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STATIN MEDICATIONS WITHIN THE JORDANIAN ROYAL MEDICAL SERVICES HOSPITAL NETWORK: A QUANTITATIVE ANALYSIS OF ATORVASTATIN AND SIMVASTATIN

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ABSTRACT: The distribution pattern of two most commonly used statins (atorvastatin 20mg tablet and simvastatin 20mg tablet) in the JRMS network is going to be explored at three main hospitals namely King Hussein Hospital (KHH), Queen Alia Center for Heart Diseases (QACD), and Prince Rashed Bin Al-Hasan Military Hospital (PRBH). Specifically, this research will seek to determine and compare: the average monthly total quantities provided of each statin at each facility over the study period; and any inter-facility variations in the ratio of atorvastatin to simvastatin provided overall; year-on-year changes in the total number of statins provided at each facility, and the total number of statins provided at the network level; and the possible explanations for the distribution patterns, including the prescribing practices on each facility, the inter-facility differences in patient populations, and the differences in the clinical profile of each facility.

Across the JRMS network, total average monthly statin distribution increased from 801,990 units in 2020 to 1,087,526 units in 2023, representing an overall growth of 35.6% and a compound annual growth rate (CAGR) of 10.7%. Queen Alia Center for Heart Diseases (QACD) consistently accounted for the largest share of statin distribution and demonstrated the highest growth rate (CAGR 12.9%), reflecting its role as a specialized cardiovascular referral center. King Hussein Hospital (KHH) showed moderate growth (CAGR 10.3%), while Prince Rashed Bin Al-Hasan Military Hospital (PRBH) exhibited lower overall growth (CAGR 7.6%) with greater year-to-year fluctuations. Atorvastatin remained the dominant statin at QACD throughout the study period, whereas KHH and PRBH demonstrated a progressive convergence toward near-equal distribution of atorvastatin and simvastatin by 2023. The atorvastatin-to-simvastatin distribution ratios revealed substantial inter-facility variation, suggesting differences in patient case mix, prescribing practices, and potential supply-chain influences.

Statin distribution within the JRMS network increased substantially between 2020 and 2023, indicating growing demand for lipid-lowering therapy. QACD maintained the highest statin utilization and a sustained preference for atorvastatin, consistent with evidence-based management of high-risk cardiovascular patients. In contrast, KHH and PRBH displayed more balanced atorvastatin and simvastatin utilization patterns, reflecting heterogeneous patient populations and possible formulary or procurement influences. These findings provide valuable insights for pharmaceutical planning, demand forecasting, and formulary management within the JRMS. Future studies incorporating patient-level clinical data are recommended to assess the appropriateness of statin utilization patterns and their relationship to cardiovascular outcomes.

Keywords: *Atorvastatin; Simvastatin; Statins; Drug Distribution; Royal Medical Services; Jordan; Military Pharmacy; Pharmaceutical Supply Chain; Dyslipidemia*

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1. INTRODUCTION:

Cardiovascular diseases (CVD) are a great burden on the health system with consistently high mortality and morbidity across high, middle and low-income countries. Dyslipidemia, which includes elevated levels of low density lipoprotein (LDL-C), low high density lipoprotein (HDL-C) and elevated levels of triglycerides is one of the strongest and modifiable risk factors for atherosclerotic cardiovascular events, such as myocardial infarction and ischemic stroke (1). Statins, which are also called 3–hydroxy–3–methylglutaryl coenzyme A reductase inhibitors, have changed the paradigm in managing dyslipidemia over the last 30 years and reducing the risk of CVD. They have proven to be very effective in lowering LDL-C, stabilizing atherosclerotic plaques and reducing major adverse cardiovascular events in extensive randomized controlled trials, as evidenced by international and regional clinical practice guidelines (2).

Atorvastatin and simvastatin among the statins available and are two of the most commonly used agents around the world. Statins are highly effective synthetic drugs that block the enzymes responsible for synthesizing cholesterol. In current guidelines, individuals who need strong LDL-C lowering would be considered those with established CVD or those at high risk of developing it are prescribed the highly potent synthetic statin, atorvastatin (3). Simvastatin is a moderate-potency statin of long duration of use, and is a valuable choice in formularies due to its proven efficacy, relatively well-understood safety profile and affordability, especially in resource-limited settings (4). These two agents relative prescription rates can provide some important clues regarding the congruence between prescribing practices and clinical guidelines, patient risk stratification, and the impact of economics and formulary on prescribing.

The Jordanian Royal Medical Services (JRMS) is a full-fledged military medical services network which provides primary, secondary, and tertiary level of medical care to military personnel, their dependents and other entitled beneficiaries in Jordan. The JRMS has hospitals and special use centers, designated warehouses which act as central warehouses that supply and distribute pharmaceuticals to the designated hospitals. In this network, among the key institutions in the JRMS are the large general and tertiary referral military hospital, King Hussein Hospital (KHH) in Amman, Jordan, the specialized cardiac center, Queen Alia Center for Heart Diseases (QACD), and the regional general military hospital in a specific geographic population, Prince Rashed Bin Al-Hasan Military Hospital (PRBH). The JMRS pharmaceuticals supply chain is very large, but those drug distribution has never been quantitatively analyzed as a distributed network in the literature (5).

Drug utilization research (DUR) is a well-defined methodological approach used to assess the patterns of both supply and use of medicines in a specified population of users. DUR has been widely used in the civilian and military healthcare settings to uncover prescribing patterns, prescriptions irrationality, to make decisions on formularies, and to improve management of pharmaceutical resources (6). When viewed within military health systems, where there is a defined beneficiary population and a centralized clinical environment for pharmaceutical distribution, DUR has immense potential for helping to identify new medications and areas that require more attention.In the relatively controlled setting of the clinical environment of pharmaceutical distribution, DUR can provide real insights into new supplies and things that need more attention in a military health system, where there is a defined population of beneficiaries. (7) The present study has used a DUR to assess the distribution of the drug, atorvastatin 20mg & simvastatin 20mg tablets across three JRMS facilities during the study period of 2020-2023, averaging the monthly distribution of these drugs at the central warehouse of JRMS.

2. LITERATURE REVIEW:

Evidence of the benefits of statins is the most well-documented maybe more than any other medication in cardiovascular medicine. In a 2010 landmark meta-analysis (2), the Cholesterol Treatment Trialists (CTT) Collaboration, which included information from 26 randomized trials and more than 170,000 participants, concluded that with each mmol/L reduction in LDL-C achieved with statins, major adverse cardiovascular events (MACE) decreased by about 22%. This basic evidence has supported the virtually global adoption of statins into the prevention guidelines for CVD. This took place after the adoption of the new recommendations for high-intensity statins recommended in the 2019 guidelines published by the European Society of Cardiology (ESC) and the European Atherosclerosis Society (EAS) (3), which led to more patients being treated with statins, mainly with the prototype high-intensity statin, atorvastatin, instead of moderate-intensity statins like simvastatin.

The position of simvastatin has changed significantly in state-of-the-art formularies, due to changes in safety data and guideline recommendations. In 2011, the U.S. Food and Drug Administration (FDA) made a new change to the drug's label, which will not allow the use of the 80mg dosage of simvastatin because of its

higher risk of myopathy and rhabdomyolysis, which pushed more health systems toward atorvastatin use (4). However, moderate doses of simvastatin (20–40mg) remain largely safe to use and continue to be commonly used, especially in health systems where there is a coverage strategy emphasis on cost containment and where patients with moderate cardiovascular risk benefit sufficiently to not require high-intensity therapy (8).

Guadamuz, et al., 2022, an exhaustive review of literature, described the impact of drug use studies (DUS) on statin prescribing conducted in various healthcare settings and countries around the world. A systematic review analyzing trends of statin prescribing practices in the Middle East and North Africa (MENA) region highlights the substantial differences in the statin type preferences among different countries and institutions with atorvastatin moving gradually to becoming the most common statin prescribed in most of the studied institutions over the last decade to replace simvastatin, reflecting changes in national guidelines (9). The same trends have observed for atorvastatin use in the community and dispensing in private hospitals, with a trend to an increasing use of atorvastatin in favor of simvastatin in Jordan but the latter still maintains a considerable market share particularly in public and military hospitals because of its lower acquisition cost and being part of essential medicines lists.

The JRMS and other military healthcare systems are endowed with their distinct pharmaceutical supply management problems. Military health systems are based on a population with specific demographic characteristics, largely male, working age population with superimposed age-related morbidities, and these features can affect the epidemiology of dyslipidemia and/or the clinical characteristics of the population who need statin treatment. Recent U.S. military Pharmacoepidemiology studies conducted using U.S. Department of Defense (DoD) system centralized warehouse distribution data have demonstrated the value of using centralized warehouse distribution data as a proxy for drug utilization, due to the closed nature and integration of military supply chains (7). Alternatively, pharmaceutical supply chain management in military-related settings can be affected by procurement cycles, budgetary limitations and formulary control measures, which could mean that using the monthly average distribution, instead of the total number of products distributed out a year, is preferable, as was done here (11).

The specialized function of the QACD, a cardiac referral center, becomes of extra significance here with regard to the understanding of the distribution pattern of statins. It is anticipated that the treatment of specialized cardiac centers will lead to a disproportionate cardiovascular population of greater than average risk, for which-intensity statin therapy is recommended according to international guidelines. In contrast, the statin requirements of patients attending general military hospitals (KHH and PRBH) are likely to encompass a range of more varied cardiovascular risk profiles (5). Various structural differences allow theoretical predictions of systematical inter-facility differences in the amount and type of statin distribution, which are the subject of the present analysis.

3. METHODOLOGY:

3.1 Study Design and Data Source: In this study, quantitative - retrospective - descriptive - analytical design is used. The primary source is the distribution data for the following active ingredients available from the main medical warehouses of JRMS, which document the average amounts of January 2020- Dec 2023 released to each medical facility for each of the study drugs, namely atorvastatin 20mg tablets and simvastatin 20mg tablets. Average monthly distribution quantities were used as the principal analytical value to reduce the skewing effect of periods of any episodic stock shortages that can create short-term periods of reduced quantities in distribution, but not necessarily lower consumption or demand, which are known to impact the accuracy of the principal measure of distribution (11). No other data were collected or assumed than is specifically reported in the warehouse records of the JRMS.

3.2 Study Facilities: This analysis included three JRMS facilities. King Hussein Hospital (KHH) is the main JRMS hospital and tertiary center in Amman with complete range of medical and surgical specialties. The Queen Alia Center for Heart Diseases (QACD Amman) is one of the special cardiac referral centers in the city of Amman for patients with established and suspected cardiovascular disease anywhere in the JRMS network. Prince Rashed Bin Al-Hasan Military Hospital (PRBH) is a region-based general military hospital, which supports the specific geographical area of Irbid in the northern part of Jordan.

3.3 Analytical Variables and Calculations: These are the analytical metrics that were drawn from the main data set:

(i) Total Annual Distribution per Facility: Calculated as the sum of average monthly quantities of atorvastatin 20mg and simvastatin 20mg for each facility and each year, representing the combined statin burden at each facility Table 1.

(ii) Network-Level Total Annual Distribution: The sum of Total Annual Distribution at all three facilities as an indicator of the overall supply of JRMS statins.

(iii) Atorvastatin-to-Simvastatin (A:S) Distribution Ratio: A computed value that was given for each facility for each year, representing relative prescribing preference between atorvastatin and simvastatin as the ratio of atorvastatin distribution quantity to simvastatin distribution quantity.

(iv) Year on Year (YoY) Percentage Change: For each facility and for total network distribution, between consecutive years to obtain growth pattern in time.

(v) Compound Annual Growth Rate (CAGR): For the whole period of 2020 - 2023, for each drug for each facility, the formula CAGR = [(Final Value / Initial Value)^(1/n) – 1] × 100% has been used to quantify sustained growth trends over the period (n = 3).

(vi) Market Share Analysis: This was estimated by computing the proportional share of each facility in total network distribution, and determining if there was a change in distribution weight for each network over time.

No further data manipulation was carried out; all calculations were done using the provided data set. The analytical methods employed were descriptive statistical analysis because it was suitable for the available information.

Table 1. Average Monthly Distribution Quantities (units) of Atorvastatin 20mg and Simvastatin 20mg Tablets Across JRMS Facilities (2020–2023)

Year	Medication	King Hussein Hospital	Queen Alia Center	Prince Rashed Hospital
2020	Atorvastatin 20mg	196,800	247,074	133,786
2020	Simvastatin 20mg	51,555	85,229	87,546
2021	Atorvastatin 20mg	166,071	233,800	93,137
2021	Simvastatin 20mg	141,734	180,930	128,689
2022	Atorvastatin 20mg	165,714	265,582	113,438
2022	Simvastatin 20mg	104,852	177,978	84,148
2023	Atorvastatin 20mg	164,693	290,028	135,782
2023	Simvastatin 20mg	168,787	188,674	139,562

KHH = King Hussein Hospital; QACD = Queen Alia Center for Heart Diseases; PRBH = Prince Rashed Bin Al-Hasan Military Hospital. A = Atorvastatin; S = Simvastatin. Source: JRMS Main Medical Warehouses.

4. RESULTS AND DISCUSSION:

4.1 Overview of Network-Level Statin Distribution: Table 2 shows the total and complete primary data of average monthly distribution quantities for atorvastatin 20mg and simvastatin 20mg for the study period (2020 – 2023) in all three JRMS facilities. A summary of the total annual distribution by facility and the network is presented in Table 2. During the four-year study period, the JRMS network also saw a compound network increase, from an average of 801,990 monthly units in 2020 to an average of 1,087,526 monthly units in 2023, with the network experiencing a 35.6% increase over the four-year study period and a CAGR of around 10.7%. This pathway is likely to be a continued and significant increase in statin supply demand in the JRMS system with similar trends noted in the global epidemiology of an increasing prevalence of dyslipidemia, cardiovascular risk factors, and widened indications for statin use under current guidelines (3) and further growth of the JRMS population.

Table 2. Total Annual Statin Distribution (Average Monthly Units) per Facility and JRMS Network (2020–2023)

Year	King Hussein Hospital	Queen Alia Center	Prince Rashed Hospital	Network Total
2020	248,355	332,303	221,332	801,990
2021	307,805	414,730	221,826	944,361
2022	270,566	443,560	197,586	911,712
2023	333,480	478,702	275,344	1,087,526

Values represent sum of average monthly atorvastatin 20mg and simvastatin 20mg distribution quantities. KHH = King Hussein Hospital; QACD = Queen Alia Center for Heart Diseases; PRBH = Prince Rashed Bin Al-Hasan Military Hospital.

4.2 Inter-Facility Distribution Disparities: There were consistent and marked differences between facilities in the number of statins provided all along the study period. QACD was the dominant recipient of statin, accounting for the biggest portion of the total network dispensing – 41.4% in 2020, 43.9% in 2021, 48.7% in 2022, and 44.0% in 2023. Further, this discovery follows the highly specialized cardiovascular role of QACD (3). Being a cardiac referral hospital, it should preferably have a concentrated group of established or higher risk patients with cardiovascular disease, where a substantial proportion are dependent on intensive lipid-lowering pharmacotherapy for either secondary prevention or post-procedural use. Statin pharmacovigilance lands in QACD at a consistently high level and continues to increase with time, as a result of the subsequent high load of clinical activity.

KHH, being the biggest general and tertiary hospital of the JRMS network, was the second **recipient** hospital in the distribution of statins with 248,355 distribution units in 2020 to 333,480 distribution units during 2023, which represents a CAGR rate of 10.3%. Due to the large volumes of statins seen at KHH, this is related to the wide spectrum of cardiovascular risk factors in its broad catchment area as well as the provision of specialist or outpatient medical clinics for statin therapy.

The statins distribution volume was the lowest in PRBH, as expected due to a smaller and more geographically isolated population, in all years studied. Its total annual distribution ranged from 221,332 units in 2020 to 275,344 units in 2023 (CAGR 7.6%). Indeed, the weakest growth pace was for PRBH, with a remarkable growth of 39.4% in 2023. This large rebound from a fairly flat (partly because of -10.9% year-over-year changes in 2021-2022) should be noted, as it could be related to resolution of supply chain constraints, changes in the formulary, changes in enrollee numbers, and/or changes in the way facilities prescribe medications Table 3.

Table 3. Year-on-Year Percentage Change and CAGR of Total Statin Distribution by Facility and JRMS Network (2020–2023)

Metric	2020→2021	2021→2022	2022→2023	Overall 2020→2023	CAGR
Network Total	+17.8%	-3.5%	+19.3%	+35.6%	+10.7%
KHH Total	+23.9%	-12.1%	+23.2%	+34.3%	+10.3%
QACD Total	+24.8%	+7.0%	+7.9%	+44.1%	+12.9%
PRBH Total	+0.2%	-10.9%	+39.4%	+24.4%	+7.6%

CAGR = Compound Annual Growth Rate calculated over 2020–2023 (n=3 years). KHH = King Hussein Hospital; QACD = Queen Alia Center; PRBH = Prince Rashed Bin Al-Hasan Hospital.

4.3 Prescribing Preferences: Atorvastatin-to-Simvastatin Ratio Analysis: The ratio of atorvastatin to simvastatin (A:S) is a quantitative measure that can provide an understanding of preference for

institutional prescribing between atorvastatin and simvastatin. For the Study period, these ratios were measured at each facility during that time period only, and are presented in Table 4.

Table 4. Atorvastatin-to-Simvastatin (A:S) Distribution Ratio by Facility and Year (2020–2023)

Hospital	2020 A:S Ratio	2021 A:S Ratio	2022 A:S Ratio	2023 A:S Ratio	Trend	Dominant Drug
KHH	3.82:1	1.17:1	1.58:1	0.98:1	Declining	Atorvastatin → Simvastatin
QACD	2.90:1	1.29:1	1.49:1	1.54:1	Stabilizing	Atorvastatin
PRBH	1.53:1	0.72:1	1.35:1	0.97:1	Fluctuating	Near-Parity

A:S Ratio = Atorvastatin 20mg average monthly quantity ÷ Simvastatin 20mg average monthly quantity. Values >1 indicate atorvastatin dominance; values <1 indicate simvastatin dominance; values ≈1 indicate near-parity.

As part of the study period, King Hussein Hospital (KHH) recorded the most significant drop in A:S ratio from 3.82:1 in 2020 to very close to par in 2023 (0.98:1). This trend shows that while very much dominant in 2020, atorvastatin increased at a higher rate, ultimately achieving the same uptake by 2023 as simvastatin. The A:S ratio in 2021 was low – 1.17:1, indicating a huge and concurrent rise of simvastatin distributed in 2021 (141,734 units in 2021 compared to 51,555 in 2020, a 174.9% increase) compared with atorvastatin distributed (166,071 vs 196,800) in the same year. This could be a response to formulary or procurement changes, to the availability of simvastatin for a new group of new eligible patients, or the ordering of simvastatin because of shortages of atorvastatin (11). Nearly equal use of both statins was recorded by 2023 suggesting diversity across the KHH's many clinical specialties and hence, the prescribing environment for these statins was somewhat heterogenous.

Consistently throughout the study period, atorvastatin use at Queen Alia Center for Heart Diseases (QACD) remain relatively constant; and the A:S ratio ranged from 1.54:1 in 2023 to 2.90:1 in 2020, with a slight drop in the ratio in 2021 to 1.29:1. Although this plateau, atorvastatin was definitely the most adopted statin drug at QACD in all years. This is concordant with the parameters usually seen at a specialized cardiac center that would include a high percentage of patients with known coronary artery disease, post ACS and Post interventional or surgical cardiovascular events, categories in which high levels of atorvastatin are recommended as the drugs of first choice as per international guidelines (3). Alternatively, this stabilization of the A:S ratio in 2022-2023 (from 2.90:1 in 2020) may be due to growth in the simvastatin-treated population, which could mostly be patients defined as lower-risk preventive cardiology, in addition to continued growth in the atorvastatin-treated population.

The trend of the A:S ratio in Prince Rashed Bin Al-Hasan Military Hospital was cyclical in shifts from one statin to the other, with a dominance switch from atorvastatin to simvastatin (A:S ratio=1.53:1 in 2020 to 0.72:1 in 2021), followed by a return of more atorvastatin than simvastatin (A:S ratio=1.35:1 in 2022), and close to parity (A:S ratio=0.97:1 in 2023). Of particular interest, the 2021 reversal, in which the number of simvastatin distributed (128,689 dose units) was significantly greater than the number of atorvastatin distributed (93,137 dose units), stood out. This could be due to a regional formulary rule change, a shortage of atorvastatin in the stock during 2021 resulting in the replacement with simvastatin and/or a true change in patient population characteristics. The following year (2022), the distribution of atorvastatin was recovered, which further backs the argument of stock shortage, but can't be confirmed without further procurement data. The balance seen in the 2023 trend (0.97:1) is similar to that found in the KHH and could represent a shifting towards more balanced statin use portfolios in regional military hospitals in the JRMS network.

4.4 Temporal Trends and Growth Analysis: The increase in annual statin distribution in the network between 2020 and 2023 at 10.7% CAGR is higher than the expected rate of growth based on Jordan's population growth, indicating reasons other than just population growth. There are multiple contributor factors that need to be considered. More aggressive statin use thresholds due to updated international guidelines and adaptations to national guidelines are likely to have included more people in statin use, as updated in the ESC/EAS guidelines for 2019 already, and in the region-specific guidelines (3). Second, more

attention to cardiovascular risk factor recognition and management programs in the JRMS may have boosted statin initiation rates. Third, shifts in the JRMS population of beneficiaries (such as aging of the entitled population and possible growth in beneficiary numbers) may have-driven up statin demand (5).

There was a significant reduction of total distribution (-3.5%) at Network level from 2021 to 2022. This reduction was largely due to a drop in KHH (-12.1%) and PRBH (-10.9%) with continued gains in QACD (+7.0%). This divergent trend, with the specialized cardiac population having growth while the general hospitals invested in these types of services experienced decreases, would suggest that the decrease in 2022 may have been caused, in part, by the fact that general hospitals felt impacted by supply chain/procurement issues, whereas statin therapy is necessary for the specialized cardiac population and thus needed to be sourced. This was then followed by a robust recovery at all facilities in 2022–2023, in line with an increase in underlying demand along with the restoration of supply volumes.

QACD's volume growth was the highest (CAGR: 12.9 %) among the three facilities, not only because of an even stronger increase of atorvastatin volumes but also due to the very high increase of simvastatin volumes. This result highlights the growing burden of cardiovascular drug management in the JRMS and could impact future planning of drug procurement, center specific allowed drug management, and resource allocation in the specialized center. (6)

4.5 Implications for Pharmaceutical Management and Policy: This study has some implications in the practical aspects of pharmaceutical resource management as would apply to the JRMS. Firstly, the network's continued and increasing volume of statin distributions requires more sophisticated methods of demand forecasting that take into account demographic forecasts in addition to the trends of clinical guidelines to help plan for procuring an adequate volume of statins to prevent the occurrence of further potential stock-out episodes (11). Second, there was increased statin distribution in the QACD versus the general hospitals, with a higher and rising proportion in QACD which suggests there may be differential procurement strategies for use in JRMS versus QRMS.

Third, the convergence of atorvastatin and simvastatin distribution in 2023 is of interest for clinical review because of the increasing worldwide adoption of high-intensity statins like atorvastatin as best-practice. Although the economic rationale for continuing to use simvastatin in moderate-risk individuals is sound and the use of appropriate statin in their care is often the best choice, health systems and/or clinical pharmacists in the JRMS should consider whether there are opportunities to improve therapy in individuals who may benefit from high-intensity statin therapy (8).

5. CONCLUSIONS:

This study provides the first systematic quantitative analysis of statin distribution patterns within the JRMS hospital network over the period 2020–2023. Several key conclusions emerge from this analysis. The distribution of total statin remained statistically stable but with robust growth throughout the study period with network CAGR of 10.7% and an overall 35.6% increase between 2020 and 2023. This growth pattern is in line with an increasing incidence of cardiovascular diseases, a larger number of statins that may be indicated, and a potential widening of the beneficiary population for the JRMS. Due to its single cardiac focus and high risk population, QACD's share of network statin distribution was always the highest and experienced the highest CAGR (12.9%).

Ratios of atorvastatin to simvastatin was found to be clinically significant between facilities for distribution. In the cardiovascular population QACD remained stable with atorvastatin as the dominant lipid-lowering agent, in line with guideline recommended high intensity statin therapy. The trend observed in KHH and PRBH was converging, both striving to utilize statins equally over the projection period, which may indicate that there are different risk groups of patients and may be due to supply chain or formulary influences. The switch in distribution patterns that is observed at PRBH, from using simvastatin to atorvastatin in 2021, opens a new opportunity to see the impact of procurement disruptions on distribution patterns and the need for supply chain resilience of essential cardiovascular drugs.

The results could have bearing on JRMS pharmaceutical planning. Prospective demand planning differentiated procurement strategies and periodic clinical auditing on statin prescribing at facilities are recommended to ensure statin supply meets evidence-based guidelines and the clinical needs of the population it serves. The study should be replicated with patient specific clinical information to validate the congruence between the observed distribution patterns of statins and real-world cardiovascular disease risk and to assess the clinical outcomes related to the realistic patterns of statin prescribing observed within this unique healthcare environment in the military.

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