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Year-end home-service caseload relative to reported workforce in Central Saudi Arabia: an exploratory reconstruction of Ministry of Health administrative records for 2024

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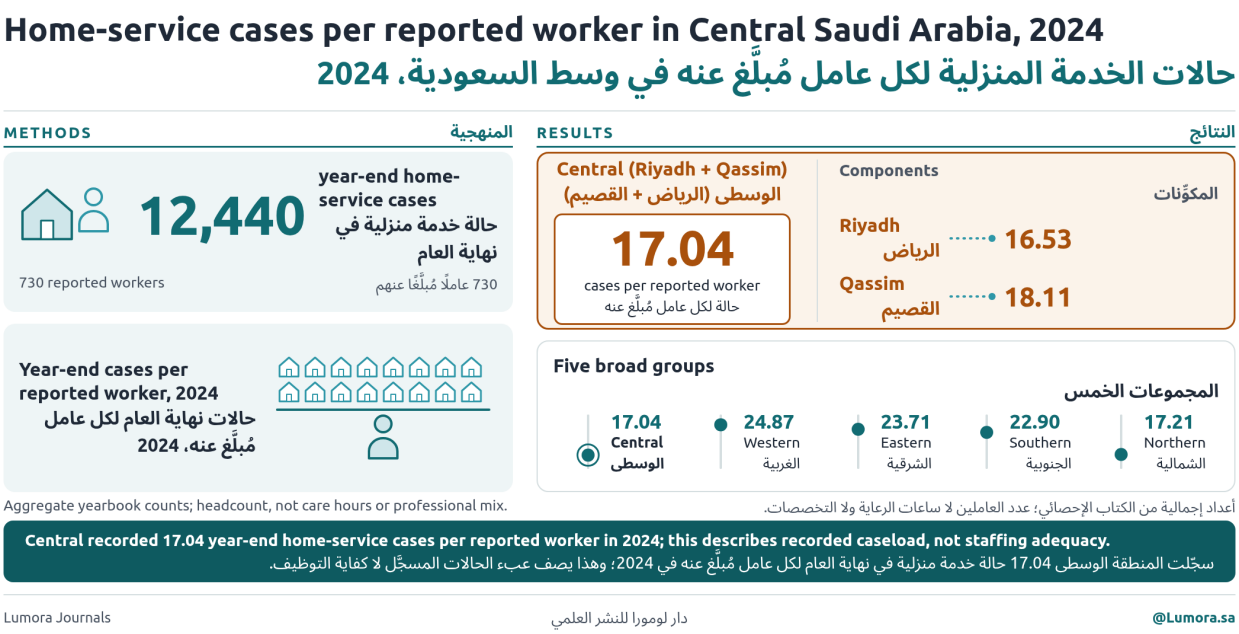
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Graphical abstract



Graphical abstract: Central recorded 17.04 year-end home-service cases per reported worker in 2024; this describes recorded caseload, not staffing adequacy. Designed by the Lumora Journals production team using hand-coded HTML/SVG rendered in Google Chrome.

Abstract

Background: Annual home-service counts can describe the relationship between recorded caseload and reported workforce, but their interpretation depends on the time reference, service boundaries and denominator. This analysis examines Central Saudi Arabia within a national comparison, without treating a caseload-to-headcount ratio as individual workload, quality or access.

Methods: An exploratory descriptive reconstruction used the Ministry of Health (MOH) Statistical Yearbook 2024, Table 4-67. Seventeen source rows were mapped to thirteen administrative regions using the workbook's official directorate-to-region correspondence sheet. Central (Riyadh and Qassim) was one of five published analytical regions. Compatible counts were summed before calculating year-end cases per reported worker, year-end cases divided by cumulative recorded beneficiaries, and the difference between each broad region's national case share and worker share. Source counts were reconciled against the official total row. No sampling confidence intervals, significance tests, clinical outcomes or staffing adequacy thresholds were introduced.

Results: Central had 60 reporting hospitals, no separately reported home health care centers, 730 reported workers, 12,440 cases under service at year end and 15,999 cumulative beneficiaries. The aggregate caseload-to-worker ratio was 17.04 and the recorded active-to-cumulative ratio was 77.75%, although the source does not define the cumulative field. Riyadh recorded 8,165 cases and 494 workers (16.53 per worker); Qassim, 4,275 and 236 (18.11). Central's share of national year-end cases was 5.15 percentage points below its share of reported workers. The national compatible counts were 58,445 cases and 2,761 workers. Relative to the 2022 census population, Central recorded 12.53 cases per 10,000 residents, the lowest of the five groups.

Conclusions: Central's recorded caseload and workforce can be reconstructed reproducibly from the source table. Differences between Riyadh and Qassim and between the five broad regions merit source-

definition review. The records do not establish staff time, clinical intensity, unmet need, quality, efficiency or patient outcomes.

Keywords: Home Care Services; Health Workforce; Workload; Health Services Administration; Saudi Arabia

Introduction

Why a bounded caseload description matters

Home services occupy a setting where a person may receive assistance from professional workers, family caregivers and several clinical teams, and a single year-end administrative count compresses that complexity. It can still answer a descriptive question when the counted object and denominator remain explicit: how many cases were recorded under service at the end of the reporting year relative to the number of workers reported in the same service table?

Saudi homecare literature addresses recipient wellbeing, morbidity, mortality, workforce preparation and caregiver burden. A household-based quality-of-life survey among recipients in Riyadh provides patient-level context that the annual table does not contain [1]. Studies of mortality predictors and of morbidity among elderly recipients in Southern Saudi Arabia examine different clinical questions and populations [2,3]. These studies show that home-service cases are not equivalent units of need; they are used here to identify dimensions that the annual table lacks, not as case-mix coefficients.

Workforce headcount and the work performed

Reported workers provide a reproducible denominator, but the source field does not give full-time equivalents, professional category, hours available for home visits, travel time or nonclinical duties. Studies of homecare knowledge among professionals in Al-Khobar and Al-Dammam, palliative-care knowledge among homecare nurses and geriatric competency concern workforce preparation rather than worker counts [4–6], and the workbook has no person-level link to them.

Direct measurement of workload requires a record of the work, as in a time-motion study of homecare nurses [7]. A scoping review of nurse optimization in Canada [8] and work on quality measurement in home healthcare [9] concern other service systems and constructs and cannot define a Saudi staffing benchmark. The present ratio is therefore labeled recorded caseload relative to reported workforce, and no safe, efficient or adequate threshold is assigned to it.

Central focus with preserved national geography

The focal area is Central Saudi Arabia, a published analytical aggregation of Riyadh and Qassim. The thirteen administrative regions remain the primary geographical units, because broad groupings can hide differences between component regions and service-row labels do not always coincide with administrative boundaries. The workbook's official correspondence sheet converts former service directorates to administrative regions, and only then are counts added into the five broad groups. Central, Western, Eastern, Southern and Northern are analytical groups, not administrative divisions or independently sampled populations [10–12].

National comparators show the scale and composition of the focal description; they are not controls in a causal design. A difference between two broad regional ratios might reflect documentation practices, staff mix, service coverage, travel requirements, eligibility or clinical composition, and these remain hypotheses for future source-linked investigation.

Existing research and the scope of contribution

There is substantial Saudi homecare research. Long-term-care patient profiles in Al-Khobar and Dammam, home-infusion services, tracheostomy homecare, physiotherapy homecare for stroke, and provider accounts of service barriers address distinct service populations and questions [13–17]. Digital-homecare focus groups add recipient and caregiver perspectives [18]. Caregiver-burden studies, including a Riyadh military-hospital study, cover work outside the reported MOH-worker denominator [19,20]. These references motivate explicit reporting of what the administrative table includes and omits.

The closest published work is a longitudinal analysis of regional MOH capacity and recorded service utilization during 2016–2024 [21]. It uses the same yearbook series and years but a different indicator domain (hospitals, beds, physicians, nurses, primary health care centers and their encounters, outpatient visits and admissions), and home health care is not among its indicators. The present study instead reconstructs the home health care table (Table 4-67), with a Central focus, a visible administrative-to-analytical mapping and a conservative interpretation. The analysis was planned after inspecting the available source tables and is exploratory.

Methods

Design, objective and reporting approach

This is a secondary descriptive analysis of published aggregate administrative records for the 2024 reporting year, with the same fields from the 2021–2023 editions used descriptively for context (Table 6). The unit observed in the source is a service-row total, subsequently aggregated to administrative and broad analytical regions. The primary objective was to reconstruct the Central year-end case-to-worker relationship and its Riyadh and Qassim components. Secondary objectives were to preserve national comparators, describe the relation between active cases and cumulative recorded beneficiaries, and compare national shares without making an efficiency inference. The study overlaps with the yearbook-based analysis of reference [21] only in source family, years and administrative regions; that analysis does not include the home health care table.

The reporting map adapts relevant items from the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement and the REporting of studies Conducted using Observational Routinely-collected health Data (RECORD) statement [22,23]. Participant recruitment, individual consent procedures, linkage and patient-level follow-up are not present in this dataset. Source inspection preceded the written plan; the study was not registered, and no hypothesis was specified before source inspection.

Source, extraction and frozen inputs

The numerical source is the official Statistical Yearbook 2024 workbook (https://www.moh.gov.sa/en/Ministry/Statistics/book/Documents/Statistical-Yearbook-2024.xlsx), sheet 4-67, "Number of MoH Hospitals Implementing Home Health Care Program, Manpower and Beneficiaries by MoH Branches, 2024" [10]. Its five count fields are "No. of Hospitals", "Home Health Care Center", "No. of Manpower", "Number of cases under service (end of 2024)" and "Cumulative number of Beneficiaries by the end of 2024". Seventeen component rows were extracted with their sheet, row number and bilingual source label; the official total row was used only for reconciliation. The extracted rows and the code are provided in Supplementary File S1.

The workbook does not define "No. of Manpower" or state whether it includes nonclinical staff such as administrative staff or drivers. The field is therefore analyzed as the headcount of all staff reported for the program, called reported workers here, and not as clinical capacity. The SHA256 (Secure Hash Algorithm, 256-bit) digest of the downloaded workbook, 959a27fbe4a7ef7b5726c679303d3251aea8b638370289b8d055705e53ea2649, allows a reader to confirm that a downloaded copy is the same file.

Geographical mapping and aggregation

Each of the seventeen source rows was mapped to one of the thirteen administrative regions using the workbook's correspondence sheet, "Former Health Affairs Directorates and their Corresponding Administrative Regions, Governorates, Health Clusters, and Branches & Offices of the Ministry of Health" [10] (Table 1). The Holy Capital, Jeddah and Ta'if rows map to Makkah and the Eastern, Al-Ahsa and Hafr Al-Baten rows to Eastern; each other row corresponds to a single region. Every administrative region was then assigned once to the published five-region aggregation: Central contains Riyadh and Qassim; Western contains Makkah and Madinah; Eastern retains Eastern; Southern contains Asir, Jazan, Najran and Al Baha; Northern contains Tabuk, Hail, Northern Borders and Al Jouf [12].

Counts were summed within these boundaries before any ratio was computed, so a broad-region ratio equals the sum of cases divided by the sum of workers, not the unweighted average of its component ratios. The administrative table is retained beside the broad-region table so that aggregation does not erase Riyadh–Qassim differences.

Table 1. Mapping of the seventeen source rows of Table 4-67 to administrative regions and broad analytical regions

Source row (Table 4-67)	Administrative region	Broad analytical region
Riyadh	Riyadh	Central
The Holy Capital	Makkah	Western
Jeddah	Makkah	Western
Ta`if	Makkah	Western
Madinah	Madinah	Western
Qassim	Qassim	Central
Eastern	Eastern	Eastern
Al-Ahsa	Eastern	Eastern
Hafr Al-Baten	Eastern	Eastern
Asir	Asir	Southern
Tabouk	Tabuk	Northern
Hail	Hail	Northern
Northern Borders	Northern Borders	Northern
Jazan	Jazan	Southern

Source row (Table 4-67)	Administrative region	Broad analytical region
Najran	Najran	Southern
Al Baha	Al Baha	Southern
Al Jouf	Al Jouf	Northern

Notes. Source rows and labels: Ministry of Health Statistical Yearbook 2024, Table 4-67; row-to-region correspondence: the workbook sheet of former Health Affairs directorates and their corresponding administrative regions [10]; broad analytical regions [12]. Labels are given as spelled in the source workbook.

Variable definitions and estimands

The primary descriptive ratio is the number of cases under service at year end divided by reported workers in the same source scope (Table 2), displayed as cases per reported worker. The numerator is a stock at a reporting time and the denominator a staff headcount; the source does not show cases assigned to individual workers, visits, hours or diagnoses. The ratio is therefore a relationship between totals, not a mean of individual caseloads, and it does not measure workload, efficiency, staffing adequacy or quality.

The active-to-cumulative recorded ratio divides cases under service at year end by the field "Cumulative number of Beneficiaries by the end of 2024". The yearbook does not define this field. A Ministry statement of 1 January 2025 described more than 71,000 beneficiaries "since the service's launch" [24], which indicates a count accumulated since the program began rather than within 2024, and the same field totaled 599,636 in the 2023 edition against 69,566 in the 2022 edition [25,26]. The ratio is therefore reported only as a recorded source quantity that reflects each region's program history; it is not a 2024 retention, discharge or survival proportion. The case-share minus worker-share quantity subtracts a broad region's percentage of national workers from its percentage of national year-end cases, in percentage points.

Table 2. Operational definitions and interpretation limits of the descriptive quantities

Quantity	Source-bound calculation or definition	Claims the quantity does not support
Cases/worker	Year-end cases ("Number of cases under service (end of 2024)") divided by reported workers ("No. of Manpower")	Individual worker caseload, productivity or staffing adequacy
Active/cumulative (%)	Year-end cases divided by "Cumulative number of Beneficiaries by the end of 2024" (field not defined in the source; may count beneficiaries since the program began)	Cohort retention, discharge or survival in 2024
Case share−worker share	Difference between compatible national case and worker percentages	Need-adjusted shortage or excess staffing

Notes. Source: Ministry of Health Statistical Yearbook 2024, Table 4-67 [10]. Source field names are given in quotation marks. Symbols: / means division of aggregate totals; % means percentage; − means subtraction.

Data checks and arithmetic

The extraction checked that every count was a finite, nonnegative integer, that no total row was included among components and that every source label mapped to a recognized area. National sums of the five fields had to equal the official total row before ratios were computed. No missing count was replaced.

Derived ratios use the source counts without stochastic modeling, and all denominators were positive. Zero home health care center counts are retained as zeros in that field. Calculations used full precision; counts are shown with thousands separators and ratios and percentages to two decimals.

Uncertainty, practical relevance and exclusions

The source table describes reported administrative totals rather than a probability sample, so sampling confidence intervals and p-values were not computed, and no magnitude is classified as clinically important or statistically significant. Reporting completeness, variable definitions, service boundaries, staff hours and clinical composition remain unquantified uncertainties.

Additional denominators and reporting years

To place the 2024 counts in context, year-end cases and reported workers were related to the resident population of each region from the 2022 census, in total and aged 60 years or over [27], and the same fields were extracted from the 2021, 2022 and 2023 editions of the yearbook table (Tables 4-57, 4-55 and 4-56) [25,26,28]. The earlier editions report twenty directorate rows; the Bishah, Qurayyat and Qunfudah rows were mapped to Asir, Al Jouf and Makkah with the same correspondence sheet. The census year differs from the reporting year, and the population aged 60 years or over is not a measure of eligibility, so the population rates are approximate and descriptive.

Literature sources

Twenty topic-relevant journal references were selected from PubMed searches run on 8 October 2026; the primary workbook and geographical sources were added.

Results

Reconciled national and Central counts

All five Table 4-67 count fields reconciled exactly against the official national total: 247 hospitals, 3 home health care centers, 2,761 reported workers, 58,445 cases under service at year end and 70,900 cumulative beneficiaries. The seventeen source rows formed thirteen administrative regions (Table 3) and five analytical groups (Table 4).

Table 3. Reported home health care counts across thirteen administrative regions, 2024

Administrative region	Hospitals	Home health care centers	Reported workers	Year-end cases	Cumulative beneficiaries
Riyadh	39	0	494	8,165	9,399
Makkah	37	1	472	11,903	14,155
Madinah	16	2	191	4,589	5,384
Qassim	21	0	236	4,275	6,600
Eastern	30	0	395	9,365	11,237
Asir	21	0	222	5,901	7,378
Tabuk	11	0	112	1,696	1,970

Administrative region	Hospitals	Home health care centers	Reported workers	Year-end cases	Cumulative beneficiaries
Hail	14	0	83	1,722	1,995
Northern Borders	9	0	60	1,046	1,130
Jazan	20	0	188	3,538	4,457
Najran	9	0	121	2,492	2,835
Al Baha	9	0	67	1,763	2,096
Al Jouf	11	0	120	1,990	2,264
National total	247	3	2,761	58,445	70,900

Notes. Source: Ministry of Health Statistical Yearbook 2024, Table 4-67 [10]; source rows are aggregated to regions as in Table 1. Reported workers are the source field "No. of Manpower" (headcount, not full-time equivalents). Of the three home health care centers, one is reported in the Jeddah row (Makkah) and two in Madinah. Cumulative beneficiaries: field not defined in the source (see Methods).

Table 4. Caseload-to-workforce relationships and national share differences across five analytical regions, 2024

Analytical region	Year-end cases	Reported workers	Cases/worker	Active/cumulative (%)	Case share−worker share (percentage points)
Central	12,440	730	17.04	77.75%	-5.15
Western	16,492	663	24.87	84.41%	4.20
Eastern	9,365	395	23.71	83.34%	1.72
Southern	13,694	598	22.90	81.68%	1.77
Northern	6,454	375	17.21	87.70%	-2.54
National	58,445	2,761	21.17	82.43%	0.00

Notes. Source: Ministry of Health Statistical Yearbook 2024, Table 4-67 [10]. Five broad groups are published analytical aggregates, not administrative divisions. Ratios compare aggregate recorded counts, not individual means. A percentage-point difference subtracts two percentages. Active/cumulative uses the two source totals; the cumulative field is not defined in the source and may count beneficiaries since the program began.

Central accounted for 60 hospitals, no separately reported home health care centers, 730 reported workers, 12,440 year-end active cases and 15,999 cumulative recorded beneficiaries. Dividing 12,440 by 730 gives 17.04 cases per reported worker, and dividing 12,440 by 15,999 gives a recorded active-to-cumulative ratio of 77.75%. The absence of separately reported centers does not mean that residents had no other homecare organizations.

Riyadh and Qassim within Central

Riyadh contributed 39 hospitals, 494 reported workers, 8,165 year-end cases and 9,399 cumulative beneficiaries, giving a case-to-worker ratio of 16.53 and an active-to-cumulative recorded ratio of 86.87%. Qassim contributed 21 hospitals, 236 reported workers, 4,275 year-end cases and 6,600 cumulative beneficiaries; its ratios were 18.11 and 64.77%. Central's aggregate ratio is calculated from the summed counts, so Riyadh carries more weight than Qassim.

Because the cumulative field may accumulate beneficiaries since the program began, the Riyadh–Qassim difference in the active-to-cumulative ratio may reflect program history, turnover or counting periods rather than 2024 activity.

Five-region comparison and shares

The broad-region caseload-to-worker ratios were 17.04 in Central, 24.87 in Western, 23.71 in Eastern, 22.90 in Southern and 17.21 in Northern, from case and worker counts of, respectively, 12,440 and 730; 16,492 and 663; 9,365 and 395; 13,694 and 598; and 6,454 and 375 (Table 4). Equivalent field labels do not establish identical case mix or staff responsibilities.

Central's share of national year-end cases was lower than its share of reported workers by 5.15 percentage points. The corresponding differences were +4.20 in Western, +1.72 in Eastern, +1.77 in Southern and −2.54 in Northern; they sum to zero apart from rounding because both sets of shares exhaust their national totals.

Administrative detail and visual representation

Across the thirteen administrative regions, the case-to-worker relationship ranged from 15.14 in Tabuk to 26.58 in Asir (Figure 1). Al Baha recorded 26.31; Makkah 25.22; Madinah 24.03; Eastern 23.71; Hail 20.75; Najran 20.60; Jazan 18.82; Qassim 18.11; Northern Borders 17.43; Al Jouf 16.58; and Riyadh 16.53.

Population denominators and earlier editions

Per 10,000 residents, Central recorded 12.53 cases under service at year end, the lowest of the five groups (Western 16.23, Eastern 18.27, Northern 24.81 and Southern 31.40; national 18.16), and 29.39 cases per 1,000 residents aged 60 years or over (national 38.72) (Table 5). Central had 7.35 reported workers per 100,000 residents (national 8.58). Within Central, Riyadh recorded 22.61 and Qassim 68.74 cases per 1,000 residents aged 60 years or over. Across the 2021–2024 editions, Central recorded 11.56, 14.08, 20.73 and 17.04 cases per reported worker and the national ratio was 14.96, 18.72, 21.68 and 21.17 (Table 6).

Table 5. Recorded cases and reported workers relative to the 2022 resident population, by broad analytical region

Analytical region	Population, 2022	Population aged ≥60 years	Cases per 10,000 residents	Cases per 1,000 residents aged ≥60 years	Reported workers per 100,000 residents
Central	9,927,927	423,332	12.53	29.39	7.35
Western	10,159,446	549,078	16.23	30.04	6.53
Eastern	5,125,254	202,390	18.27	46.27	7.71
Southern	4,360,756	230,540	31.40	59.40	13.71
Northern	2,601,841	104,161	24.81	61.96	14.41
National	32,175,224	1,509,501	18.16	38.72	8.58

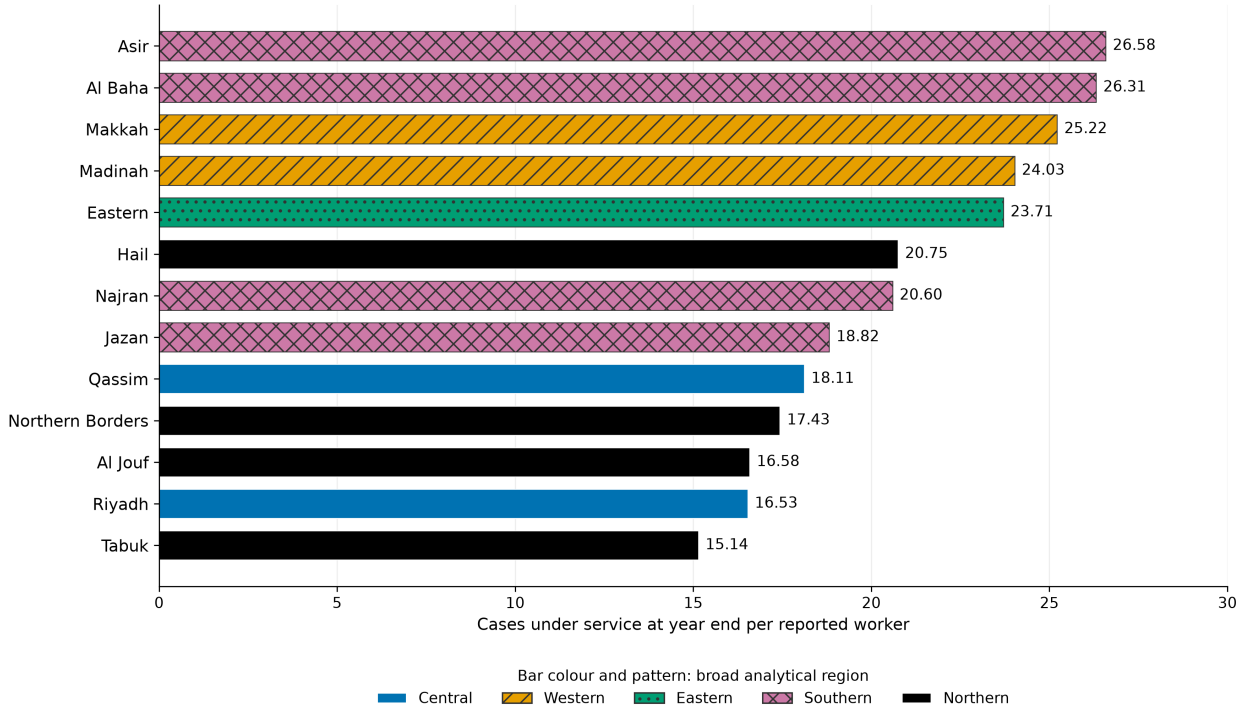
Notes. Counts: Ministry of Health Statistical Yearbook 2024, Table 4-67 [10]; population: 2022 census [27]. Rates use the 2024 counts and the 2022 population and are descriptive only.

Table 6. Year-end cases, reported workers and cumulative beneficiaries in four yearbook editions, Central and national, 2021–2024

Year	Central cases	Central workers	Central cases/worker	National cases	National workers	National cases/worker	National cumulative beneficiaries
2021	7,873	681	11.56	40,220	2,688	14.96	55,727
2022	9,591	681	14.08	50,689	2,708	18.72	69,566
2023	13,701	661	20.73	61,705	2,846	21.68	599,636
2024	12,440	730	17.04	58,445	2,761	21.17	70,900

Notes. Sources: Ministry of Health Statistical Yearbooks 2021 (Table 4-57), 2022 (Table 4-55), 2023 (Table 4-56) and 2024 (Table 4-67) [10,25,26,28]. The cumulative-beneficiary field is not defined in any edition.

Figure 1. Home-service caseload relative to reported workforce by administrative region, Saudi Arabia, 2024. Bars show cases under service at year end per reported worker; bar color and pattern denote the broad analytical region.



Notes. Source: Ministry of Health Statistical Yearbook 2024, Table 4-67 [10]. Reported workers are headcounts ("No. of Manpower"), not full-time equivalents. Colors follow the Okabe–Ito colorblind-safe palette; Western, Eastern and Southern bars also carry a fill pattern, and Central and Northern bars are solid.

Discussion

Interpretation of the Central relationship

The Central reconstruction answers the stated descriptive question: 12,440 recorded year-end cases were reported alongside 730 workers, giving 17.04 cases per reported worker. A case receiving occasional monitoring and a case requiring complex repeated care each count once, and part-time and full-time workers may each count once in headcount, so the numerator and denominator should be cited together.

The Riyadh–Qassim comparison shows that a broad-region ratio can conceal component relationships; Riyadh's larger totals give it greater weight in the Central aggregate. Publishing the two components beside

the broad total allows subsequent reviewers to test source definitions and identify where a more detailed extract would be necessary.

Clinical composition and specialist services

Saudi work on wellbeing, morbidity, mortality and long-term care concerns clinical characteristics that Table 4-67 does not stratify [1–3,13], and home infusion, tracheostomy care and stroke-related physiotherapy have different service requirements [14,15,17]. The aggregate fields do not show how much of each service occurred within a regional total, and coefficients from other studies cannot serve as adjustment weights. The analysis therefore makes no claim that Central has a lighter or heavier clinical burden than other regions; a case-mix question would first require a consistent administrative case definition and compatible clinical fields.

Workforce capability, time and travel

Knowledge and competency studies address dimensions that headcount cannot capture [4–6], including which professions deliver the recorded services and how much time is available. A lower ratio could coexist with more demanding cases, greater travel, substantial documentation time, a different staffing model or different recording rules; none of these explanations is confirmed by the aggregate analysis.

Time-motion methods offer a path from a count relationship to a workload question [7]. A future study could measure visit duration, travel, documentation, coordination and unavailable time in a defined worker sample, retaining professional category and employment fraction so that headcount is not mistaken for capacity. The international optimization review is a map of methods, not a standard for Saudi totals [8].

Informal care and patient experience

Informal caregivers are absent from the worker denominator, and caregiver-burden and digital-homecare studies concern domains that annual administrative totals do not describe [18–20]. Likewise, quality and patient experience require direct measures and suitable designs [9]; the reconstruction is a data-definition foundation, not evidence that patient experience improved or deteriorated in any region.

Service barriers and the meaning of recorded activity

Provider accounts of barriers and stroke-homecare studies suggest questions about referral, coordination and access [16,17]. The annual count cannot show who was eligible but unserved, who received care outside the recorded MOH scope, or who stopped using services because of a barrier. A small numerator therefore does not demonstrate good access, and a large numerator does not demonstrate unmet need, without a population denominator and a coverage definition.

The cumulative-beneficiary field requires particular caution. The yearbook does not define it, a Ministry statement describes a count since the service's launch [24], and the 2023 edition reported a national total more than eight times those of the 2022 and 2024 editions [25,26]. The active-to-cumulative percentage should not be compared across regions or years until the Ministry's definition of the field is obtained.

Relative to the resident population, Central recorded the lowest caseload of the five groups, and Qassim and Riyadh differed about threefold per 1,000 older residents. These rates describe recorded service volume, not need or access, because age alone does not define eligibility. The 2021–2024 series shows that a single-year ratio can change substantially between editions, so the 2024 values should not be read as stable regional characteristics.

National comparison and operational implications

The five-region display connects the Central reconstruction to the full national table and shows that case and worker shares can differ. Central's difference of −5.15 percentage points does not imply excess staff, and Western's positive difference does not imply insufficient staff. A resource-allocation model would need validated capacity units, need measures, clinical intensity, travel requirements and an explicit decision objective.

The immediate practical implication is a request for better definitions and measures: whether regional differences persist under standardized definitions, staff-time measures and comparable clinical categories, and how hospitals and separately reported home health care centers share responsibility within the service.

Measurement limitations and reproducibility strengths

Several limitations follow from the source. The primary analysis uses one reporting year; the 2021–2024 series in Table 6 is descriptive and cannot establish trends. The analysis has no linked recipient or worker records, no documented professional mix and no measured care hours, so it cannot assess turnover, severity or outcomes. The ratio is not a measure of individual workload, efficiency, staffing adequacy or quality. "No. of Manpower" may include nonclinical staff, and the cumulative-beneficiary field is undefined. A correct mapping does not establish complete source coverage, and the table's categories may change between editions, so comparisons across editions require definition review.

The strength is the visible chain from the original workbook to source rows, administrative totals, broad-region totals, ratios, tables and figure, with official-total reconciliation and a file fingerprint (Supplementary File S1). These controls improve auditability and reproducibility. They cannot validate source truth or turn headcount into full-time capacity.

Relation to prior work and next research

The closest prior work [21] analyzed the same yearbook series and years for a different set of capacity and utilization indicators and did not include home health care. The overlap with the present study is therefore limited to the source family, the years and the administrative regions.

Future work should confirm the counting rules and coverage of the five source fields, obtain staff-time and case-category measures under authorized access, define a clinically meaningful objective rather than using statistical significance to select a topic, and predefine comparisons and missing-data handling before a new analysis.

Conclusions

The Central administrative totals and their Riyadh and Qassim components can be reproduced from the official 2024 MOH workbook. Central recorded 12,440 cases under service at year end and 730 reported workers, giving 17.04 cases per reported worker, and thirteen administrative regions are retained beside five broad analytical groups. These results characterize recorded caseload relative to workforce headcount. They do not measure individual workload, staffing adequacy, unmet need, clinical quality or patient outcomes, and the source definitions of the workforce and cumulative-beneficiary fields require confirmation before regional differences are interpreted.

Declarations

Ethics: This study analyzed published aggregate administrative records from the publicly available Ministry of Health Statistical Yearbook 2024 [10]; it involved no newly recruited participants, no newly collected clinical observations and no access to identifiable individual records. This study was exempt from ethics review because the data are public (secondary analysis of public, aggregate data).

Funding: This research received no funding.

Conflicts of Interest: The authors declare no competing interests.

Study status and related submissions: The analysis plan was written after inspection of the source tables, and the study is exploratory. Related analyses of other tables of the same 2024 Ministry of Health yearbook, using the same five-region framework, have been submitted separately to this journal; they are listed in the cover letter.

Data Availability Statement: No new data were generated. All data analyzed are aggregate counts published in Table 4-67 of the Ministry of Health Statistical Yearbook 2024, which is publicly available at https://www.moh.gov.sa/en/Ministry/Statistics/book/Documents/Statistical-Yearbook-2024.xlsx [10]. The seventeen extracted source rows, the directorate-to-region mapping and the code that reproduces every count, ratio, table and the figure are provided as Supplementary File S1.

Author contributions: [Pending: CRediT author contributions and confirmation that all authors approved the final version — to be supplied by the authors]

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Abbreviations

Abbreviations. MOH means Ministry of Health; RECORD means REporting of studies Conducted using Observational Routinely-collected health Data; SHA256 means Secure Hash Algorithm with a 256-bit digest; STROBE means Strengthening the Reporting of Observational Studies in Epidemiology.

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