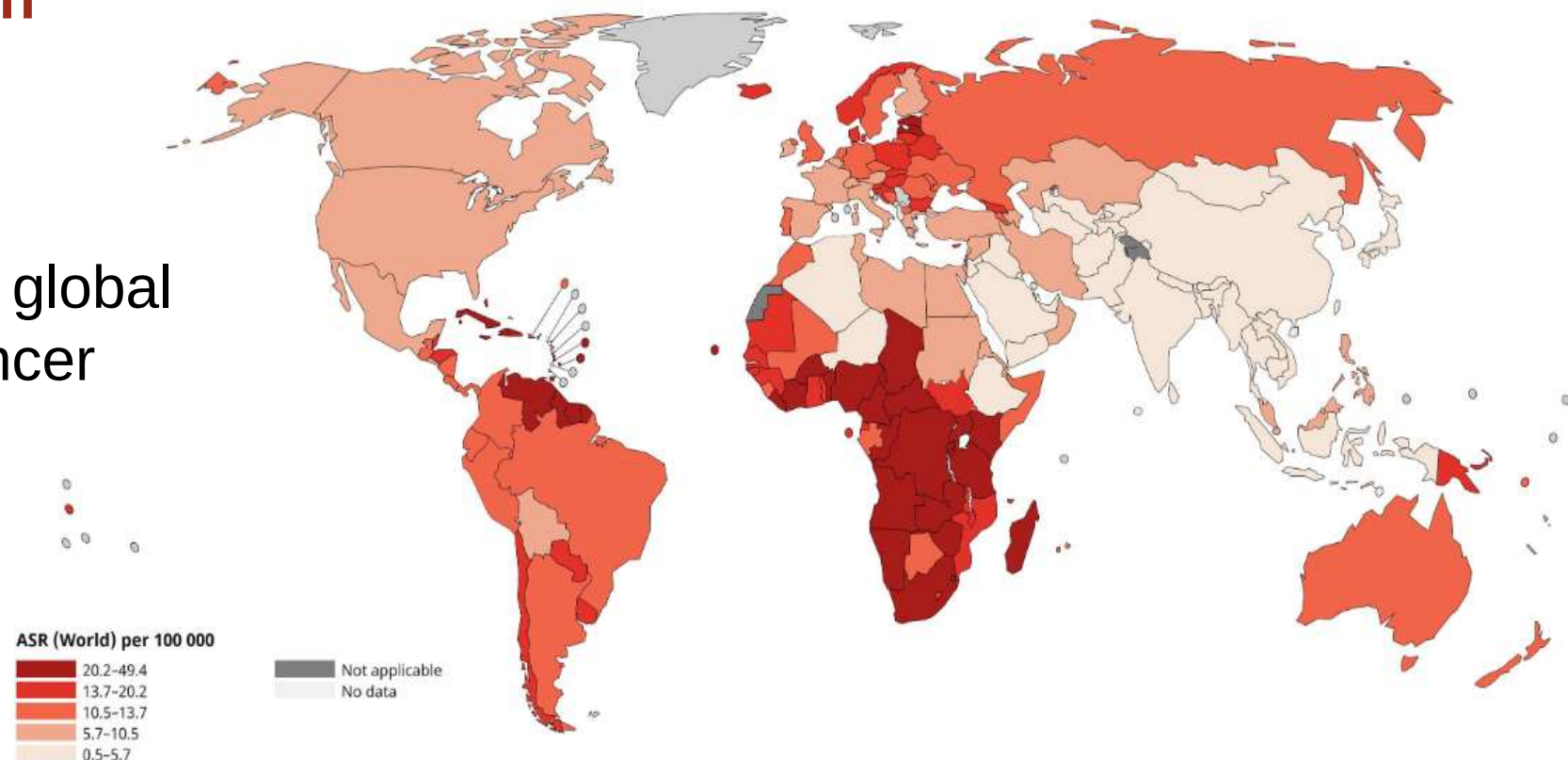
Sub-Saharan Africa

Latin America/Caribbean

Low income countries

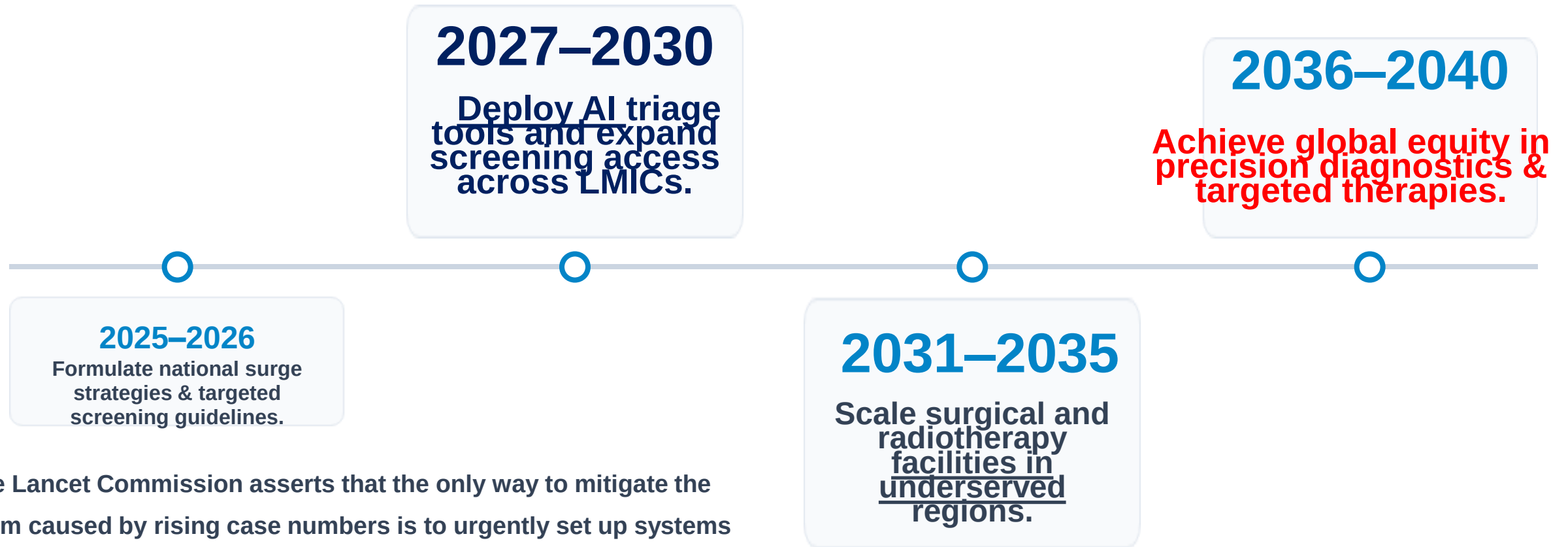
Highlights the significant global disparities in prostate cancer incidence and mortality, emphasizing the role of:

- **Health care access,**
- **Genetic factors, and**
- **Screening practices**





Roadmap to Mitigate



The Lancet Commission asserts that the only way to mitigate the harm caused by rising case numbers is to urgently set up systems for earlier diagnosis, augmented by Artificial Intelligence (AI) and novel personnel mixes.

Exact Reference: James ND, Tannock IN, N'Dow J, et al. *The Lancet Commission on Prostate Cancer. The Lancet* (2024) 403:1683–1722. DOI: 10.1016/S0140-6736(24)00517-4.





Strategic Recommendations (2024-2026)

-  **Expand Infrastructure:** Immediately address the shortage of specialist surgeons and radiotherapy services, primarily in LMICs, but also in high-income regions with uneven provision.
-  **Leverage Technology:** Implement outreach programs that harness global smartphone availability for education, utilizing both social and traditional media platforms.
-  **Empower Patients:** Deploy novel methods to empower patients, such as giving individuals direct control of their health data via cloud-based medical record systems.
-  **Diversify Research:** Focus research on understanding the drivers of ethnic differences, as current research disproportionately focuses on men of European origin, despite rates being twice as high in men of African heritage.



COSTS OF DIAGNOSIS & TREATMENT: PROSTATE CANCER IN ELDERLY MEN



- Aged **70 years** or older, the median per-patient cost(for dx and workup, treatment, follow-up, and morbidity management) was **\$14 453 (4887\$-27899\$)** within 3 years after diagnosis; Maintenance \$2,600 for continued care .
- **\$74,000** for care in the last year of life.
- Sys. Review **2024**, the cost of prostate cancer screening varies:
 - MRI-based screening has been found to be cost-effective
 - **Risk calculators and personalized screening protocols**
- Estimating **lifetime costs** of early stage \$28,000 to \$112,774 when complications were considered



National Profile: Cancer Screening Profile in Iran



Empirical Cancer Screening Rates in Iran

42.2%

Cervical Cancer (Pap/HPV)
Peak: 54.9% (Ages 40–49)

25.0%

Breast Cancer (Mammography)
Peak: 41.2% (Ages 50–59)

12.3%

Prostate Cancer (PSA)
Overall Male Adult Pop.

6–7.5%

Colorectal (FIT Screening)
6.2% Male / 7.5% Female

Key Epidemiological Observations in Iran

Over **50% to 78% of prostate cancer cases** in Iran and the broader MENA region are currently diagnosed only **after developing obstructive LUTS or bone metastases**.

Urban Residents: Display significantly higher participation across all modalities (aOR = 1.14–1.53), reflecting specialist clinic density in major cities.

Insurance Impact:

Basic health insurance increases screening **38%**,
Complementary insurance **45%**.

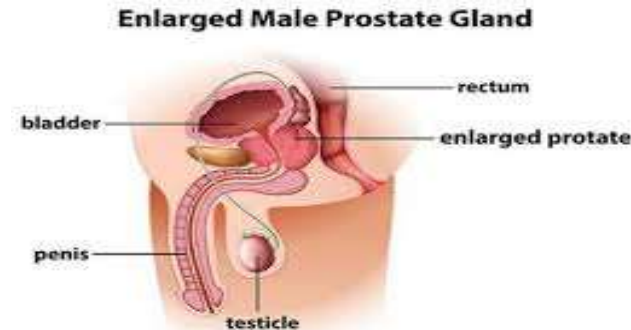


BPH Epidemiology & Global Trends



Key Epidemiological Trends (GBD 2021/2025)

(26.2% Lifetime Risk)



- **#1 Urological Condition:** BPH is the leading urological disease globally by incidence rate (ASIR: 5,531.88 per 100,000 men).
- **+115.2% Case Surge:** Incident cases surged >115% from 1990 to 2021–2024 driven by population aging, peaking in men aged 65–69.
- **2035 Forecast:** Global prevalence is projected to increase from ~7,878/100k in 2022 to **8,620 per 100,000 by 2035**.

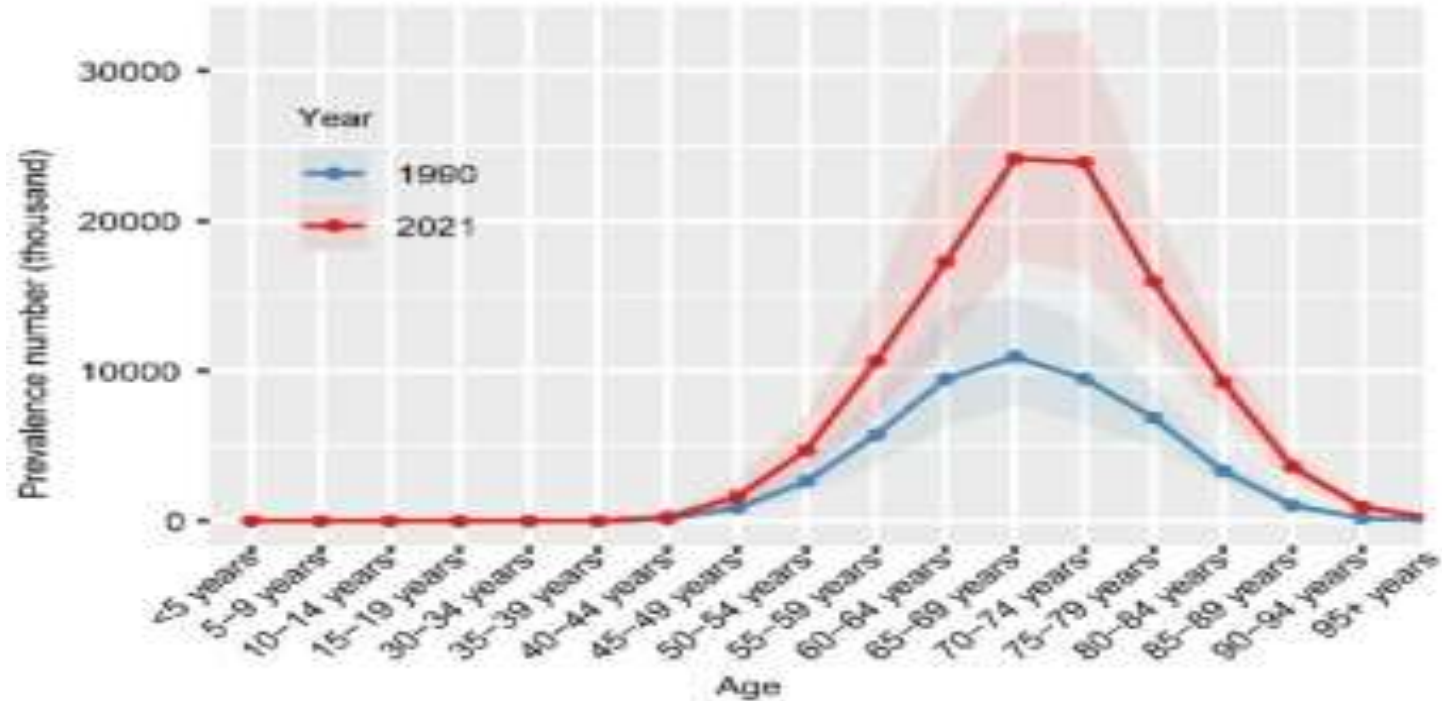
Regional Distribution: Highest age-standardized disease burden is concentrated in Eastern Europe, High-Income North America, and Asia.





BPH: YEARS OF DATA COVERAGE 1990-2021

NATURE 2025





BENIGN PROSTATIC HYPERPLASIA-BPH

Age-Specific Prevalence Velocity

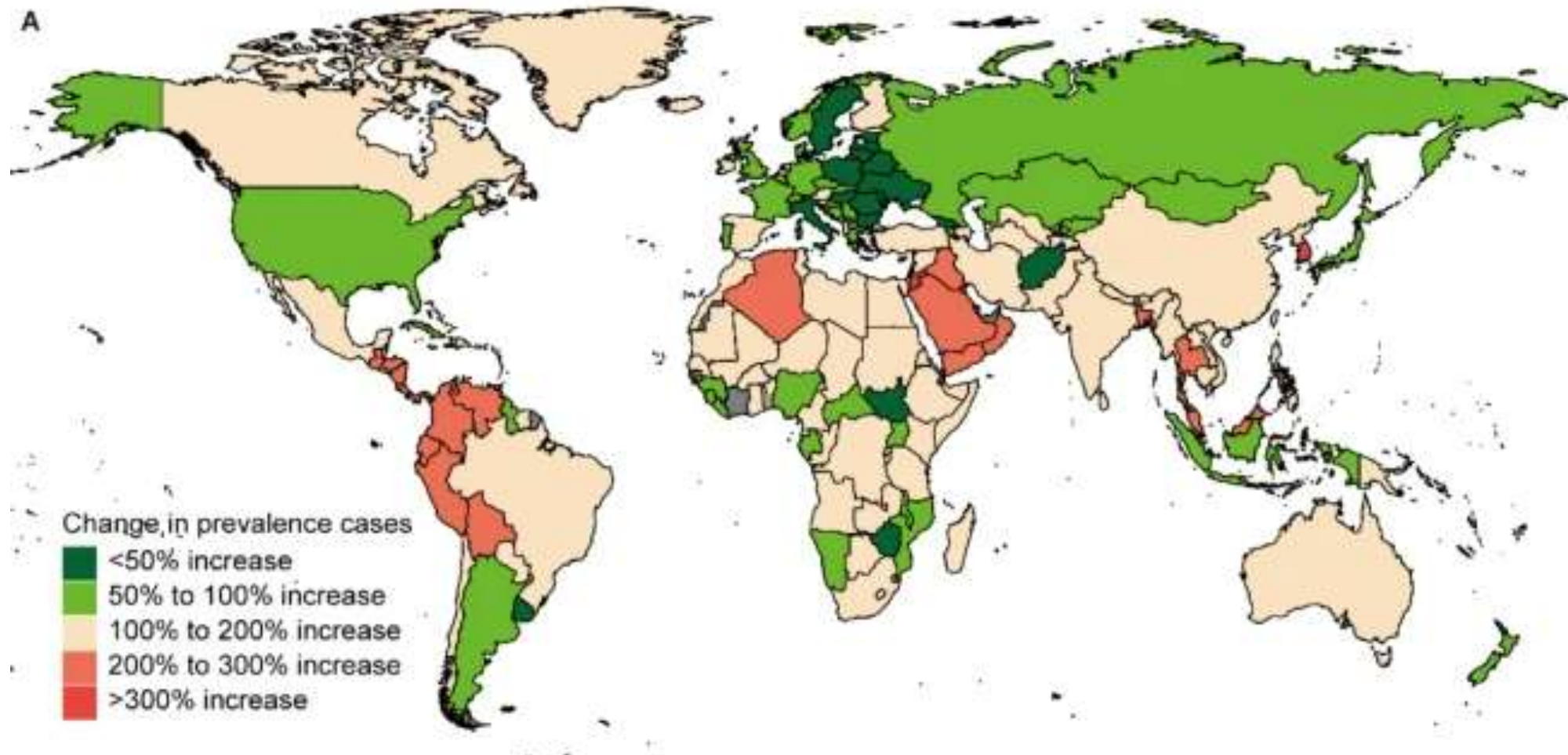
Histological BPH is virtually absent before age 40, after which it increases exponentially:

- Age <40: **<0.1%**
- Age 40–49: **14.2%**
- Age 50–59: **38.5%**
- Age 60–69: **68.0%** (*Peak case volume & DALYs globally*)
- Age 70–79: **78.0%–82.0%**
- Age 80+: **85.0%–90.0%**



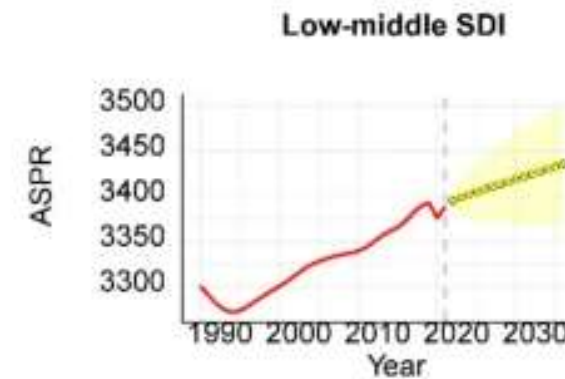
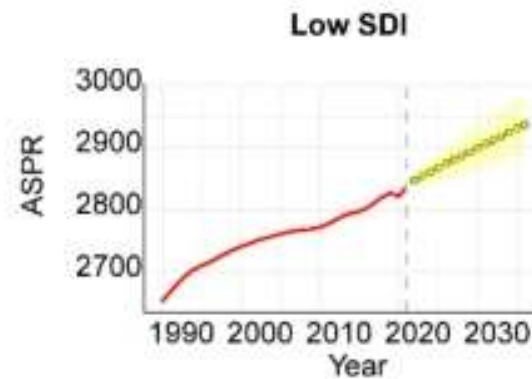
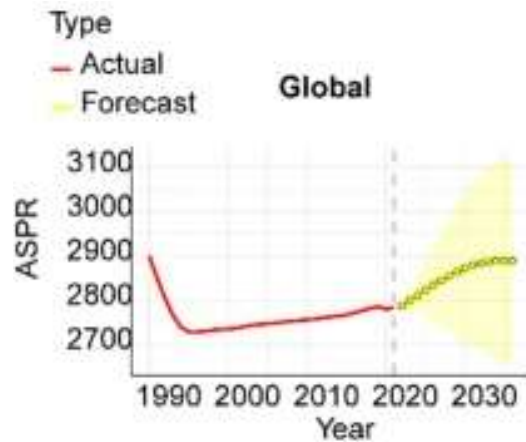
BPH: YEARS OF DATA COVERAGE 1990-2021

NATURE 2025

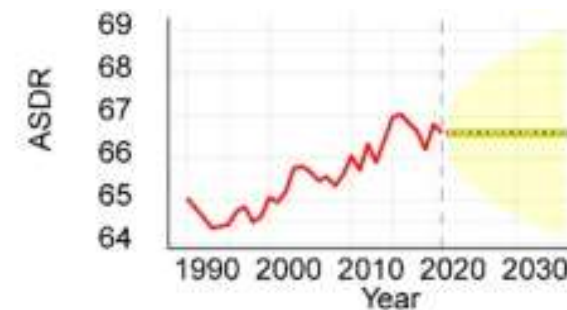
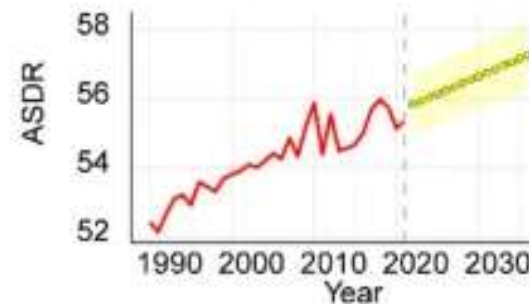
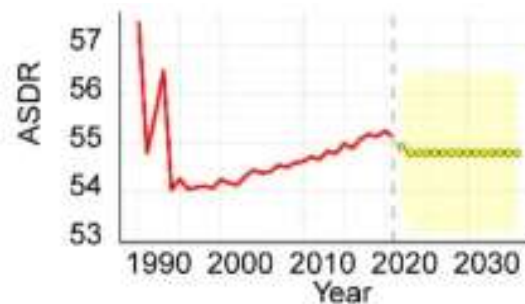




FORECASTING THE NEXT 15 YEARS' TRENDS: NATURE 2025



prevalence

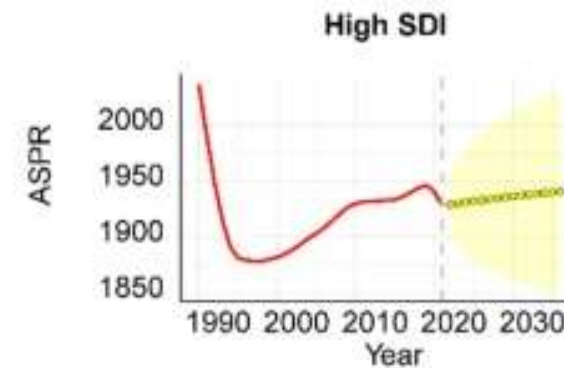
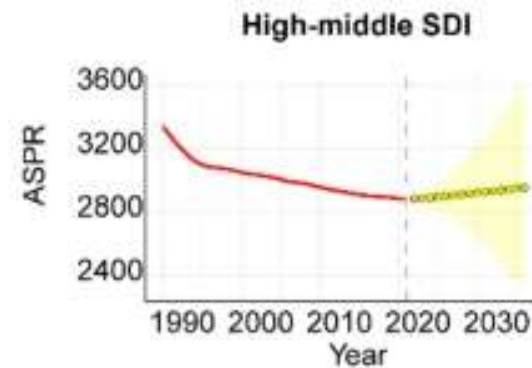
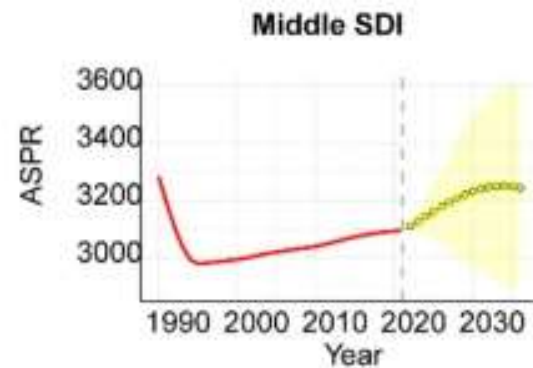


DALY

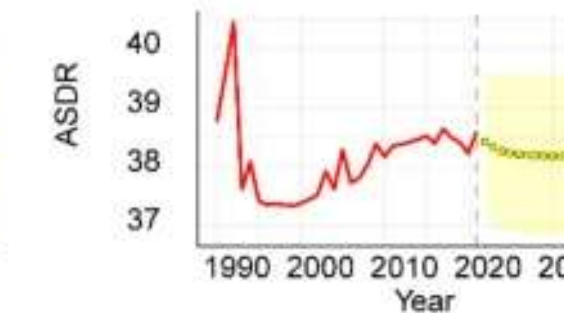
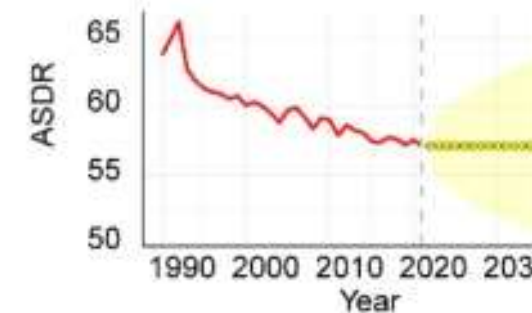
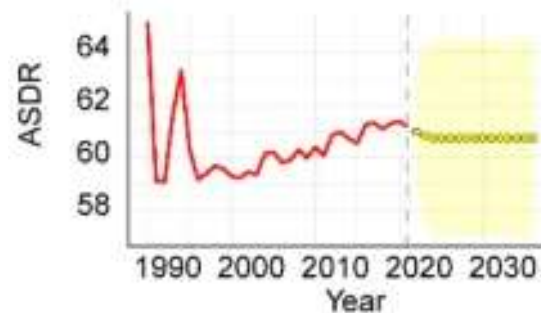




FORECASTING THE NEXT 15 YEARS' TRENDS: NATURE 2025



prevalence



DALY





COST OF BPH MANAGEMENT:

- **Direct Economic Costs** (long-term pharmaceutical regimens, outpatient monitoring, and endoscopic resections): **\$18 billion to \$24 billion** annually,
- **Indirect Economic Costs** (severe nocturia, reduced work efficiency, and fall-related injuries): estimated **\$3 billion to \$5 billion** worldwide each year
- **Per case=** ranging from **\$255 to \$5,729** depending on severity and interventions.
- **Forecast 2050 Global Economic Projection:** (direct and indirect burden) **\$45 billion to \$60 billion annually**

•(Saigal & Joyce, 2005, *Journal of Urology*; Sandhu et al., 2024, *Journal of Urology*), (United Nations DESA, 2024, *World Social Report*, Sandhu et al., 2024, *Journal of Urology*).



UTI in Older Adults



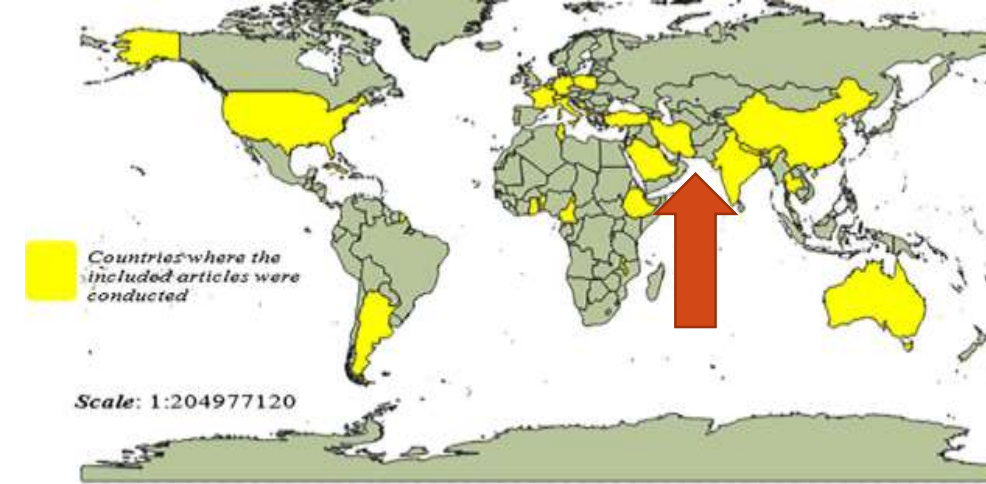
Key Epidemiological Trends (GBD Data)

- **Nursing Home High-Risk:** Prevalence spikes to **47.2%** among long-term care residents worldwide.
- **AMR Mortality:** Antimicrobial resistance-related deaths in patients aged 70+ increased by **>80%** since 1990 (Lancet GBD 2021).
- **Massive Healthcare Utilization:** UTIs cause >8 million outpatient visits and are the **#1** source of bacteremia in elderly patients.



URINARY TRACT INFECTION:2023

38 PAPERS & 981,221 PATIENTS



- **Worldwide incidence (each year) of urinary tract infection among patients was found to be 1.6%** (95% CI: 1.0, 2.4)&
- Western Pacific Region: 0.4%, Eastern Mediterranean Region: 1.1% [95% CI: 0.5, 2.5] and American region accounted: 1.9% [95% CI: 0.8, 4.3]
- Healthcare-associated infections (HAI) pose severe threats to patients:
 - Antimicrobial-resistant microorganisms: **no accurate data available**
 - 36% of healthcare-associated infections

BURDEN

- The global burden of UTIs is rising and is influenced by geographical location, age, sex, and economic development, crucial for guiding medical practices and forming relevant policies.





UTI in Older Adults

Key Epidemiological Trends (GBD Data)

Older Adults (65 and Older) **rising by Age**

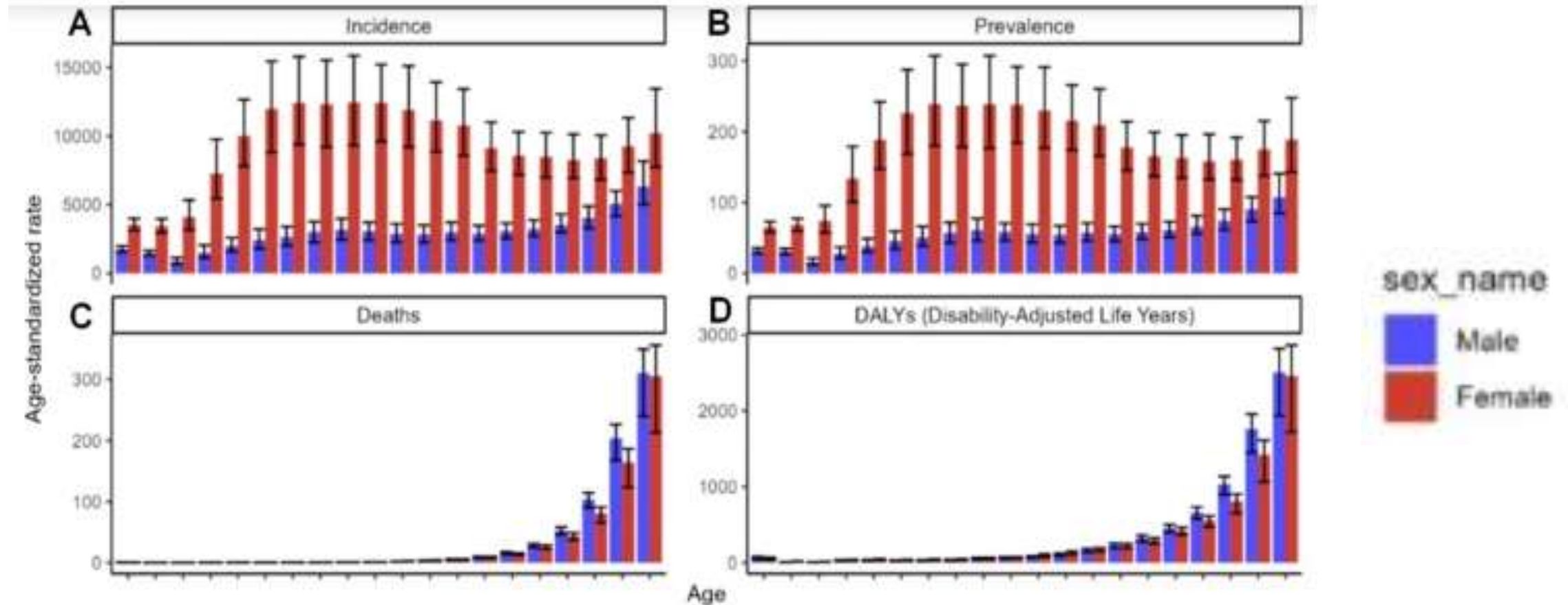
- **Ages 65–69:** Prevalence is about 6.8% in older adults.
- **Ages 70–74:** Prevalence increases to 8.2%.
- **Ages 75–79:** Prevalence rises to 10.0%.
- **Ages 80–84:** Prevalence reaches 11.8%.
- **Ages 85 and older:** Prevalence climbs to 14.3% overall, with **female-specific rates approaching 30%.**





UTI BY AGE & SEX IN 2021

NATURE 2025 PUBL.



(A) Age-standardised incidence rates; (B) Age-standardised prevalence rates;
(C) Age-standardised deaths rates; (D) Age-standardised DALYs rates.

Janbazan Medical and Engineering Research Center (JMERC)

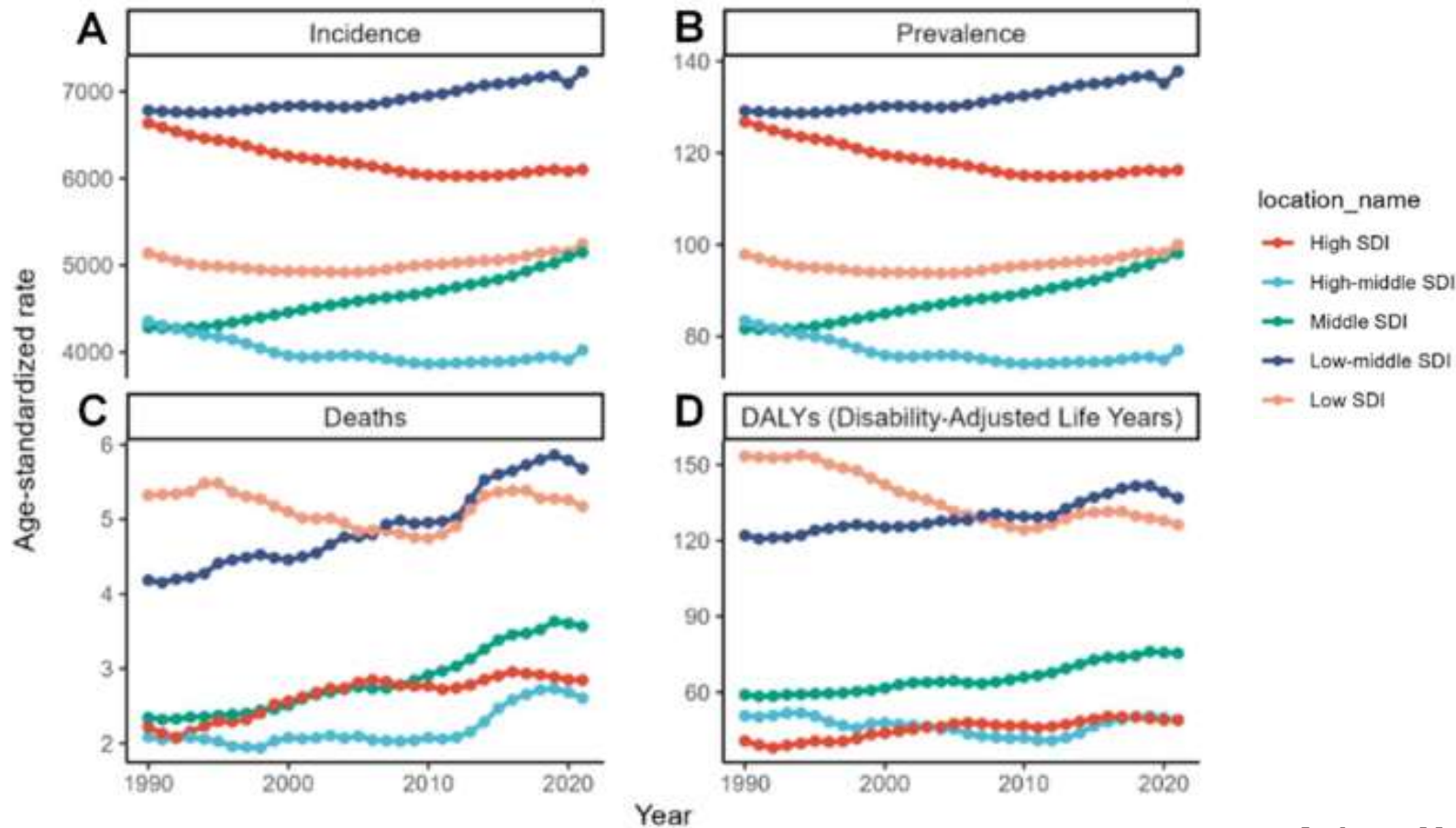
<https://www.nature.com/articles/s0-89240-025-41598>





UTI BY AGE & SEX IN 2021

NATURE 2025 PUBL.

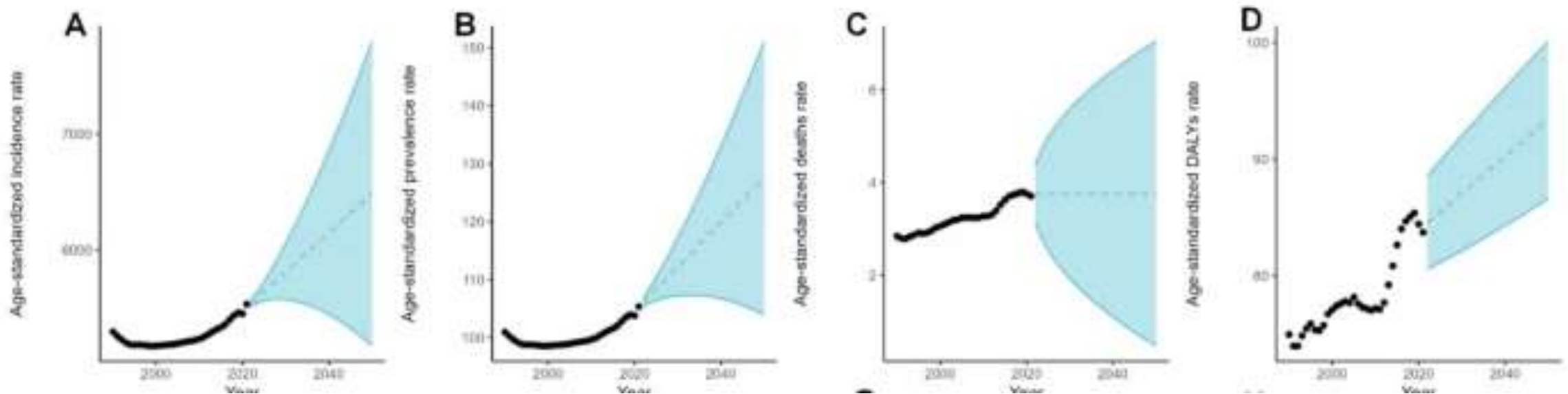


from 1990 to 2021, the global burden of UTIs showed an overall **upward trend**, particularly pronounced disease burden among

- **Women (young, adult, old),**
- **older men, and**
- **low–middle SDI regions.**



FORECASTS OF GLOBAL BURDEN OF UTI NATURE 2025 PUBL.

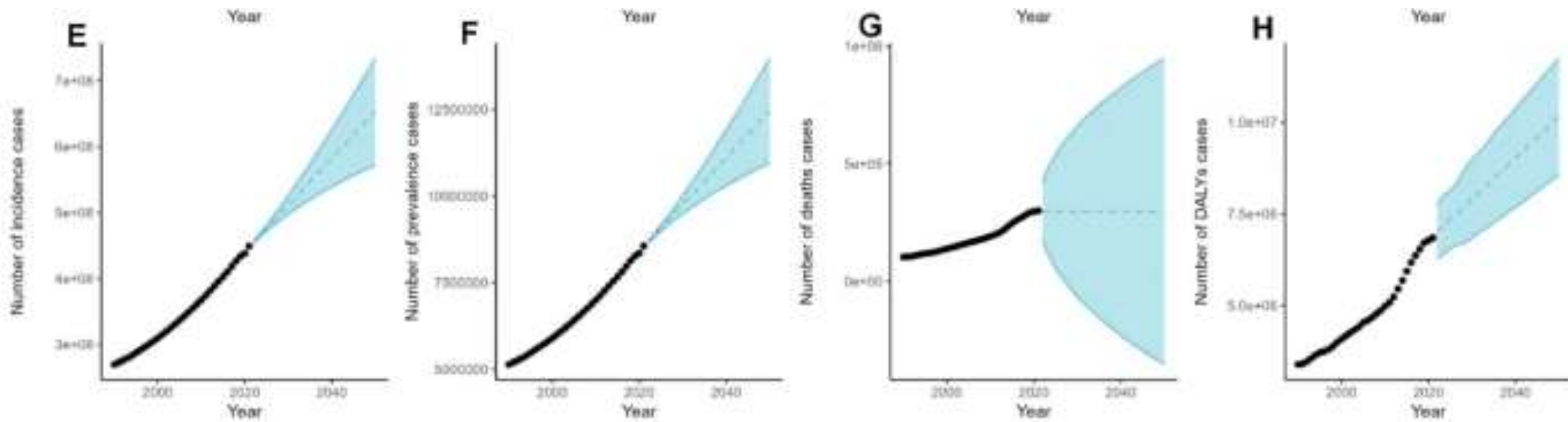


(**A**) Age-standardised prevalence rates; (**B**) Age-standardised incidence rates; (**C**) Age-standardised deaths rates; (**D**) Age-standardised DALYs rates



BOD FORECASTS 2050 OF UTI

NATURE 2025 PUBL.



(**E**) Number of incidence cases; (**F**) Number of prevalence cases; (**G**) Number of deaths cases; (**H**) Number of DALYs cases.



UTI Economic Healthcare Burden in Older Adults



Direct Healthcare Costs & Medicare

- **\$6.0+ Billion Annual Costs:**
- **\$10,527 Per Episode** inpatient **admissions** (\$15,438 per hospitalization).
- **€5,700–€7,740 per Case:** European health-system for **multidrug-resistant** (MDR) Gram-negative UTIs.

Hospitalization & Readmission Impact

- **10%–15% of Admissions:** with hospitalizations rising >50% in recent decades.
- **20.1% 60-Day Readmission:** Over 1 in 5 elderly patients hospitalized for cUTI are re-admitted within 60 days (**57% due to recurrent infection**).
- **Length of hospital Stay** **5–8 Days**





URINARY TRACT INFECTIONS (UTI)

- **Direct Economic Costs:** Current global direct medical expenditures for UTIs **exceed \$12 billion to \$15 billion** annually across primary care visits, diagnostics, antimicrobial courses, and acute hospital admissions for urosepsis (Zhu et al., 2024, *JMIR Public Health and Surveillance*; CDC, 2026, *CDC Guidelines*).
- **Indirect Economic Costs:** Lost labor productivity, presenteeism, and absenteeism worldwide contribute an estimated **\$5 billion to \$8 billion** annually, heavily concentrated among working-age women and older populations (Zhu et al., 2024, *JMIR Public Health and Surveillance*; Sanyaolu, 2026, *Drug and Therapeutics Bulletin (BMJ)*).
- **2050 Global Economic Projection:** Driven by accelerating antimicrobial resistance (AMR) and demographic aging, global healthcare expenditures and macroeconomic losses tied to resistant pathogens (with urological infections as a primary component) are projected to contribute **to \$1.0 trillion to \$3.4 trillion in annual global GDP losses and over \$159 billion in direct yearly healthcare costs by 2050** (GBD 2021 AMR Collaborators, 2024, *The Lancet*; World Bank, 2024, *World Bank Economic Brief*).



UTI Vaccines: Frontiers & Evidence

NEJM:2022



Vaccine Formulations

Mucosal & Oral Immunotherapy: Trains genitourinary mucosal immunity via sublingual spray or oral lysates to prevent bacterial adhesion.

- **MV140 (Uromune):** Sublingual spray with 4 inactivated uropathogens (*E. coli*, *K. pneumoniae*, *P. vulgaris*, *E. faecalis*).
- **OM-89 (Uro-Vaxom):** Oral *E. coli* bacterial lysate stimulating gut dendritic cells and urinary secretory IgA.
- **ExPEC Candidates:** Bioconjugate parenteral vaccines targeting O-antigen serotypes in active clinical pipelines.

Mucosal sIgA & T-Cell Activation



Clinical Trial Evidence

Pivotal RCT & Long-Term Outcomes: Multi-center trials confirm sustained reduction in recurrent UTIs (rUTIs) with minimal adverse events.

6–58% UTI-Free Rate in RCT vs 25% placebo (NEJM Evidence).

- **Median Episode Count:** Dropped from 3 episodes to 0 post-vaccination over a 9-month evaluation window.
- **9-Year EAU Follow-Up: 54% remained completely UTI-free (mean ~4.5 years infection-free).**
- **Complex Patient Groups:** Demonstrated efficacy in neurogenic bladder, catheterized, and geriatric cohorts.

NEJM Evidence & EAU Congress Data



Guidelines & AMR Impact

Pillar of Antibiotic Stewardship: Replaces long-term prophylactic antibiotics, mitigating antimicrobial resistance (AMR) and gut microbiome dysbiosis.

- **EAU Guidelines Endorsement:** Recommends OM-89 and MV140 immunoprophylaxis for recurrent UTI management.
- **70–80% Antibiotic Reduction:** Drastically lowers antibiotic consumption and outpatient urology visits.
- **Safety Profile:** Excellent tolerability demonstrated across >40,000 real-world patients globally.

EAU / AUA Guidelines & AMR Frameworks



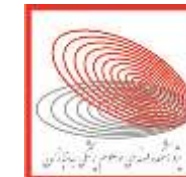


MAJOR RISK FACTORS: UTIS

Category	Risk factor	Mechanism
Age-related changes	Immunosenescence	Reduced cellular immunity and inflammatory response
Chronic diseases	Diabetes, malignancy, autoimmune disease	Impaired host defenses
Neurologic disorders	Dementia, stroke, Parkinson's disease	Bladder dysfunction, urinary retention, immobility
Hormonal factors	Postmenopausal estrogen deficiency	Altered vaginal microbiota and reduced lactobacilli
Urologic conditions	Benign prostatic hyperplasia	Urinary retention and increased post-void residual volume
Medical devices	Indwelling urinary catheters	Biofilm formation and ascending infection
Healthcare exposure	Recurrent antibiotic therapy	Disruption of microbiota and selection of resistant organisms
Functional status	Frailty and immobility	Increased infection risk and delayed symptom recognition



Epidemiological trends of urinary tract infections, and benign prostatic hyperplasia in 203 countries: 1990 to 2019



	Urinary tract infections				Urinary tract infections		
	Both	Male	Female		Both	Male	Female
1990 ^Δ				2019 ^Δ			
Incident case (× 10 ⁵)	2522.46 (2233.14 to 2792.97)	488.47 (437.22 to 536.93)	2033.99 (1795.48 to 2259.36)	Incident case (× 10 ⁵)	4046.12 (3594.25 to 4465.48)	871.90 (780.14 to 954.2)	3174.22 (2809.71 to 3512.61)
Deaths (× 10 ³)	98.59 (89.03 to 106.32)	46.79 (39.61 to 52.73)	51.80 (46.42 to 56.17)	Deaths (× 10 ³)	236.79 (198.43 to 259.03)	104.88 (82.41 to 117.43)	131.91 (111.61 to 145.72)
DALYs (× 10 ³)	3079.89 (2651.63 to 3381.62)	1471.72 (1224.73 to 1656.34)	1608.17 (1362.18 to 1807.36)	DALYs (× 10 ³)	5201.67 (4454.04 to 5704.84)	2407.94 (1949.07 to 2706.29)	2793.74 (2402.91 to 3098.75)
ASIR	4989.87 (4434.39 to 5499.05)	1984.80 (1784.33 to 2175.01)	4989.87 (4434.39 to 5499.05)	ASIR	5075.89 (4516.65 to 5594.10)	2211.69 (1988.65 to 2420.05)	7945.83 (7045.47 to 8792.4)
ASMR	2.77 (2.51 to 3.02)	3.14 (2.67 to 3.59)	2.56 (2.31 to 2.77)	ASMR	3.13 (2.61 to 3.43)	3.27 (2.54 to 3.65)	3.05 (2.58 to 3.37)
ASDR	67.73 (59.96 to 73.45)	69.74 (59.16 to 78.72)	67.42 (58.34 to 74.51)	ASDR	66.17 (56.56 to 72.5)	65.64 (52.8 to 73.33)	67.21 (57.89 to 74.67)





APPROACH OLDER ADULTS

Role of general medical doctor in:

Screening: Early disease detection

Treatment: & reduce the severity of the disease

Referral, Rehab &

Over medicalization, drug resistance

Palliative care





MASSAGE TO TAKE HOME

بحران سالمندی و ایران

ورود به آستانه سالمندی قبل از توسعه یافتگی

حقوق بازنشستگی، بازدهی صندوق ها پایین، ناتوانی بیمه، افزایش تورم، قادر نبودن
فرزندان به پرستاری/کمک و به تامین هزینه های اضافه والدین





Symbol of true love and respect



The official flower of National Grandparents' Day is the forget-me-not, which blooms in the spring, small blue flowers that grow anywhere from 4 to 12 inches.

Represents remembrance and long-associated with dementia. People with dementia may experience memory loss, among other symptoms. This makes the forget-me-not the perfect flower to represent our cause.

