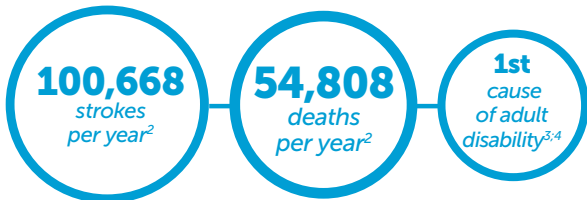


COUNTRY PROFILE: TURKEY



AF-related Stroke:

Stroke accounts for **9.7%** of all deaths in Turkey¹



AF is the **second** most important risk factor for stroke⁵

AF > smoking
diabetes
physical inactivity

AF is the **second** most important risk factor for stroke,⁵ bigger than smoking, bigger than diabetes, bigger than physical inactivity

1 in 4 strokes is due to AF⁶

AF-Related Strokes are the most debilitating strokes

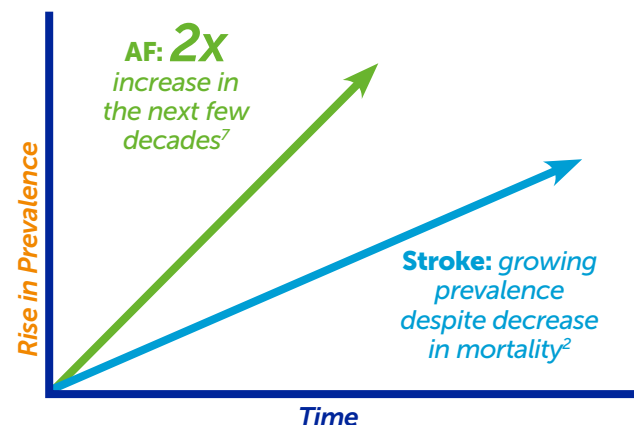


Policy Landscape:

- X** No national stroke strategy
- X** No national plan on the prevention of AF-related stroke
- ✓** No national AF registry, but AF hospital-based registry
- X** No national stroke registry

A Growing Economic Burden:

Direct cost per stroke in first year:	5,719-7,931 TL¹⁰
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Awareness Gap:

Most people have never heard of AF and do not know that AF is a major risk factor for stroke...even if the risk of developing AF is **1 in 4** after the age of 40.¹¹

Detection Gap:



Treatment Gap:

56% of AF patients are either not receiving any OAC therapy or are treated with antiplatelet therapy, despite guideline recommendations.¹⁶

44%¹⁶ Patients on OAC therapy

56%¹⁶ Patients on no therapy or on ineffective therapy (e.g. aspirin)

COUNTRY PROFILE: TURKEY



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1: DATA SUMMARY

THE NUMBERS

AF

Prevalence of AF (%):	0.8 ¹⁷ -1.25% ¹²
Number of people with AF (prevalence):	310,000 ¹²
Number of new cases of AF per year (incidence):	35,000 ¹²
Number of undetected AF cases:	No data available
Detection gap:	No data available

Stroke

Number of new cases of cerebrovascular disease per year:	100,668 ²
Number of deaths due to cerebrovascular disease per year:	54,808 ²
% of total deaths due to stroke:	9.7% ¹

AF Related Stroke

% of strokes due to AF	20% ^{6,18}
Number of new cases of AF-related stroke per year:	No data available
Prevalence of AF-related strokes:	No data available

Future Projections

AF:	No data available
Stroke:	No data available

THE COSTS

Direct healthcare cost per individual stroke	5,719-7,931 TL in the first year ¹⁰
Total indirect cost of stroke:	No data available
Annual cost per AF-related stroke	No data available

THE POLICY LANDSCAPE

National plan for AF-related stroke:	No
National stroke plan:	No

CLINICAL GUIDELINES

National guidelines on AF-related stroke	No
Most relevant to cardiologists	ESC 2012 ¹⁸
Most relevant to primary care	ESC 2012 ¹⁸

HOW MANY AF PATIENTS ARE TREATED ACCORDING TO GUIDELINES?

% AF patients currently treated with OAC therapy	44% ¹⁶
% high risk AF patients currently treated with OAC therapy	No data available
% AF patients treated only with antiplatelet therapy	39% ¹⁶

COUNTRY PROFILE: TURKEY



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2: EPIDEMIOLOGY

AF

Number of people with AF:	310,000 ¹²
Prevalence rate (%):	0.8 ¹⁷ -1.25% ¹²

A cross-sectional prospective study of close to 3,500 adults, the Cardiac Diseases and Risk Factors in Adults in Turkey (TEKHARF) study, found a prevalence of AF of 1.25% and an incidence of 1.35 per 1000 person-years.¹² The TRAF hospital database on AF found an even lower prevalence, at 0.8% in persons over the age of 18.¹⁷

In the TEKRHARF study, prevalence and incidence was higher in women,¹² which was confirmed in the recent AFTER registry which found that AF was 1.5 times more prevalent in women than men (all types of AF combined).¹⁹

Prevalence by age is: 0.46% for ages 32-59, 2.09% for ages 60-69, and 2.49% for ages 70 and over.¹² Based on these figures, it is estimated that there are 35,000 new cases of AF per year (22,000 in women) and 310,000 prevalent cases (200,000 in women - 2008 data).¹²

Undetected AF

No data available

Future Projections

No data available

STROKE

Total number of people living with cerebrovascular disease (prevalence):	154,911 ²
Total number of people suffering new cases of cerebrovascular disease every year (incidence)	100,668 ²
Deaths due to cerebrovascular disease every year:	54,808 ²

There are no national data on the incidence or prevalence in Turkey, however international studies suggest that there are close to 155,000 people living with cerebrovascular disease (including stroke) in Turkey and 100,668 new cases of cerebrovascular disease occur every year, leading to 54,808 deaths per year.²

Stroke accounts for 9.7%¹ of all deaths in Turkey.

AF-RELATED STROKE

The average stroke rate in people with AF is 5.8%.¹⁷

There are no figures, however, allowing to estimate the actual number of AF-related strokes per year in Turkey. However ESC guidelines suggest that 20% (1 in 5) of all strokes are due to AF.⁶

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3: ECONOMIC BURDEN

STROKE

Direct healthcare costs per individual stroke (in the first year):	5,719-7,931 TL ¹⁰
Indirect costs of stroke	No data available

There are very few estimates on the cost of stroke. A 2014 expert consensus found that the cost of stroke in the first year was 5,719 TL, of which 2,431 were within the first month and 3,257 within the next 11 months.¹⁰ This cost rose to 7,931 TL per year when calculated based on recommendations from current guidelines. This difference was especially present in the first month following stroke, suggesting that clinical practice deviates from guideline recommendations in this critical phase of treatment. The authors compared this discrepancy between observed practice and guidelines for the treatment of chronic heart failure (CHF) in AF patients and found no such discrepancy, which may point to a greater awareness of CHF and its severity.¹⁰

AF-RELATED STROKE

No data available

4: POLICY LANDSCAPE

National stroke plan

National plan for AF-related stroke

There are no national plans or strategies for AF-related stroke, nor do AF and AF-related stroke feature in other relevant government policies or improvement initiatives.

Advocacy and awareness

No data available

5: CLINICAL REGISTRIES

National AF registry

National stroke registry

There is no epidemiological registry on AF in Turkey, however the Turkish Atrial Fibrillation Database (TRAF) is a hospital-based database which collects information on patients with AF.¹⁷

There is no national stroke registry, although a regional registry (the Ege stroke registry) did collect stroke cases in 1998, but data collection has not continued.¹¹

COUNTRY PROFILE: TURKEY



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6: CLINICAL GUIDELINES

National guidelines on AF-related stroke	Yes, translation of ESC 2012 guidelines ⁶
Most relevant to cardiologists	ESC 2012 ¹⁸
Most relevant to primary care	ESC 2012 ¹⁸

The ESC guidelines have been translated into Turkish and are the most commonly followed guidelines by both cardiologists and primary care physicians.^{6,18}

7: ADHERENCE TO GUIDELINES

Source	Study design	Year	N with AF	Setting	Age	% on OAC	% on antiplatelet	% with no antithrombotic therapy
Kaya et al 2013 ¹⁶	Prospective multicentre registry study (AFTER registry)	2011	1745	Hospital cardiology departments (out-patient)	>18	44% (24% on VKA only, 20% on VKA+antiplatelet)	59% (of whom 20% also on VKA)	17%

OAC: Oral anticoagulation therapy

Preliminary results of the AFTER registry (Atrial Fibrillation in Turkey: epidemiologic registry), a prospective, multicentre study which assesses the epidemiology of AF in Turkey, found that only 44% of patients with non-valvular AF received OAC therapy. A large proportion of patients (59%, of whom 20% in combination with VKAs) are treated with antiplatelet therapy, which is ineffective at reducing the risk of stroke¹⁶ and is no longer recommended by current international guidelines.¹⁸ The TRAF database revealed even lower rates of OAC use, at 33%.¹⁷

Treatment with VKAs was also found to be suboptimal, with only 39% of patients on VKAs found to be within an effective therapeutic range.¹⁶

Results from the AFTER registry applying to all AF patients (valvular and non-valvular AF) found that only 7% of patients who were not receiving OAC therapy (all patients with AF) had an actual contraindication according to clinical guidelines, which points to an urgent need for physician education.¹⁹ The prescription of OAC therapy was highly associated with risk factors in the CHA₂DS₂-VASc score, with the exception of female gender and vascular disease.¹⁶

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