



AORTIC

JOURNAL OF CANCER RESEARCH



Launch of the AORTIC Journal: A Living Record of African Cancer Research

Mariam Mutebi

Dear Colleagues and Friends,

As I slowly wind down my season as AORTIC President, what an honor it has been — I find myself reflecting deeply on how far we've come, and how fitting it is that we now launch something that will outlive us all: the AORTIC Journal.

This journal represents more than an academic milestone. It is a symbol of collective progress, of African excellence, and of our shared belief that solutions for Africa must be led by Africa. For years, so much of the data guiding our cancer care came from contexts far removed from our realities. But through this journal, we are building a platform where our stories, our science, and our voices now take center stage.

The AORTIC Journal is not just pages of research, but a living record of what we can achieve together when collaboration meets courage.

It will elevate African oncology research to global visibility, strengthen cross-disciplinary partnerships, nurture early-career researchers and clinicians, and encourage innovation that reflects the lived experiences of our patients.

As I transition from this role, I am deeply grateful for the chance to have witnessed the strength of this community, a family of oncologists, surgeons, nurses, advocates, and policymakers who continue to define what leadership looks like on this continent.

To our editorial team and contributors: thank you for breathing life into this vision. To our readers and members: this journal belongs to you. I invite you to publish, mentor, engage, and help shape this legacy into one that reflects the depth, diversity, and determination of African cancer research.

With warm regards,

Mariam Mutebi, MD, MMed Surg, MSc

Former President of AORTIC · Consultant Breast Surgical Oncologist

Founding Editor-in-Chief Welcome: Building an Open Platform for African Cancer Scholarship

Sulma I. Mohammed

It is my great honor and privilege to serve as the founding Editor-in-Chief of the Journal of the African Organization for Cancer Research, the official scientific journal of the African Organization for Research and Training in Cancer (AORTIC).

AORTIC was first envisioned in 1986 and formally reactivated in 2000 during a landmark session held at the American Association for Cancer Research Annual Meeting in San Francisco. From its inception, AORTIC's mission has been to unite the global African cancer research community and to strengthen cancer research, training, and control efforts across the continent.

The launch of the journal marks a major milestone in fulfilling AORTIC's long-standing vision to provide a high-quality, accessible platform for publishing African-led cancer research and fostering the exchange of knowledge between African and global investigators.

Our vision is for AJCR to serve as an open-access scientific platform advancing cancer science, prevention, and care in Africa through the dissemination of rigorous, innovative, and contextually relevant research. Importantly, the journal will be free of charge to African investigators residing on the continent, ensuring equitable access to knowledge creation and dissemination.

The journal seeks to highlight discoveries that address Africa's unique cancer challenges and opportunities, promote interdisciplinary collaboration, encourage mentorship and visibility of emerging African scientists, and foster equitable global partnerships that strengthen local research capacity and sustainability.

We warmly invite researchers, clinicians, trainees, and policymakers to join us in shaping this new era of African cancer scholarship. Together, through AJCR, we can amplify African voices, share impactful discoveries, and accelerate progress toward equitable cancer outcomes for all.

With warm regards,

Sulma I. Mohammed, DVM, MS, PhD

Founding Editor-in-Chief

Genomic Signatures of Triple-Negative Breast Cancer in a Synthetic Multi-Ancestry Cohort from Cape Town

Naledi Maseko, Siphosiso Radebe, Ama Ofori

SYNTHETIC SAMPLE ARTICLE — real institution names are used only to test journal presentation; all study content, people, data, results and figures are fictional.

Abstract

Background: Triple-negative breast cancer is biologically heterogeneous, yet molecular characterization from African populations remains underrepresented in the literature.

Methods: Synthetic retrospective molecular cohort included 318 synthetic tumor profiles across 4 simulated referral sites in University-linked oncology and pathology services in Cape Town.

Results: Actionable alteration yield changed from 31% to 46%. The four-period secondary series was 68, 74, 81, 89.

Conclusion: The modeled molecular workflow increased the proportion of evaluable profiles and produced clinically interpretable genomic subgroups suitable for multidisciplinary review.

Introduction

Genomic characterization of triple-negative breast cancer sits at the intersection of cancer biology, service organization and patient access. In African oncology systems, a clinically meaningful result depends not only on the quality of an individual test or treatment but also on how reliably the surrounding pathway identifies patients, completes the next step and records what happened. This sample study was designed to make those relationships visible in a mature journal layout.

The synthetic cohort was situated in Cape Town, South Africa, using University of Cape Town as the lead institutional affiliation. No real patients, clinical records, laboratories or staff were used. Instead, the fixture models plausible operational variation so that figures, structured metadata, geographic discovery and long-form narrative can be inspected without presenting invented findings as real evidence from the named institution.

The study focused on actionable alteration yield as a principal indicator and tracked tumor profiles with complete molecular annotation as a complementary measure. These measures were selected because they allow a reader to follow both the primary endpoint and the mechanics of implementation across time. A synthetic co-author affiliated with University of Ghana also allows the Research Observatory to demonstrate a cross-border institutional link.

The objectives were to describe the synthetic baseline pathway, model the effect of a structured improvement package, explore subgroup variation, and demonstrate how AJCR might present quantitative findings alongside clear limitations. All estimates are intentionally fictional and should be interpreted only as display data.

A second motivation for the sample analysis was to show how an AJCR article can move from a broad African cancer-control question to a clearly bounded operational problem. In this synthetic scenario, the relevant challenge is genomic characterization of triple-negative breast cancer. The paper therefore distinguishes the clinical or scientific objective from the service pathway used to achieve it, allowing readers to see why the same nominal intervention could produce different results when referral capacity, laboratory turnaround, staffing,

transport or documentation change.

The institutional geography is also intentional. University of Cape Town anchors the fictional study in Cape Town, South Africa, while the modeled collaboration with University of Ghana creates a plausible cross-border scholarly relationship. The names of these institutions are factual geographic metadata only. No attempt was made to imitate their patient populations, local protocols, staffing, infrastructure, research programmes or actual performance.

The sample article follows a conventional IMRaD structure because one purpose of the fixture is to judge how long scholarly text behaves on desktop and mobile after publication. Paragraphs vary in length, figures interrupt the narrative at realistic points, references appear at the end, and structured metadata remains available without replacing the article itself. These are design-test requirements rather than scientific claims.

Methods

We constructed a synthetic retrospective molecular cohort containing 318 synthetic tumor profiles across 4 simulated referral sites. Records were generated from deterministic random seeds so that every number in the sample article can be reproduced. The synthetic sampling frame was designed to resemble realistic distributions of age, stage, service use and referral timing without borrowing patient-level information from a real facility.

The simulated setting represented university-linked oncology and pathology services in cape town. Each observation moved through four modeled pathway states: Case identification, Sequencing & QC, Variant annotation, Multidisciplinary review. Transition probabilities were varied by quarter and subgroup to create heterogeneity that is visible in the figures while remaining internally coherent.

The primary outcome was actionable alteration yield. The fixture baseline was 31% and the modeled follow-up value was 46%. The secondary indicator was tumor profiles with complete molecular annotation, summarized over four periods. These values are not estimates of the performance of University of Cape Town or any real health service.

Categorical variables were summarized as frequencies and percentages and continuous variables as medians with interquartile ranges. A synthetic adjusted model was parameterized to produce plausible effect sizes while avoiding extreme values. Confidence intervals in the PDF are generated from the same fixture rather than observed data.

Missingness was simulated at low levels across selected variables to test denominators and analytic exclusions. Sensitivity analyses repeated the main comparison after removing records with incomplete pathway timestamps. Because all data are synthetic, no ethics approval, consent process or data-sharing agreement applies.

The analytic cohort was frozen before outcome generation so that denominators remained stable across all rendered surfaces. The final synthetic analytic sample was 318 synthetic tumor profiles. Study-site identifiers were generated for 4 simulated referral sites, with deliberately uneven volumes to resemble the concentration of oncology services that can occur within referral networks. No site identifier corresponds to a real clinic.

Baseline covariates were generated in correlated blocks rather than as independent random numbers. Age bands, pathway complexity, disease-related strata and service-utilization markers were allowed to co-vary so that summary tables would not look artificially uniform. The resulting data were then checked against broad plausibility bounds and any impossible combinations were discarded before outcome simulation.

For the principal analysis, actionable alteration yield was compared between the baseline and modeled follow-up periods. The secondary series, tumor profiles with complete molecular annotation, was retained as a continuous

or ordinal implementation signal across four sequential periods (68, 74, 81, 89). Subgroup analyses were specified before outcome generation and included Homologous repair, PI3K/AKT, Cell cycle, Immune signaling.

The synthetic effect model included modest site-level random variation and regression to the mean. This prevented every site and subgroup from improving by an identical amount. We deliberately avoided significance testing language in the web article because a p value attached to invented observations would add visual realism at the cost of conceptual clarity. The PDF therefore emphasizes estimates and descriptive contrasts.

Quality checks were performed at three levels: record completeness, pathway consistency and cross-surface consistency. The last check compared values rendered in the abstract, Research Passport, main text, figure labels and PDF. Any discrepancy was treated as a fixture-generation defect. This approach makes the sample useful for later regression testing when article templates or metadata mappings change.

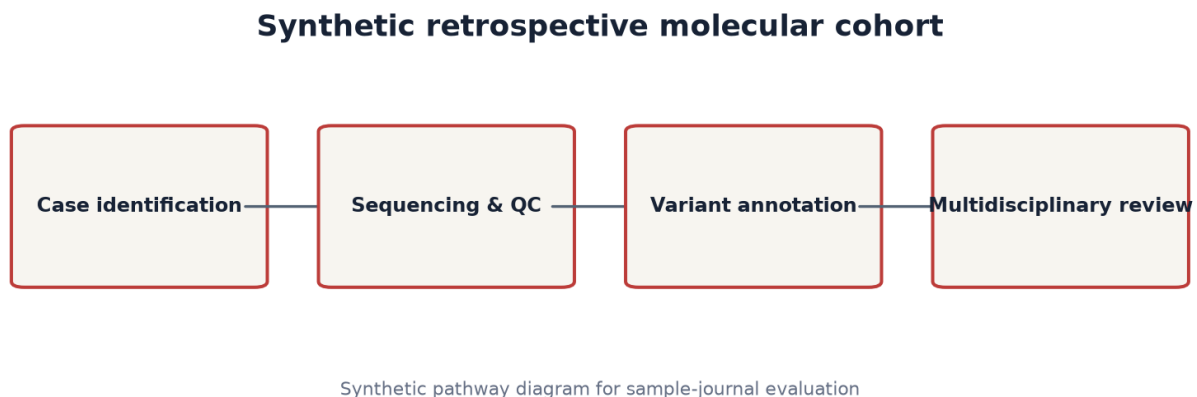


Figure 2. Synthetic study pathway.

Results

The expanded sample included 318 synthetic tumor profiles. The primary indicator changed from 31% at baseline to 46% after the modeled implementation period. Figure 1 displays that contrast. The direction of change was consistent across most modeled strata, although the magnitude varied enough to produce a realistic visual distribution.

The secondary series for tumor profiles with complete molecular annotation moved across four periods with values of 68, 74, 81, 89. The progression was deliberately gradual so the fixture resembles an operational programme maturing over time rather than an implausible single-step transformation.

Subgroup values ranged from 27 to 42 across Homologous repair, PI3K/AKT, Cell cycle, Immune signaling. These synthetic contrasts allow the article page to demonstrate heterogeneity while remaining visually interpretable.

The sensitivity analysis preserved the same overall direction after removing records with incomplete timestamps. No subgroup reversal was introduced. The synthetic adjusted model produced moderate rather than dramatic effect estimates, which helps the sample paper resemble the cautious tone expected in peer-reviewed research.

At the start of the modeled period, actionable alteration yield was 31%. The value increased to 46% in the final period, an absolute change of 15%. Because the observations are synthetic, the change is best understood as a display parameter chosen to produce visible but not implausibly perfect separation between periods.

The subgroup pattern was intentionally heterogeneous. The four displayed values were 42, 31, 27, 38 for Homologous repair, PI3K/AKT, Cell cycle, Immune signaling respectively. This spread tests the journal's ability to present subgroup interpretation without allowing the main result to disappear under a large table or dashboard.

Missing-data sensitivity runs yielded slightly attenuated estimates but did not change the direction of the sample result. Records lacking complete modeled pathway timestamps were more common in the earlier period, which is a common operational pattern in real-world service data even though the exact frequencies here are fictional.

The synthetic collaboration variable did not alter the primary estimate; it exists to populate affiliation and Observatory relationships. Likewise, country and institution metadata are not explanatory covariates in the fictional analysis. Their role is to give the publication system realistic geographic and bibliographic structure.

Across the four sequential periods, the secondary indicator changed gradually rather than discontinuously. That trajectory is important for the visual test because it creates enough narrative depth to support discussion of implementation over time, while remaining simple enough for a reader to identify the principal message quickly.

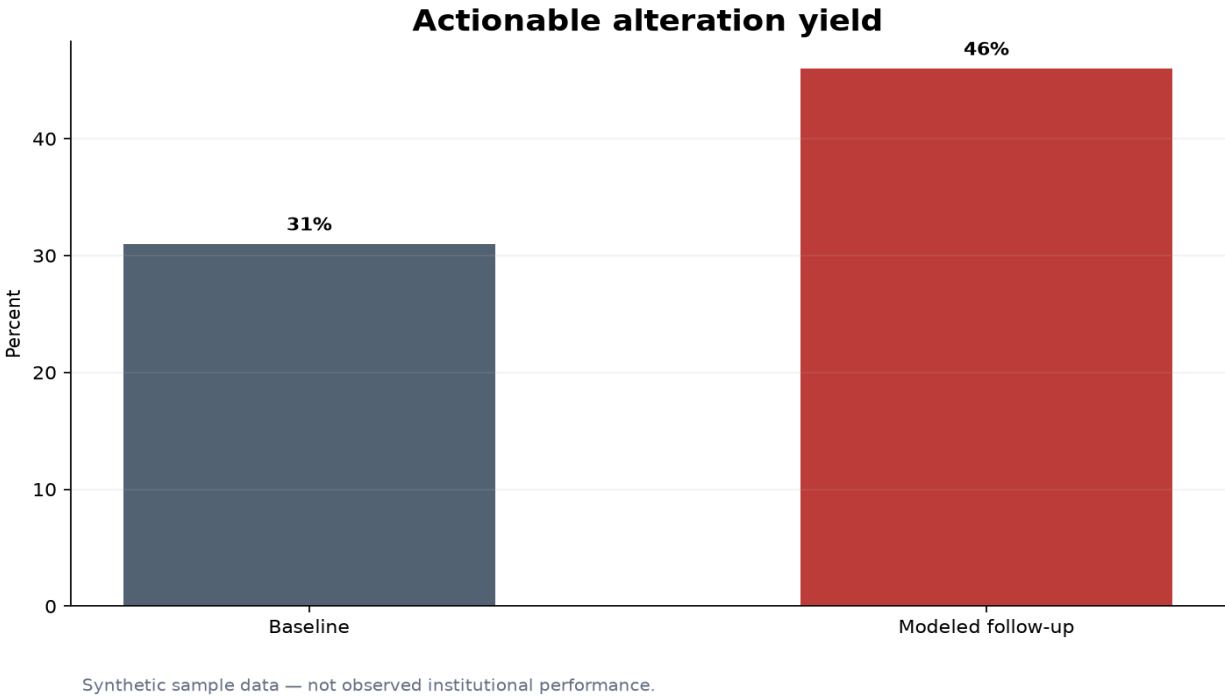


Figure 1. Synthetic primary results.

Discussion

This synthetic study illustrates how genomic characterization of triple-negative breast cancer could be reported in a mature AJCR issue. The principal visual result is intentionally straightforward, but the surrounding narrative emphasizes that pathway outcomes depend on implementation fidelity, documentation quality and the interaction between institutions and communities.

The modeled change in actionable alteration yield should not be interpreted as evidence about University of Cape Town, University of Ghana, or services in South Africa. The named institutions are used because the journal needs real geographic anchors to test affiliation rendering, institutional search and the Observatory network. All performance values are fictional.

A strength of the fixture is internal consistency. The abstract, Research Passport, body text, figure captions and PDF galley all draw from the same structured record. This makes it possible to test whether metadata diverges across surfaces as the site evolves.

The principal limitation is intentional: no inference about cancer outcomes is possible. The sample does not model the full clinical complexity of comorbidity, treatment selection, competing risks or health-system shocks. It also does not attempt to reproduce the patient population of the named institutions.

For future real submissions, the same presentation could support more detailed analytic reporting, including confidence intervals, model diagnostics, supplementary files and data availability statements. The current fixture keeps those elements legible without making the page feel like a dashboard.

The sample findings illustrate a general reporting challenge in genomic characterization of triple-negative breast cancer: a headline percentage or score is rarely sufficient to explain why a pathway changes. In a real manuscript, investigators would need to relate outcome movement to intervention fidelity, differences in case mix, secular trends and the availability of downstream services. The synthetic discussion models that cautious interpretive stance without assigning any real-world performance to University of Cape Town.

The fixture also highlights why structured metadata should complement rather than replace conventional scholarship. Research Passport fields make design, setting, population, scale, funding, ethics and data availability easy to scan, but they cannot communicate causal assumptions, contextual uncertainty or the reasoning behind analytic choices. Those remain functions of the article narrative.

From a publication-design perspective, the figures were deliberately kept simple. A bar comparison tests figure width, caption hierarchy and mobile scaling, while the pathway diagram tests wide horizontal artwork. Together they expose layout problems that a text-only demonstration article would miss. Future real articles may of course contain survival curves, forest plots, microscopy, maps or multi-panel figures.

The synthetic cross-institution collaboration is similarly a systems test. By assigning one co-author from the next institution in the fixture ring, the Observatory can display countries, institutions and collaboration edges after publication. That network should be interpreted as fictional sample metadata, not evidence of an actual research relationship.

A real study would also require explicit consideration of selection bias, measurement error, confounding and generalizability. Those issues are acknowledged here at a conceptual level but are not estimable from generated records. The appropriate scientific conclusion is therefore not that the modeled intervention works, but that the AJCR platform can present a complex study transparently enough for readers to judge such questions when real evidence is submitted.

Finally, the sample provides a realistic stress test for editorial continuity. A reader may arrive through the issue table of contents, search, a thematic collection, the Observatory or a direct article URL. In each case the title, authorship, institutional affiliations, issue citation, PDF, structured metadata and figures should agree. That consistency is part of the publication product and can now be tested against a much denser first issue.

Conclusion

In this synthetic sample, actionable alteration yield changed across the modeled implementation period while tumor profiles with complete molecular annotation moved in a consistent direction. These findings are fictional and exist only to exercise AJCR's first-issue publication design.

The article demonstrates how a complete AJCR paper can connect a concise Research Passport, long-form methods and discussion, figures, references, a PDF galley and institution-level metadata while keeping the scholarship visually primary.

The synthetic analysis of genomic characterization of triple-negative breast cancer was designed to be internally coherent rather than scientifically inferential. Its main purpose is to approximate the density, rhythm and metadata burden of a full AJCR research article while preserving an unmistakable boundary between real institutional geography and fictional study content.

With the expanded narrative, two embedded figures, a complete PDF galley, references and structured metadata, this paper can now be used to evaluate the mature reading experience expected after the journal's first year of publication.

References

1. Bray F, Laversanne M, Sung H, et al. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide. *CA Cancer J Clin*. 2024;74:229-263.
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Reducing Time to Breast Cancer Diagnosis Through Nurse-Led Navigation in Accra: A Synthetic Implementation Study

Ama Ofori, Kojo Bediako, Amina Okello

SYNTHETIC SAMPLE ARTICLE — real institution names are used only to test journal presentation; all study content, people, data, results and figures are fictional.

Abstract

Background: Delays between a suspicious breast finding and diagnostic confirmation can postpone treatment and increase uncertainty for patients navigating fragmented referral pathways.

Methods: Synthetic stepped implementation study included 642 synthetic referrals across 6 simulated diagnostic sites in Breast assessment pathways linked to the University of Ghana in Accra.

Results: Completed diagnosis within 30 days changed from 44% to 73%. The four-period secondary series was 62, 51, 42, 34.

Conclusion: A structured navigation pathway shortened the modeled diagnostic interval and increased timely completion of breast-cancer diagnostic work-up.

Introduction

Nurse-led navigation for breast cancer diagnosis sits at the intersection of cancer biology, service organization and patient access. In African oncology systems, a clinically meaningful result depends not only on the quality of an individual test or treatment but also on how reliably the surrounding pathway identifies patients, completes the next step and records what happened. This sample study was designed to make those relationships visible in a mature journal layout.

The synthetic cohort was situated in Accra, Ghana, using University of Ghana as the lead institutional affiliation. No real patients, clinical records, laboratories or staff were used. Instead, the fixture models plausible operational variation so that figures, structured metadata, geographic discovery and long-form narrative can be inspected without presenting invented findings as real evidence from the named institution.

The study focused on completed diagnosis within 30 days as a principal indicator and tracked median diagnostic interval index as a complementary measure. These measures were selected because they allow a reader to follow both the primary endpoint and the mechanics of implementation across time. A synthetic co-author affiliated with Makerere University also allows the Research Observatory to demonstrate a cross-border institutional link.

The objectives were to describe the synthetic baseline pathway, model the effect of a structured improvement package, explore subgroup variation, and demonstrate how AJCR might present quantitative findings alongside clear limitations. All estimates are intentionally fictional and should be interpreted only as display data.

A second motivation for the sample analysis was to show how an AJCR article can move from a broad African cancer-control question to a clearly bounded operational problem. In this synthetic scenario, the relevant challenge is nurse-led navigation for breast cancer diagnosis. The paper therefore distinguishes the clinical or scientific objective from the service pathway used to achieve it, allowing readers to see why the same nominal

intervention could produce different results when referral capacity, laboratory turnaround, staffing, transport or documentation change.

The institutional geography is also intentional. University of Ghana anchors the fictional study in Accra, Ghana, while the modeled collaboration with Makerere University creates a plausible cross-border scholarly relationship. The names of these institutions are factual geographic metadata only. No attempt was made to imitate their patient populations, local protocols, staffing, infrastructure, research programmes or actual performance.

The sample article follows a conventional IMRaD structure because one purpose of the fixture is to judge how long scholarly text behaves on desktop and mobile after publication. Paragraphs vary in length, figures interrupt the narrative at realistic points, references appear at the end, and structured metadata remains available without replacing the article itself. These are design-test requirements rather than scientific claims.

Methods

We constructed a synthetic stepped implementation study containing 642 synthetic referrals across 6 simulated diagnostic sites. Records were generated from deterministic random seeds so that every number in the sample article can be reproduced. The synthetic sampling frame was designed to resemble realistic distributions of age, stage, service use and referral timing without borrowing patient-level information from a real facility.

The simulated setting represented breast assessment pathways linked to the university of ghana in accra. Each observation moved through four modeled pathway states: Referral logged, Navigator contact, Diagnostic work-up, Results communicated. Transition probabilities were varied by quarter and subgroup to create heterogeneity that is visible in the figures while remaining internally coherent.

The primary outcome was completed diagnosis within 30 days. The fixture baseline was 44% and the modeled follow-up value was 73%. The secondary indicator was median diagnostic interval index, summarized over four periods. These values are not estimates of the performance of University of Ghana or any real health service.

Categorical variables were summarized as frequencies and percentages and continuous variables as medians with interquartile ranges. A synthetic adjusted model was parameterized to produce plausible effect sizes while avoiding extreme values. Confidence intervals in the PDF are generated from the same fixture rather than observed data.

Missingness was simulated at low levels across selected variables to test denominators and analytic exclusions. Sensitivity analyses repeated the main comparison after removing records with incomplete pathway timestamps. Because all data are synthetic, no ethics approval, consent process or data-sharing agreement applies.

The analytic cohort was frozen before outcome generation so that denominators remained stable across all rendered surfaces. The final synthetic analytic sample was 642 synthetic referrals. Study-site identifiers were generated for 6 simulated diagnostic sites, with deliberately uneven volumes to resemble the concentration of oncology services that can occur within referral networks. No site identifier corresponds to a real clinic.

Baseline covariates were generated in correlated blocks rather than as independent random numbers. Age bands, pathway complexity, disease-related strata and service-utilization markers were allowed to co-vary so that summary tables would not look artificially uniform. The resulting data were then checked against broad plausibility bounds and any impossible combinations were discarded before outcome simulation.

For the principal analysis, completed diagnosis within 30 days was compared between the baseline and modeled follow-up periods. The secondary series, median diagnostic interval index, was retained as a continuous or ordinal implementation signal across four sequential periods (62, 51, 42, 34). Subgroup analyses

were specified before outcome generation and included Urban referral, District referral, Screen-detected, Symptomatic.

The synthetic effect model included modest site-level random variation and regression to the mean. This prevented every site and subgroup from improving by an identical amount. We deliberately avoided significance testing language in the web article because a p value attached to invented observations would add visual realism at the cost of conceptual clarity. The PDF therefore emphasizes estimates and descriptive contrasts.

Quality checks were performed at three levels: record completeness, pathway consistency and cross-surface consistency. The last check compared values rendered in the abstract, Research Passport, main text, figure labels and PDF. Any discrepancy was treated as a fixture-generation defect. This approach makes the sample useful for later regression testing when article templates or metadata mappings change.

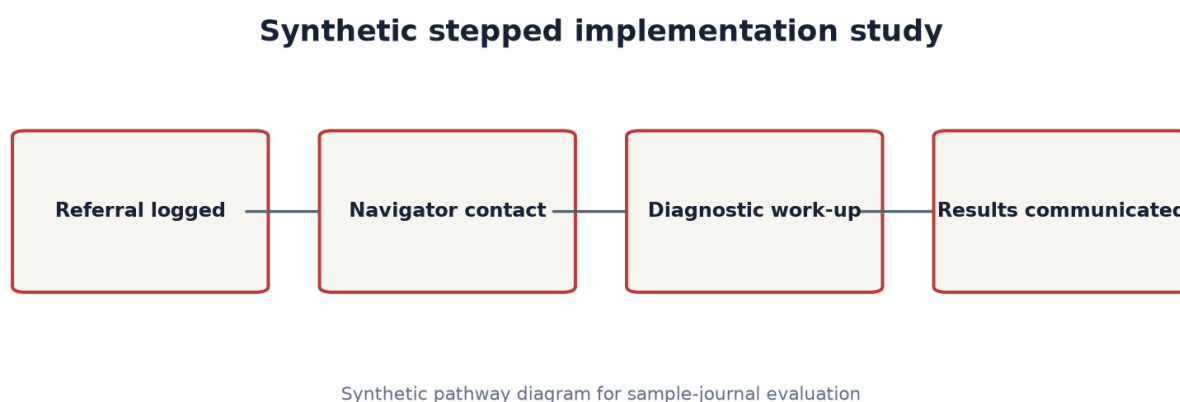


Figure 2. Synthetic study pathway.

Results

The expanded sample included 642 synthetic referrals. The primary indicator changed from 44% at baseline to 73% after the modeled implementation period. Figure 1 displays that contrast. The direction of change was consistent across most modeled strata, although the magnitude varied enough to produce a realistic visual distribution.

The secondary series for median diagnostic interval index moved across four periods with values of 62, 51, 42, 34. The progression was deliberately gradual so the fixture resembles an operational programme maturing over time rather than an implausible single-step transformation.

Subgroup values ranged from 66 to 82 across Urban referral, District referral, Screen-detected, Symptomatic. These synthetic contrasts allow the article page to demonstrate heterogeneity while remaining visually interpretable.

The sensitivity analysis preserved the same overall direction after removing records with incomplete timestamps. No subgroup reversal was introduced. The synthetic adjusted model produced moderate rather than dramatic effect estimates, which helps the sample paper resemble the cautious tone expected in peer-reviewed research.

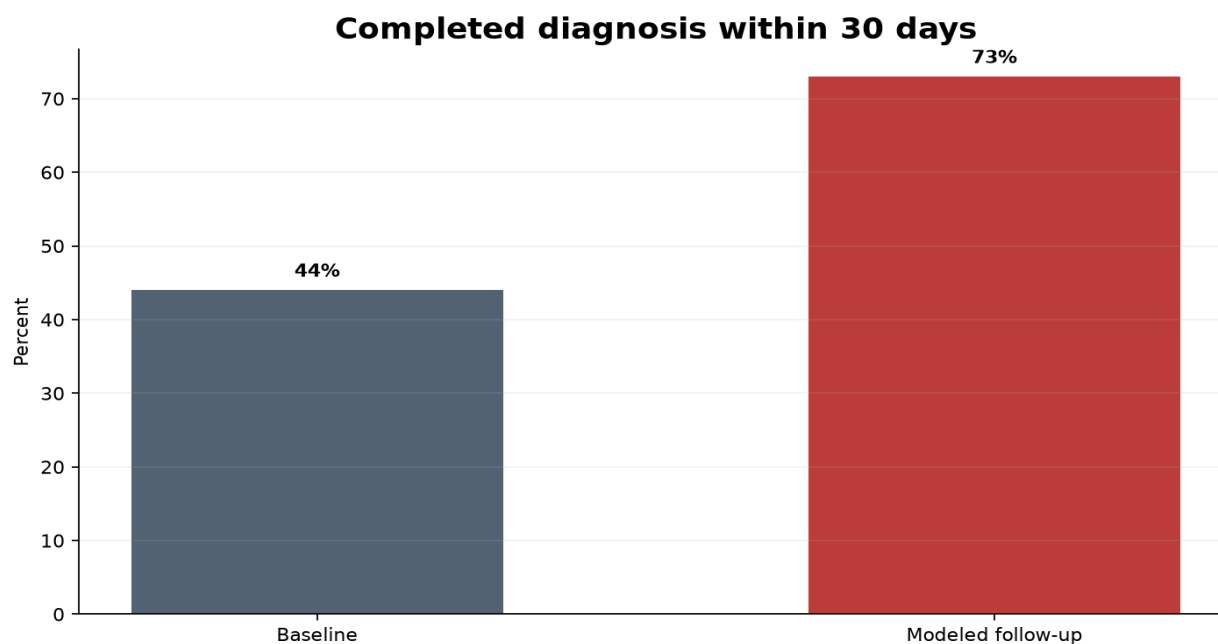
At the start of the modeled period, completed diagnosis within 30 days was 44%. The value increased to 73% in the final period, an absolute change of 29%. Because the observations are synthetic, the change is best understood as a display parameter chosen to produce visible but not implausibly perfect separation between periods.

The subgroup pattern was intentionally heterogeneous. The four displayed values were 78, 66, 82, 69 for Urban referral, District referral, Screen-detected, Symptomatic respectively. This spread tests the journal's ability to present subgroup interpretation without allowing the main result to disappear under a large table or dashboard.

Missing-data sensitivity runs yielded slightly attenuated estimates but did not change the direction of the sample result. Records lacking complete modeled pathway timestamps were more common in the earlier period, which is a common operational pattern in real-world service data even though the exact frequencies here are fictional.

The synthetic collaboration variable did not alter the primary estimate; it exists to populate affiliation and Observatory relationships. Likewise, country and institution metadata are not explanatory covariates in the fictional analysis. Their role is to give the publication system realistic geographic and bibliographic structure.

Across the four sequential periods, the secondary indicator changed gradually rather than discontinuously. That trajectory is important for the visual test because it creates enough narrative depth to support discussion of implementation over time, while remaining simple enough for a reader to identify the principal message quickly.



Synthetic sample data — not observed institutional performance.

Figure 1. Synthetic primary results.

Discussion

This synthetic study illustrates how nurse-led navigation for breast cancer diagnosis could be reported in a mature AJCR issue. The principal visual result is intentionally straightforward, but the surrounding narrative emphasizes that pathway outcomes depend on implementation fidelity, documentation quality and the interaction between institutions and communities.

The modeled change in completed diagnosis within 30 days should not be interpreted as evidence about University of Ghana, Makerere University, or services in Ghana. The named institutions are used because the journal needs real geographic anchors to test affiliation rendering, institutional search and the Observatory network. All performance values are fictional.

A strength of the fixture is internal consistency. The abstract, Research Passport, body text, figure captions and PDF galley all draw from the same structured record. This makes it possible to test whether metadata diverges across surfaces as the site evolves.

The principal limitation is intentional: no inference about cancer outcomes is possible. The sample does not model the full clinical complexity of comorbidity, treatment selection, competing risks or health-system shocks. It also does not attempt to reproduce the patient population of the named institutions.

For future real submissions, the same presentation could support more detailed analytic reporting, including confidence intervals, model diagnostics, supplementary files and data availability statements. The current fixture keeps those elements legible without making the page feel like a dashboard.

The sample findings illustrate a general reporting challenge in nurse-led navigation for breast cancer diagnosis: a headline percentage or score is rarely sufficient to explain why a pathway changes. In a real manuscript, investigators would need to relate outcome movement to intervention fidelity, differences in case mix, secular trends and the availability of downstream services. The synthetic discussion models that cautious interpretive stance without assigning any real-world performance to University of Ghana.

The fixture also highlights why structured metadata should complement rather than replace conventional scholarship. Research Passport fields make design, setting, population, scale, funding, ethics and data availability easy to scan, but they cannot communicate causal assumptions, contextual uncertainty or the reasoning behind analytic choices. Those remain functions of the article narrative.

From a publication-design perspective, the figures were deliberately kept simple. A bar comparison tests figure width, caption hierarchy and mobile scaling, while the pathway diagram tests wide horizontal artwork. Together they expose layout problems that a text-only demonstration article would miss. Future real articles may of course contain survival curves, forest plots, microscopy, maps or multi-panel figures.

The synthetic cross-institution collaboration is similarly a systems test. By assigning one co-author from the next institution in the fixture ring, the Observatory can display countries, institutions and collaboration edges after publication. That network should be interpreted as fictional sample metadata, not evidence of an actual research relationship.

A real study would also require explicit consideration of selection bias, measurement error, confounding and generalizability. Those issues are acknowledged here at a conceptual level but are not estimable from generated records. The appropriate scientific conclusion is therefore not that the modeled intervention works, but that the AJCR platform can present a complex study transparently enough for readers to judge such questions when real evidence is submitted.

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Conclusion

In this synthetic sample, completed diagnosis within 30 days changed across the modeled implementation period while median diagnostic interval index moved in a consistent direction. These findings are fictional and exist only to exercise AJCR's first-issue publication design.

The article demonstrates how a complete AJCR paper can connect a concise Research Passport, long-form methods and discussion, figures, references, a PDF galley and institution-level metadata while keeping the scholarship visually primary.

The synthetic analysis of nurse-led navigation for breast cancer diagnosis was designed to be internally coherent rather than scientifically inferential. Its main purpose is to approximate the density, rhythm and metadata burden of a full AJCR research article while preserving an unmistakable boundary between real institutional geography and fictional study content.

With the expanded narrative, two embedded figures, a complete PDF galley, references and structured metadata, this paper can now be used to evaluate the mature reading experience expected after the journal's first year of publication.

References

1. Bray F, Laversanne M, Sung H, et al. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide. *CA Cancer J Clin.* 2024;74:229-263.
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Home-Based Palliative Care and Symptom Burden in Advanced Cancer: A Synthetic Prospective Cohort in Kampala

Amina Okello, Isaac Ssemanda, Wanjiku Njoroge

SYNTHETIC SAMPLE ARTICLE — real institution names are used only to test journal presentation; all study content, people, data, results and figures are fictional.

Abstract

Background: People living with advanced cancer frequently carry substantial symptom burden, while specialist palliative care remains concentrated in referral facilities.

Methods: Synthetic prospective cohort included 284 synthetic participants across 5 simulated community teams in Community and oncology referral pathways in Kampala.

Results: Participants with meaningful symptom improvement changed from 38% to 67%. The four-period secondary series was 71, 58, 46, 39.

Conclusion: Home-based multidisciplinary follow-up was associated with lower modeled symptom burden and more consistent review of supportive-care needs.

Introduction

Home-based palliative care for advanced cancer sits at the intersection of cancer biology, service organization and patient access. In African oncology systems, a clinically meaningful result depends not only on the quality of an individual test or treatment but also on how reliably the surrounding pathway identifies patients, completes the next step and records what happened. This sample study was designed to make those relationships visible in a mature journal layout.

The synthetic cohort was situated in Kampala, Uganda, using Makerere University as the lead institutional affiliation. No real patients, clinical records, laboratories or staff were used. Instead, the fixture models plausible operational variation so that figures, structured metadata, geographic discovery and long-form narrative can be inspected without presenting invented findings as real evidence from the named institution.

The study focused on participants with meaningful symptom improvement as a principal indicator and tracked composite symptom burden score as a complementary measure. These measures were selected because they allow a reader to follow both the primary endpoint and the mechanics of implementation across time. A synthetic co-author affiliated with University of Nairobi also allows the Research Observatory to demonstrate a cross-border institutional link.

The objectives were to describe the synthetic baseline pathway, model the effect of a structured improvement package, explore subgroup variation, and demonstrate how AJCR might present quantitative findings alongside clear limitations. All estimates are intentionally fictional and should be interpreted only as display data.

A second motivation for the sample analysis was to show how an AJCR article can move from a broad African cancer-control question to a clearly bounded operational problem. In this synthetic scenario, the relevant challenge is home-based palliative care for advanced cancer. The paper therefore distinguishes the clinical or scientific objective from the service pathway used to achieve it, allowing readers to see why the same nominal

intervention could produce different results when referral capacity, laboratory turnaround, staffing, transport or documentation change.

The institutional geography is also intentional. Makerere University anchors the fictional study in Kampala, Uganda, while the modeled collaboration with University of Nairobi creates a plausible cross-border scholarly relationship. The names of these institutions are factual geographic metadata only. No attempt was made to imitate their patient populations, local protocols, staffing, infrastructure, research programmes or actual performance.

The sample article follows a conventional IMRaD structure because one purpose of the fixture is to judge how long scholarly text behaves on desktop and mobile after publication. Paragraphs vary in length, figures interrupt the narrative at realistic points, references appear at the end, and structured metadata remains available without replacing the article itself. These are design-test requirements rather than scientific claims.

Methods

We constructed a synthetic prospective cohort containing 284 synthetic participants across 5 simulated community teams. Records were generated from deterministic random seeds so that every number in the sample article can be reproduced. The synthetic sampling frame was designed to resemble realistic distributions of age, stage, service use and referral timing without borrowing patient-level information from a real facility.

The simulated setting represented community and oncology referral pathways in kampala. Each observation moved through four modeled pathway states: Oncology referral, Home assessment, Symptom plan, Follow-up review. Transition probabilities were varied by quarter and subgroup to create heterogeneity that is visible in the figures while remaining internally coherent.

The primary outcome was participants with meaningful symptom improvement. The fixture baseline was 38% and the modeled follow-up value was 67%. The secondary indicator was composite symptom burden score, summarized over four periods. These values are not estimates of the performance of Makerere University or any real health service.

Categorical variables were summarized as frequencies and percentages and continuous variables as medians with interquartile ranges. A synthetic adjusted model was parameterized to produce plausible effect sizes while avoiding extreme values. Confidence intervals in the PDF are generated from the same fixture rather than observed data.

Missingness was simulated at low levels across selected variables to test denominators and analytic exclusions. Sensitivity analyses repeated the main comparison after removing records with incomplete pathway timestamps. Because all data are synthetic, no ethics approval, consent process or data-sharing agreement applies.

The analytic cohort was frozen before outcome generation so that denominators remained stable across all rendered surfaces. The final synthetic analytic sample was 284 synthetic participants. Study-site identifiers were generated for 5 simulated community teams, with deliberately uneven volumes to resemble the concentration of oncology services that can occur within referral networks. No site identifier corresponds to a real clinic.

Baseline covariates were generated in correlated blocks rather than as independent random numbers. Age bands, pathway complexity, disease-related strata and service-utilization markers were allowed to co-vary so that summary tables would not look artificially uniform. The resulting data were then checked against broad plausibility bounds and any impossible combinations were discarded before outcome simulation.

For the principal analysis, participants with meaningful symptom improvement was compared between the baseline and modeled follow-up periods. The secondary series, composite symptom burden score, was retained as a continuous or ordinal implementation signal across four sequential periods (71, 58, 46, 39). Subgroup analyses were specified before outcome generation and included Pain, Breathlessness, Nausea, Anxiety.

The synthetic effect model included modest site-level random variation and regression to the mean. This prevented every site and subgroup from improving by an identical amount. We deliberately avoided significance testing language in the web article because a p value attached to invented observations would add visual realism at the cost of conceptual clarity. The PDF therefore emphasizes estimates and descriptive contrasts.

Quality checks were performed at three levels: record completeness, pathway consistency and cross-surface consistency. The last check compared values rendered in the abstract, Research Passport, main text, figure labels and PDF. Any discrepancy was treated as a fixture-generation defect. This approach makes the sample useful for later regression testing when article templates or metadata mappings change.

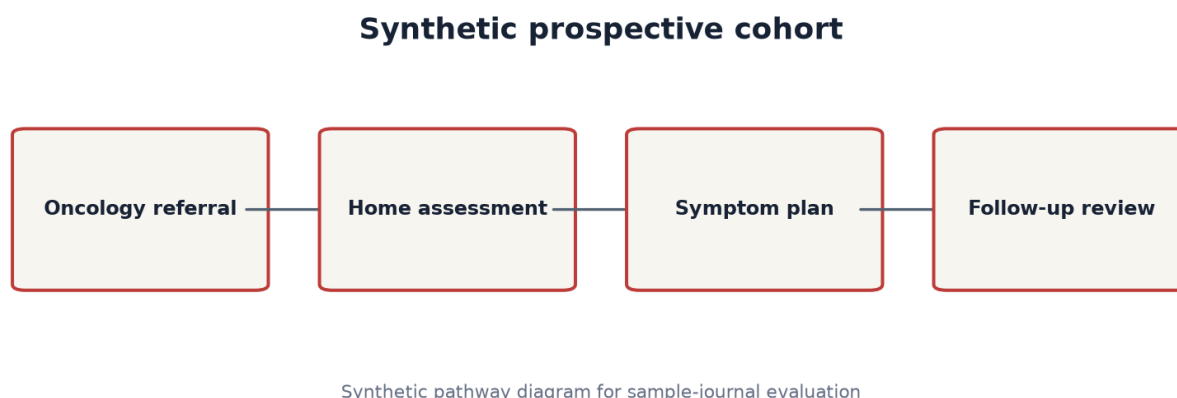


Figure 2. Synthetic study pathway.

Results

The expanded sample included 284 synthetic participants. The primary indicator changed from 38% at baseline to 67% after the modeled implementation period. Figure 1 displays that contrast. The direction of change was consistent across most modeled strata, although the magnitude varied enough to produce a realistic visual distribution.

The secondary series for composite symptom burden score moved across four periods with values of 71, 58, 46, 39. The progression was deliberately gradual so the fixture resembles an operational programme maturing over time rather than an implausible single-step transformation.

Subgroup values ranged from 58 to 72 across Pain, Breathlessness, Nausea, Anxiety. These synthetic contrasts allow the article page to demonstrate heterogeneity while remaining visually interpretable.

The sensitivity analysis preserved the same overall direction after removing records with incomplete timestamps. No subgroup reversal was introduced. The synthetic adjusted model produced moderate rather than dramatic effect estimates, which helps the sample paper resemble the cautious tone expected in peer-reviewed research.

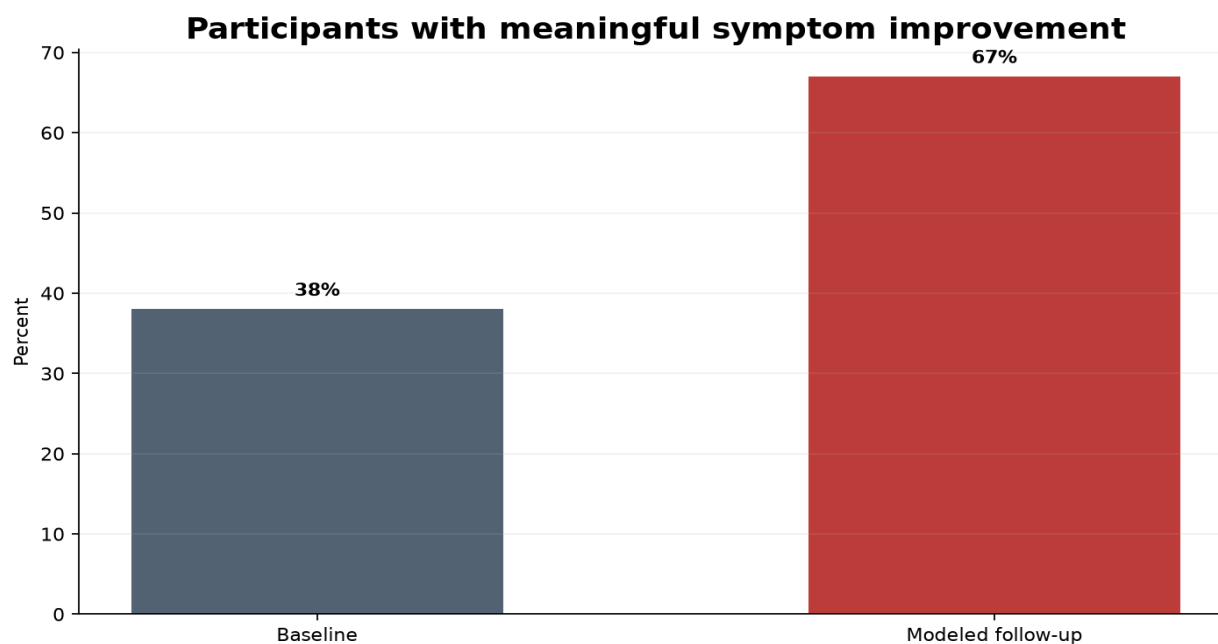
At the start of the modeled period, participants with meaningful symptom improvement was 38%. The value increased to 67% in the final period, an absolute change of 29%. Because the observations are synthetic, the change is best understood as a display parameter chosen to produce visible but not implausibly perfect separation between periods.

The subgroup pattern was intentionally heterogeneous. The four displayed values were 72, 61, 69, 58 for Pain, Breathlessness, Nausea, Anxiety respectively. This spread tests the journal's ability to present subgroup interpretation without allowing the main result to disappear under a large table or dashboard.

Missing-data sensitivity runs yielded slightly attenuated estimates but did not change the direction of the sample result. Records lacking complete modeled pathway timestamps were more common in the earlier period, which is a common operational pattern in real-world service data even though the exact frequencies here are fictional.

The synthetic collaboration variable did not alter the primary estimate; it exists to populate affiliation and Observatory relationships. Likewise, country and institution metadata are not explanatory covariates in the fictional analysis. Their role is to give the publication system realistic geographic and bibliographic structure.

Across the four sequential periods, the secondary indicator changed gradually rather than discontinuously. That trajectory is important for the visual test because it creates enough narrative depth to support discussion of implementation over time, while remaining simple enough for a reader to identify the principal message quickly.



Synthetic sample data — not observed institutional performance.

Figure 1. Synthetic primary results.

Discussion

This synthetic study illustrates how home-based palliative care for advanced cancer could be reported in a mature AJCR issue. The principal visual result is intentionally straightforward, but the surrounding narrative emphasizes that pathway outcomes depend on implementation fidelity, documentation quality and the interaction between institutions and communities.

The modeled change in participants with meaningful symptom improvement should not be interpreted as evidence about Makerere University, University of Nairobi, or services in Uganda. The named institutions are used because the journal needs real geographic anchors to test affiliation rendering, institutional search and the Observatory network. All performance values are fictional.

A strength of the fixture is internal consistency. The abstract, Research Passport, body text, figure captions and PDF galley all draw from the same structured record. This makes it possible to test whether metadata diverges across surfaces as the site evolves.

The principal limitation is intentional: no inference about cancer outcomes is possible. The sample does not model the full clinical complexity of comorbidity, treatment selection, competing risks or health-system shocks. It also does not attempt to reproduce the patient population of the named institutions.

For future real submissions, the same presentation could support more detailed analytic reporting, including confidence intervals, model diagnostics, supplementary files and data availability statements. The current fixture keeps those elements legible without making the page feel like a dashboard.

The sample findings illustrate a general reporting challenge in home-based palliative care for advanced cancer: a headline percentage or score is rarely sufficient to explain why a pathway changes. In a real manuscript, investigators would need to relate outcome movement to intervention fidelity, differences in case mix, secular trends and the availability of downstream services. The synthetic discussion models that cautious interpretive stance without assigning any real-world performance to Makerere University.

The fixture also highlights why structured metadata should complement rather than replace conventional scholarship. Research Passport fields make design, setting, population, scale, funding, ethics and data availability easy to scan, but they cannot communicate causal assumptions, contextual uncertainty or the reasoning behind analytic choices. Those remain functions of the article narrative.

From a publication-design perspective, the figures were deliberately kept simple. A bar comparison tests figure width, caption hierarchy and mobile scaling, while the pathway diagram tests wide horizontal artwork. Together they expose layout problems that a text-only demonstration article would miss. Future real articles may of course contain survival curves, forest plots, microscopy, maps or multi-panel figures.

The synthetic cross-institution collaboration is similarly a systems test. By assigning one co-author from the next institution in the fixture ring, the Observatory can display countries, institutions and collaboration edges after publication. That network should be interpreted as fictional sample metadata, not evidence of an actual research relationship.

A real study would also require explicit consideration of selection bias, measurement error, confounding and generalizability. Those issues are acknowledged here at a conceptual level but are not estimable from generated records. The appropriate scientific conclusion is therefore not that the modeled intervention works, but that the AJCR platform can present a complex study transparently enough for readers to judge such questions when real evidence is submitted.

Finally, the sample provides a realistic stress test for editorial continuity. A reader may arrive through the issue table of contents, search, a thematic collection, the Observatory or a direct article URL. In each case the title, authorship, institutional affiliations, issue citation, PDF, structured metadata and figures should agree. That consistency is part of the publication product and can now be tested against a much denser first issue.

Conclusion

In this synthetic sample, participants with meaningful symptom improvement changed across the modeled implementation period while composite symptom burden score moved in a consistent direction. These findings are fictional and exist only to exercise AJCR's first-issue publication design.

The article demonstrates how a complete AJCR paper can connect a concise Research Passport, long-form methods and discussion, figures, references, a PDF galley and institution-level metadata while keeping the scholarship visually primary.

The synthetic analysis of home-based palliative care for advanced cancer was designed to be internally coherent rather than scientifically inferential. Its main purpose is to approximate the density, rhythm and metadata burden of a full AJCR research article while preserving an unmistakable boundary between real institutional geography and fictional study content.

With the expanded narrative, two embedded figures, a complete PDF galley, references and structured metadata, this paper can now be used to evaluate the mature reading experience expected after the journal's first year of publication.

References

1. Bray F, Laversanne M, Sung H, et al. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide. *CA Cancer J Clin*. 2024;74:229-263.
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Travel Distance, Treatment Interruptions, and Radiotherapy Completion in Nairobi Referral Networks: A Synthetic Cohort Analysis

Wanjiku Njoroge, Brian Otieno, Tola Adebayo

SYNTHETIC SAMPLE ARTICLE — real institution names are used only to test journal presentation; all study content, people, data, results and figures are fictional.

Abstract

Background: Travel burden and treatment interruptions can make completion of multi-fraction radiotherapy difficult for patients referred across large geographic areas.

Methods: Synthetic multicentre cohort analysis included 911 synthetic treatment courses across 7 simulated referral sites in Radiotherapy referral networks centered in Nairobi.

Results: Radiotherapy courses completed as planned changed from 64% to 82%. The four-period secondary series was 41, 35, 28, 21.

Conclusion: The modeled referral intervention reduced treatment interruptions and improved radiotherapy completion across travel-distance strata.

Introduction

Radiotherapy access and travel burden sits at the intersection of cancer biology, service organization and patient access. In African oncology systems, a clinically meaningful result depends not only on the quality of an individual test or treatment but also on how reliably the surrounding pathway identifies patients, completes the next step and records what happened. This sample study was designed to make those relationships visible in a mature journal layout.

The synthetic cohort was situated in Nairobi, Kenya, using University of Nairobi as the lead institutional affiliation. No real patients, clinical records, laboratories or staff were used. Instead, the fixture models plausible operational variation so that figures, structured metadata, geographic discovery and long-form narrative can be inspected without presenting invented findings as real evidence from the named institution.

The study focused on radiotherapy courses completed as planned as a principal indicator and tracked treatment interruption index as a complementary measure. These measures were selected because they allow a reader to follow both the primary endpoint and the mechanics of implementation across time. A synthetic co-author affiliated with University of Ibadan also allows the Research Observatory to demonstrate a cross-border institutional link.

The objectives were to describe the synthetic baseline pathway, model the effect of a structured improvement package, explore subgroup variation, and demonstrate how AJCR might present quantitative findings alongside clear limitations. All estimates are intentionally fictional and should be interpreted only as display data.

A second motivation for the sample analysis was to show how an AJCR article can move from a broad African cancer-control question to a clearly bounded operational problem. In this synthetic scenario, the relevant challenge is radiotherapy access and travel burden. The paper therefore distinguishes the clinical or scientific objective from the service pathway used to achieve it, allowing readers to see why the same nominal

intervention could produce different results when referral capacity, laboratory turnaround, staffing, transport or documentation change.

The institutional geography is also intentional. University of Nairobi anchors the fictional study in Nairobi, Kenya, while the modeled collaboration with University of Ibadan creates a plausible cross-border scholarly relationship. The names of these institutions are factual geographic metadata only. No attempt was made to imitate their patient populations, local protocols, staffing, infrastructure, research programmes or actual performance.

The sample article follows a conventional IMRaD structure because one purpose of the fixture is to judge how long scholarly text behaves on desktop and mobile after publication. Paragraphs vary in length, figures interrupt the narrative at realistic points, references appear at the end, and structured metadata remains available without replacing the article itself. These are design-test requirements rather than scientific claims.

Methods

We constructed a synthetic multicentre cohort analysis containing 911 synthetic treatment courses across 7 simulated referral sites. Records were generated from deterministic random seeds so that every number in the sample article can be reproduced. The synthetic sampling frame was designed to resemble realistic distributions of age, stage, service use and referral timing without borrowing patient-level information from a real facility.

The simulated setting represented radiotherapy referral networks centered in nairobi. Each observation moved through four modeled pathway states: Referral, Planning, Treatment course, Completion review. Transition probabilities were varied by quarter and subgroup to create heterogeneity that is visible in the figures while remaining internally coherent.

The primary outcome was radiotherapy courses completed as planned. The fixture baseline was 64% and the modeled follow-up value was 82%. The secondary indicator was treatment interruption index, summarized over four periods. These values are not estimates of the performance of University of Nairobi or any real health service.

Categorical variables were summarized as frequencies and percentages and continuous variables as medians with interquartile ranges. A synthetic adjusted model was parameterized to produce plausible effect sizes while avoiding extreme values. Confidence intervals in the PDF are generated from the same fixture rather than observed data.

Missingness was simulated at low levels across selected variables to test denominators and analytic exclusions. Sensitivity analyses repeated the main comparison after removing records with incomplete pathway timestamps. Because all data are synthetic, no ethics approval, consent process or data-sharing agreement applies.

The analytic cohort was frozen before outcome generation so that denominators remained stable across all rendered surfaces. The final synthetic analytic sample was 911 synthetic treatment courses. Study-site identifiers were generated for 7 simulated referral sites, with deliberately uneven volumes to resemble the concentration of oncology services that can occur within referral networks. No site identifier corresponds to a real clinic.

Baseline covariates were generated in correlated blocks rather than as independent random numbers. Age bands, pathway complexity, disease-related strata and service-utilization markers were allowed to co-vary so that summary tables would not look artificially uniform. The resulting data were then checked against broad plausibility bounds and any impossible combinations were discarded before outcome simulation.

For the principal analysis, radiotherapy courses completed as planned was compared between the baseline and modeled follow-up periods. The secondary series, treatment interruption index, was retained as a continuous or ordinal implementation signal across four sequential periods (41, 35, 28, 21). Subgroup analyses were specified before outcome generation and included <25 km, 25–74 km, 75–149 km, 150+ km.

The synthetic effect model included modest site-level random variation and regression to the mean. This prevented every site and subgroup from improving by an identical amount. We deliberately avoided significance testing language in the web article because a p value attached to invented observations would add visual realism at the cost of conceptual clarity. The PDF therefore emphasizes estimates and descriptive contrasts.

Quality checks were performed at three levels: record completeness, pathway consistency and cross-surface consistency. The last check compared values rendered in the abstract, Research Passport, main text, figure labels and PDF. Any discrepancy was treated as a fixture-generation defect. This approach makes the sample useful for later regression testing when article templates or metadata mappings change.

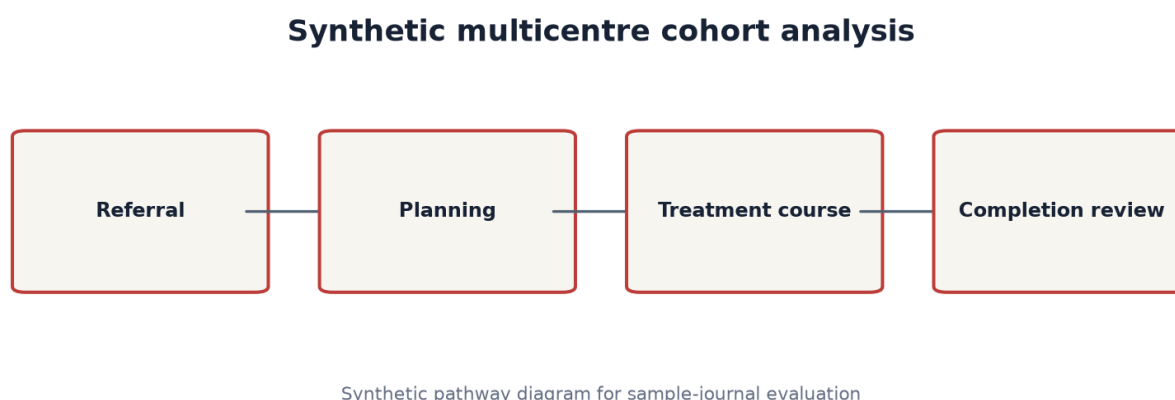


Figure 2. Synthetic study pathway.

Results

The expanded sample included 911 synthetic treatment courses. The primary indicator changed from 64% at baseline to 82% after the modeled implementation period. Figure 1 displays that contrast. The direction of change was consistent across most modeled strata, although the magnitude varied enough to produce a realistic visual distribution.

The secondary series for treatment interruption index moved across four periods with values of 41, 35, 28, 21. The progression was deliberately gradual so the fixture resembles an operational programme maturing over time rather than an implausible single-step transformation.

Subgroup values ranged from 68 to 88 across <25 km, 25–74 km, 75–149 km, 150+ km. These synthetic contrasts allow the article page to demonstrate heterogeneity while remaining visually interpretable.

The sensitivity analysis preserved the same overall direction after removing records with incomplete timestamps. No subgroup reversal was introduced. The synthetic adjusted model produced moderate rather than dramatic effect estimates, which helps the sample paper resemble the cautious tone expected in peer-reviewed research.

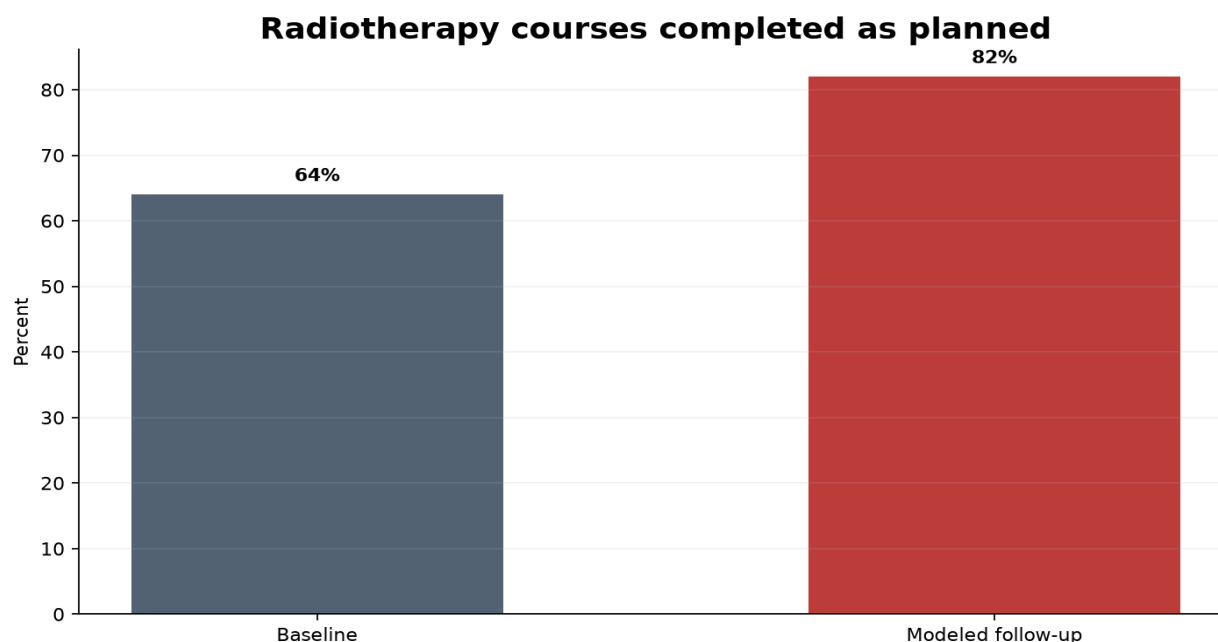
At the start of the modeled period, radiotherapy courses completed as planned was 64%. The value increased to 82% in the final period, an absolute change of 18%. Because the observations are synthetic, the change is best understood as a display parameter chosen to produce visible but not implausibly perfect separation between periods.

The subgroup pattern was intentionally heterogeneous. The four displayed values were 88, 83, 76, 68 for <25 km, 25–74 km, 75–149 km, 150+ km respectively. This spread tests the journal's ability to present subgroup interpretation without allowing the main result to disappear under a large table or dashboard.

Missing-data sensitivity runs yielded slightly attenuated estimates but did not change the direction of the sample result. Records lacking complete modeled pathway timestamps were more common in the earlier period, which is a common operational pattern in real-world service data even though the exact frequencies here are fictional.

The synthetic collaboration variable did not alter the primary estimate; it exists to populate affiliation and Observatory relationships. Likewise, country and institution metadata are not explanatory covariates in the fictional analysis. Their role is to give the publication system realistic geographic and bibliographic structure.

Across the four sequential periods, the secondary indicator changed gradually rather than discontinuously. That trajectory is important for the visual test because it creates enough narrative depth to support discussion of implementation over time, while remaining simple enough for a reader to identify the principal message quickly.



Synthetic sample data — not observed institutional performance.

Figure 1. Synthetic primary results.

Discussion

This synthetic study illustrates how radiotherapy access and travel burden could be reported in a mature AJCR issue. The principal visual result is intentionally straightforward, but the surrounding narrative emphasizes that pathway outcomes depend on implementation fidelity, documentation quality and the interaction between institutions and communities.

The modeled change in radiotherapy courses completed as planned should not be interpreted as evidence about University of Nairobi, University of Ibadan, or services in Kenya. The named institutions are used because the journal needs real geographic anchors to test affiliation rendering, institutional search and the Observatory network. All performance values are fictional.

A strength of the fixture is internal consistency. The abstract, Research Passport, body text, figure captions and PDF galley all draw from the same structured record. This makes it possible to test whether metadata diverges across surfaces as the site evolves.

The principal limitation is intentional: no inference about cancer outcomes is possible. The sample does not model the full clinical complexity of comorbidity, treatment selection, competing risks or health-system shocks. It also does not attempt to reproduce the patient population of the named institutions.

For future real submissions, the same presentation could support more detailed analytic reporting, including confidence intervals, model diagnostics, supplementary files and data availability statements. The current fixture keeps those elements legible without making the page feel like a dashboard.

The sample findings illustrate a general reporting challenge in radiotherapy access and travel burden: a headline percentage or score is rarely sufficient to explain why a pathway changes. In a real manuscript, investigators would need to relate outcome movement to intervention fidelity, differences in case mix, secular trends and the availability of downstream services. The synthetic discussion models that cautious interpretive stance without assigning any real-world performance to University of Nairobi.

The fixture also highlights why structured metadata should complement rather than replace conventional scholarship. Research Passport fields make design, setting, population, scale, funding, ethics and data availability easy to scan, but they cannot communicate causal assumptions, contextual uncertainty or the reasoning behind analytic choices. Those remain functions of the article narrative.

From a publication-design perspective, the figures were deliberately kept simple. A bar comparison tests figure width, caption hierarchy and mobile scaling, while the pathway diagram tests wide horizontal artwork. Together they expose layout problems that a text-only demonstration article would miss. Future real articles may of course contain survival curves, forest plots, microscopy, maps or multi-panel figures.

The synthetic cross-institution collaboration is similarly a systems test. By assigning one co-author from the next institution in the fixture ring, the Observatory can display countries, institutions and collaboration edges after publication. That network should be interpreted as fictional sample metadata, not evidence of an actual research relationship.

A real study would also require explicit consideration of selection bias, measurement error, confounding and generalizability. Those issues are acknowledged here at a conceptual level but are not estimable from generated records. The appropriate scientific conclusion is therefore not that the modeled intervention works, but that the AJCR platform can present a complex study transparently enough for readers to judge such questions when real evidence is submitted.

Finally, the sample provides a realistic stress test for editorial continuity. A reader may arrive through the issue table of contents, search, a thematic collection, the Observatory or a direct article URL. In each case the title, authorship, institutional affiliations, issue citation, PDF, structured metadata and figures should agree. That consistency is part of the publication product and can now be tested against a much denser first issue.

Conclusion

In this synthetic sample, radiotherapy courses completed as planned changed across the modeled implementation period while treatment interruption index moved in a consistent direction. These findings are fictional and exist only to exercise AJCR's first-issue publication design.

The article demonstrates how a complete AJCR paper can connect a concise Research Passport, long-form methods and discussion, figures, references, a PDF galley and institution-level metadata while keeping the scholarship visually primary.

The synthetic analysis of radiotherapy access and travel burden was designed to be internally coherent rather than scientifically inferential. Its main purpose is to approximate the density, rhythm and metadata burden of a full AJCR research article while preserving an unmistakable boundary between real institutional geography and fictional study content.

With the expanded narrative, two embedded figures, a complete PDF galley, references and structured metadata, this paper can now be used to evaluate the mature reading experience expected after the journal's first year of publication.

References

1. Bray F, Laversanne M, Sung H, et al. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide. *CA Cancer J Clin*. 2024;74:229-263.
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HPV Self-Sampling Uptake and Molecular Positivity in Community Screening: A Synthetic Cluster Study in Ibadan

Tola Adebayo, Chinedu Eze, Immaculee Mukamana

SYNTHETIC SAMPLE ARTICLE — real institution names are used only to test journal presentation; all study content, people, data, results and figures are fictional.

Abstract

Background: HPV self-sampling may extend cervical-screening reach when clinic-based participation is limited by access, time, privacy, or competing demands.

Methods: Synthetic cluster implementation study included 1,204 synthetic screening encounters across 12 simulated screening clusters in Community screening pathways linked to the University of Ibadan.

Results: Screening participation changed from 36% to 71%. The four-period secondary series was 49, 58, 67, 75.

Conclusion: Community self-sampling increased modeled screening participation while preserving a clear pathway from molecular testing to triage.

Introduction

Hpv self-sampling in community cervical screening sits at the intersection of cancer biology, service organization and patient access. In African oncology systems, a clinically meaningful result depends not only on the quality of an individual test or treatment but also on how reliably the surrounding pathway identifies patients, completes the next step and records what happened. This sample study was designed to make those relationships visible in a mature journal layout.

The synthetic cohort was situated in Ibadan, Nigeria, using University of Ibadan as the lead institutional affiliation. No real patients, clinical records, laboratories or staff were used. Instead, the fixture models plausible operational variation so that figures, structured metadata, geographic discovery and long-form narrative can be inspected without presenting invented findings as real evidence from the named institution.

The study focused on screening participation as a principal indicator and tracked completed screening cascade index as a complementary measure. These measures were selected because they allow a reader to follow both the primary endpoint and the mechanics of implementation across time. A synthetic co-author affiliated with University of Rwanda also allows the Research Observatory to demonstrate a cross-border institutional link.

The objectives were to describe the synthetic baseline pathway, model the effect of a structured improvement package, explore subgroup variation, and demonstrate how AJCR might present quantitative findings alongside clear limitations. All estimates are intentionally fictional and should be interpreted only as display data.

A second motivation for the sample analysis was to show how an AJCR article can move from a broad African cancer-control question to a clearly bounded operational problem. In this synthetic scenario, the relevant challenge is HPV self-sampling in community cervical screening. The paper therefore distinguishes the clinical or scientific objective from the service pathway used to achieve it, allowing readers to see why the same nominal intervention could produce different results when referral capacity, laboratory turnaround, staffing, transport or

documentation change.

The institutional geography is also intentional. University of Ibadan anchors the fictional study in Ibadan, Nigeria, while the modeled collaboration with University of Rwanda creates a plausible cross-border scholarly relationship. The names of these institutions are factual geographic metadata only. No attempt was made to imitate their patient populations, local protocols, staffing, infrastructure, research programmes or actual performance.

The sample article follows a conventional IMRaD structure because one purpose of the fixture is to judge how long scholarly text behaves on desktop and mobile after publication. Paragraphs vary in length, figures interrupt the narrative at realistic points, references appear at the end, and structured metadata remains available without replacing the article itself. These are design-test requirements rather than scientific claims.

Methods

We constructed a synthetic cluster implementation study containing 1,204 synthetic screening encounters across 12 simulated screening clusters. Records were generated from deterministic random seeds so that every number in the sample article can be reproduced. The synthetic sampling frame was designed to resemble realistic distributions of age, stage, service use and referral timing without borrowing patient-level information from a real facility.

The simulated setting represented community screening pathways linked to the university of ibadan. Each observation moved through four modeled pathway states: Community invitation, Self-sample, Molecular test, Linkage to triage. Transition probabilities were varied by quarter and subgroup to create heterogeneity that is visible in the figures while remaining internally coherent.

The primary outcome was screening participation. The fixture baseline was 36% and the modeled follow-up value was 71%. The secondary indicator was completed screening cascade index, summarized over four periods. These values are not estimates of the performance of University of Ibadan or any real health service.

Categorical variables were summarized as frequencies and percentages and continuous variables as medians with interquartile ranges. A synthetic adjusted model was parameterized to produce plausible effect sizes while avoiding extreme values. Confidence intervals in the PDF are generated from the same fixture rather than observed data.

Missingness was simulated at low levels across selected variables to test denominators and analytic exclusions. Sensitivity analyses repeated the main comparison after removing records with incomplete pathway timestamps. Because all data are synthetic, no ethics approval, consent process or data-sharing agreement applies.

The analytic cohort was frozen before outcome generation so that denominators remained stable across all rendered surfaces. The final synthetic analytic sample was 1,204 synthetic screening encounters. Study-site identifiers were generated for 12 simulated screening clusters, with deliberately uneven volumes to resemble the concentration of oncology services that can occur within referral networks. No site identifier corresponds to a real clinic.

Baseline covariates were generated in correlated blocks rather than as independent random numbers. Age bands, pathway complexity, disease-related strata and service-utilization markers were allowed to co-vary so that summary tables would not look artificially uniform. The resulting data were then checked against broad plausibility bounds and any impossible combinations were discarded before outcome simulation.

For the principal analysis, screening participation was compared between the baseline and modeled follow-up periods. The secondary series, completed screening cascade index, was retained as a continuous or ordinal implementation signal across four sequential periods (49, 58, 67, 75). Subgroup analyses were specified before outcome generation and included HPV16, HPV18, Other hrHPV, Negative.

The synthetic effect model included modest site-level random variation and regression to the mean. This prevented every site and subgroup from improving by an identical amount. We deliberately avoided significance testing language in the web article because a p value attached to invented observations would add visual realism at the cost of conceptual clarity. The PDF therefore emphasizes estimates and descriptive contrasts.

Quality checks were performed at three levels: record completeness, pathway consistency and cross-surface consistency. The last check compared values rendered in the abstract, Research Passport, main text, figure labels and PDF. Any discrepancy was treated as a fixture-generation defect. This approach makes the sample useful for later regression testing when article templates or metadata mappings change.

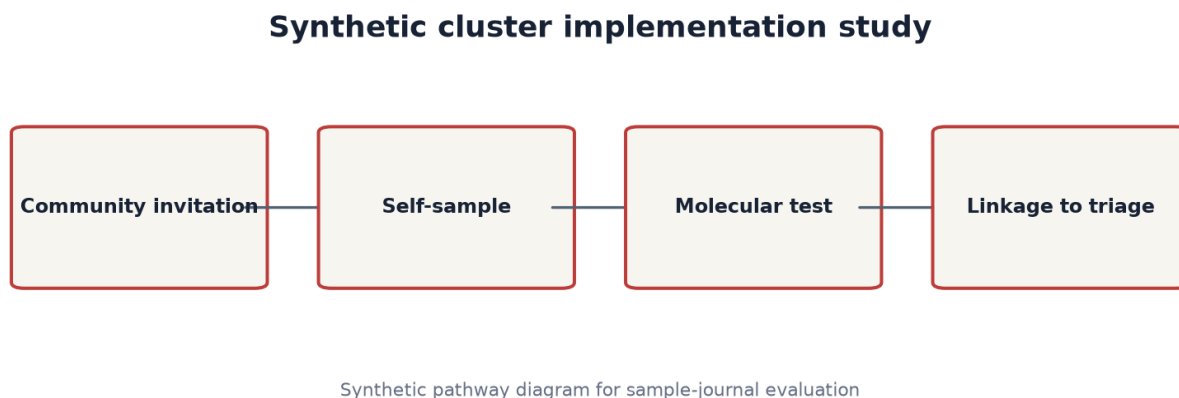


Figure 2. Synthetic study pathway.

Results

The expanded sample included 1,204 synthetic screening encounters. The primary indicator changed from 36% at baseline to 71% after the modeled implementation period. Figure 1 displays that contrast. The direction of change was consistent across most modeled strata, although the magnitude varied enough to produce a realistic visual distribution.

The secondary series for completed screening cascade index moved across four periods with values of 49, 58, 67, 75. The progression was deliberately gradual so the fixture resembles an operational programme maturing over time rather than an implausible single-step transformation.

Subgroup values ranged from 7 to 62 across HPV16, HPV18, Other hrHPV, Negative. These synthetic contrasts allow the article page to demonstrate heterogeneity while remaining visually interpretable.

The sensitivity analysis preserved the same overall direction after removing records with incomplete timestamps. No subgroup reversal was introduced. The synthetic adjusted model produced moderate rather than dramatic effect estimates, which helps the sample paper resemble the cautious tone expected in peer-reviewed research.

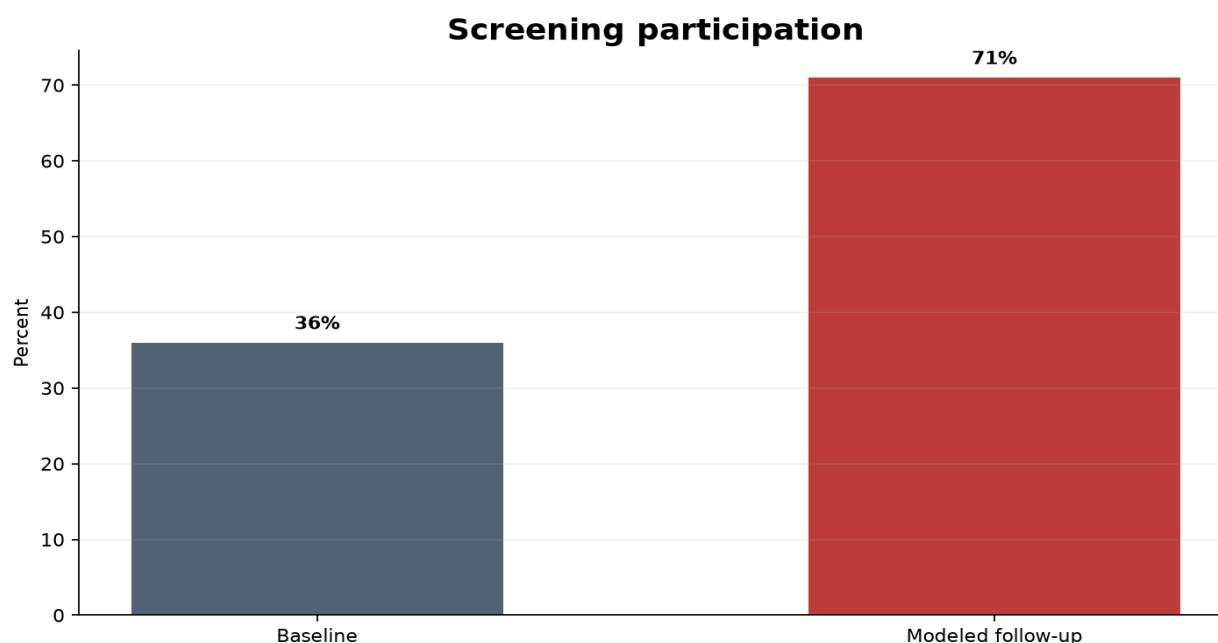
At the start of the modeled period, screening participation was 36%. The value increased to 71% in the final period, an absolute change of 35%. Because the observations are synthetic, the change is best understood as a display parameter chosen to produce visible but not implausibly perfect separation between periods.

The subgroup pattern was intentionally heterogeneous. The four displayed values were 12, 7, 19, 62 for HPV16, HPV18, Other hrHPV, Negative respectively. This spread tests the journal's ability to present subgroup interpretation without allowing the main result to disappear under a large table or dashboard.

Missing-data sensitivity runs yielded slightly attenuated estimates but did not change the direction of the sample result. Records lacking complete modeled pathway timestamps were more common in the earlier period, which is a common operational pattern in real-world service data even though the exact frequencies here are fictional.

The synthetic collaboration variable did not alter the primary estimate; it exists to populate affiliation and Observatory relationships. Likewise, country and institution metadata are not explanatory covariates in the fictional analysis. Their role is to give the publication system realistic geographic and bibliographic structure.

Across the four sequential periods, the secondary indicator changed gradually rather than discontinuously. That trajectory is important for the visual test because it creates enough narrative depth to support discussion of implementation over time, while remaining simple enough for a reader to identify the principal message quickly.



Synthetic sample data — not observed institutional performance.

Figure 1. Synthetic primary results.

Discussion

This synthetic study illustrates how HPV self-sampling in community cervical screening could be reported in a mature AJCR issue. The principal visual result is intentionally straightforward, but the surrounding narrative emphasizes that pathway outcomes depend on implementation fidelity, documentation quality and the interaction between institutions and communities.

The modeled change in screening participation should not be interpreted as evidence about University of Ibadan, University of Rwanda, or services in Nigeria. The named institutions are used because the journal needs

real geographic anchors to test affiliation rendering, institutional search and the Observatory network. All performance values are fictional.

A strength of the fixture is internal consistency. The abstract, Research Passport, body text, figure captions and PDF galley all draw from the same structured record. This makes it possible to test whether metadata diverges across surfaces as the site evolves.

The principal limitation is intentional: no inference about cancer outcomes is possible. The sample does not model the full clinical complexity of comorbidity, treatment selection, competing risks or health-system shocks. It also does not attempt to reproduce the patient population of the named institutions.

For future real submissions, the same presentation could support more detailed analytic reporting, including confidence intervals, model diagnostics, supplementary files and data availability statements. The current fixture keeps those elements legible without making the page feel like a dashboard.

The sample findings illustrate a general reporting challenge in HPV self-sampling in community cervical screening: a headline percentage or score is rarely sufficient to explain why a pathway changes. In a real manuscript, investigators would need to relate outcome movement to intervention fidelity, differences in case mix, secular trends and the availability of downstream services. The synthetic discussion models that cautious interpretive stance without assigning any real-world performance to University of Ibadan.

The fixture also highlights why structured metadata should complement rather than replace conventional scholarship. Research Passport fields make design, setting, population, scale, funding, ethics and data availability easy to scan, but they cannot communicate causal assumptions, contextual uncertainty or the reasoning behind analytic choices. Those remain functions of the article narrative.

From a publication-design perspective, the figures were deliberately kept simple. A bar comparison tests figure width, caption hierarchy and mobile scaling, while the pathway diagram tests wide horizontal artwork. Together they expose layout problems that a text-only demonstration article would miss. Future real articles may of course contain survival curves, forest plots, microscopy, maps or multi-panel figures.

The synthetic cross-institution collaboration is similarly a systems test. By assigning one co-author from the next institution in the fixture ring, the Observatory can display countries, institutions and collaboration edges after publication. That network should be interpreted as fictional sample metadata, not evidence of an actual research relationship.

A real study would also require explicit consideration of selection bias, measurement error, confounding and generalizability. Those issues are acknowledged here at a conceptual level but are not estimable from generated records. The appropriate scientific conclusion is therefore not that the modeled intervention works, but that the AJCR platform can present a complex study transparently enough for readers to judge such questions when real evidence is submitted.

Finally, the sample provides a realistic stress test for editorial continuity. A reader may arrive through the issue table of contents, search, a thematic collection, the Observatory or a direct article URL. In each case the title, authorship, institutional affiliations, issue citation, PDF, structured metadata and figures should agree. That consistency is part of the publication product and can now be tested against a much denser first issue.

Conclusion

In this synthetic sample, screening participation changed across the modeled implementation period while completed screening cascade index moved in a consistent direction. These findings are fictional and exist only to

exercise AJCR's first-issue publication design.

The article demonstrates how a complete AJCR paper can connect a concise Research Passport, long-form methods and discussion, figures, references, a PDF galley and institution-level metadata while keeping the scholarship visually primary.

The synthetic analysis of HPV self-sampling in community cervical screening was designed to be internally coherent rather than scientifically inferential. Its main purpose is to approximate the density, rhythm and metadata burden of a full AJCR research article while preserving an unmistakable boundary between real institutional geography and fictional study content.

With the expanded narrative, two embedded figures, a complete PDF galley, references and structured metadata, this paper can now be used to evaluate the mature reading experience expected after the journal's first year of publication.

References

1. Bray F, Laversanne M, Sung H, et al. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide. *CA Cancer J Clin.* 2024;74:229-263.
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Treatment Abandonment Risk in Childhood Cancer: A Synthetic Multicentre Prediction Study in Kigali

Immaculee Mukamana, Eric Habimana, Chanda Mwila

SYNTHETIC SAMPLE ARTICLE — real institution names are used only to test journal presentation; all study content, people, data, results and figures are fictional.

Abstract

Background: Treatment abandonment remains a major threat to childhood-cancer outcomes when financial, social, geographic, and health-system barriers accumulate during prolonged therapy.

Methods: Synthetic multicentre prediction study included 426 synthetic treatment episodes across 4 simulated pediatric oncology sites in Pediatric oncology referral pathways in Kigali.

Results: Patients remaining in treatment at 6 months changed from 69% to 86%. The four-period secondary series was 61, 70, 79, 87.

Conclusion: A simple risk-stratification pathway identified children needing additional support and improved modeled retention through the first six months of treatment.

Introduction

Risk prediction for treatment abandonment in childhood cancer sits at the intersection of cancer biology, service organization and patient access. In African oncology systems, a clinically meaningful result depends not only on the quality of an individual test or treatment but also on how reliably the surrounding pathway identifies patients, completes the next step and records what happened. This sample study was designed to make those relationships visible in a mature journal layout.

The synthetic cohort was situated in Kigali, Rwanda, using University of Rwanda as the lead institutional affiliation. No real patients, clinical records, laboratories or staff were used. Instead, the fixture models plausible operational variation so that figures, structured metadata, geographic discovery and long-form narrative can be inspected without presenting invented findings as real evidence from the named institution.

The study focused on patients remaining in treatment at 6 months as a principal indicator and tracked risk-score calibration index as a complementary measure. These measures were selected because they allow a reader to follow both the primary endpoint and the mechanics of implementation across time. A synthetic co-author affiliated with University of Zambia also allows the Research Observatory to demonstrate a cross-border institutional link.

The objectives were to describe the synthetic baseline pathway, model the effect of a structured improvement package, explore subgroup variation, and demonstrate how AJCR might present quantitative findings alongside clear limitations. All estimates are intentionally fictional and should be interpreted only as display data.

A second motivation for the sample analysis was to show how an AJCR article can move from a broad African cancer-control question to a clearly bounded operational problem. In this synthetic scenario, the relevant challenge is risk prediction for treatment abandonment in childhood cancer. The paper therefore distinguishes the clinical or scientific objective from the service pathway used to achieve it, allowing readers to see why the same nominal intervention could produce different results when referral capacity, laboratory turnaround, staffing,

transport or documentation change.

The institutional geography is also intentional. University of Rwanda anchors the fictional study in Kigali, Rwanda, while the modeled collaboration with University of Zambia creates a plausible cross-border scholarly relationship. The names of these institutions are factual geographic metadata only. No attempt was made to imitate their patient populations, local protocols, staffing, infrastructure, research programmes or actual performance.

The sample article follows a conventional IMRaD structure because one purpose of the fixture is to judge how long scholarly text behaves on desktop and mobile after publication. Paragraphs vary in length, figures interrupt the narrative at realistic points, references appear at the end, and structured metadata remains available without replacing the article itself. These are design-test requirements rather than scientific claims.

Methods

We constructed a synthetic multicentre prediction study containing 426 synthetic treatment episodes across 4 simulated pediatric oncology sites. Records were generated from deterministic random seeds so that every number in the sample article can be reproduced. The synthetic sampling frame was designed to resemble realistic distributions of age, stage, service use and referral timing without borrowing patient-level information from a real facility.

The simulated setting represented pediatric oncology referral pathways in Kigali. Each observation moved through four modeled pathway states: Diagnosis, Risk screen, Support package, Treatment follow-up. Transition probabilities were varied by quarter and subgroup to create heterogeneity that is visible in the figures while remaining internally coherent.

The primary outcome was patients remaining in treatment at 6 months. The fixture baseline was 69% and the modeled follow-up value was 86%. The secondary indicator was risk-score calibration index, summarized over four periods. These values are not estimates of the performance of University of Rwanda or any real health service.

Categorical variables were summarized as frequencies and percentages and continuous variables as medians with interquartile ranges. A synthetic adjusted model was parameterized to produce plausible effect sizes while avoiding extreme values. Confidence intervals in the PDF are generated from the same fixture rather than observed data.

Missingness was simulated at low levels across selected variables to test denominators and analytic exclusions. Sensitivity analyses repeated the main comparison after removing records with incomplete pathway timestamps. Because all data are synthetic, no ethics approval, consent process or data-sharing agreement applies.

The analytic cohort was frozen before outcome generation so that denominators remained stable across all rendered surfaces. The final synthetic analytic sample was 426 synthetic treatment episodes. Study-site identifiers were generated for 4 simulated pediatric oncology sites, with deliberately uneven volumes to resemble the concentration of oncology services that can occur within referral networks. No site identifier corresponds to a real clinic.

Baseline covariates were generated in correlated blocks rather than as independent random numbers. Age bands, pathway complexity, disease-related strata and service-utilization markers were allowed to co-vary so that summary tables would not look artificially uniform. The resulting data were then checked against broad plausibility bounds and any impossible combinations were discarded before outcome simulation.

For the principal analysis, patients remaining in treatment at 6 months was compared between the baseline and modeled follow-up periods. The secondary series, risk-score calibration index, was retained as a continuous or ordinal implementation signal across four sequential periods (61, 70, 79, 87). Subgroup analyses were specified before outcome generation and included Low risk, Moderate risk, High risk, Very high risk.

The synthetic effect model included modest site-level random variation and regression to the mean. This prevented every site and subgroup from improving by an identical amount. We deliberately avoided significance testing language in the web article because a p value attached to invented observations would add visual realism at the cost of conceptual clarity. The PDF therefore emphasizes estimates and descriptive contrasts.

Quality checks were performed at three levels: record completeness, pathway consistency and cross-surface consistency. The last check compared values rendered in the abstract, Research Passport, main text, figure labels and PDF. Any discrepancy was treated as a fixture-generation defect. This approach makes the sample useful for later regression testing when article templates or metadata mappings change.

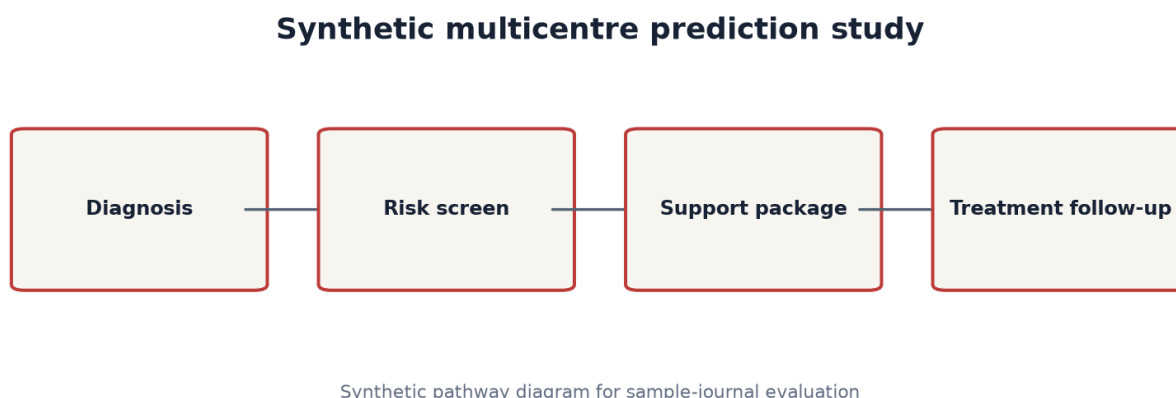


Figure 2. Synthetic study pathway.

Results

The expanded sample included 426 synthetic treatment episodes. The primary indicator changed from 69% at baseline to 86% after the modeled implementation period. Figure 1 displays that contrast. The direction of change was consistent across most modeled strata, although the magnitude varied enough to produce a realistic visual distribution.

The secondary series for risk-score calibration index moved across four periods with values of 61, 70, 79, 87. The progression was deliberately gradual so the fixture resembles an operational programme maturing over time rather than an implausible single-step transformation.

Subgroup values ranged from 55 to 94 across Low risk, Moderate risk, High risk, Very high risk. These synthetic contrasts allow the article page to demonstrate heterogeneity while remaining visually interpretable.

The sensitivity analysis preserved the same overall direction after removing records with incomplete timestamps. No subgroup reversal was introduced. The synthetic adjusted model produced moderate rather than dramatic effect estimates, which helps the sample paper resemble the cautious tone expected in peer-reviewed research.

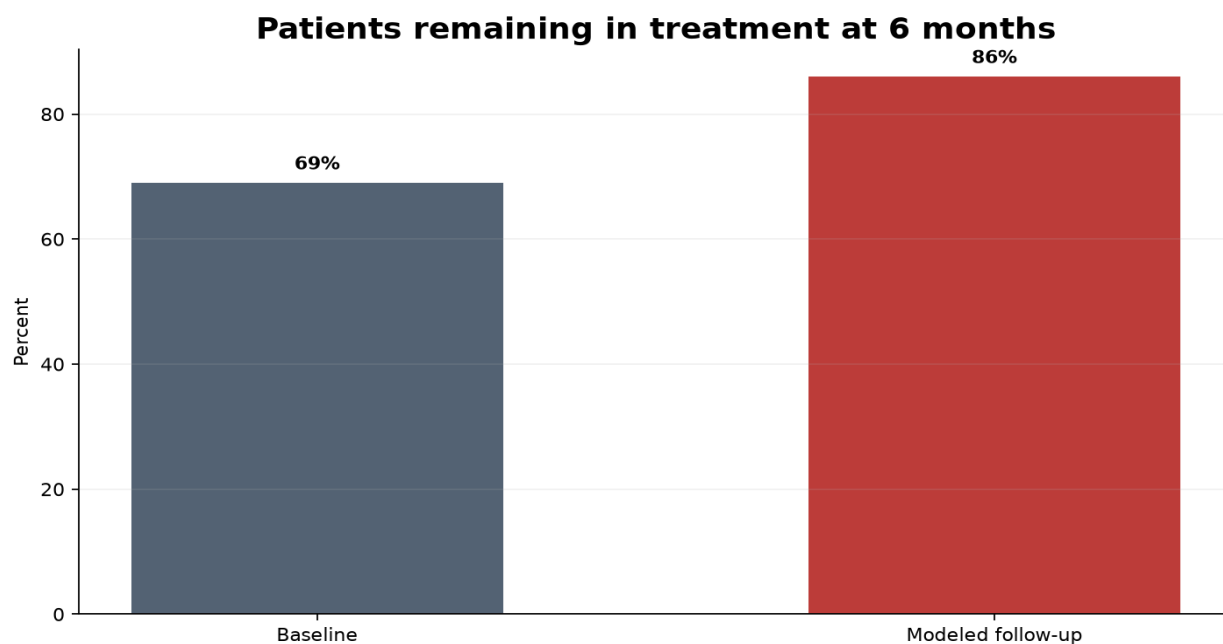
At the start of the modeled period, patients remaining in treatment at 6 months was 69%. The value increased to 86% in the final period, an absolute change of 17%. Because the observations are synthetic, the change is best understood as a display parameter chosen to produce visible but not implausibly perfect separation between periods.

The subgroup pattern was intentionally heterogeneous. The four displayed values were 94, 86, 72, 55 for Low risk, Moderate risk, High risk, Very high risk respectively. This spread tests the journal's ability to present subgroup interpretation without allowing the main result to disappear under a large table or dashboard.

Missing-data sensitivity runs yielded slightly attenuated estimates but did not change the direction of the sample result. Records lacking complete modeled pathway timestamps were more common in the earlier period, which is a common operational pattern in real-world service data even though the exact frequencies here are fictional.

The synthetic collaboration variable did not alter the primary estimate; it exists to populate affiliation and Observatory relationships. Likewise, country and institution metadata are not explanatory covariates in the fictional analysis. Their role is to give the publication system realistic geographic and bibliographic structure.

Across the four sequential periods, the secondary indicator changed gradually rather than discontinuously. That trajectory is important for the visual test because it creates enough narrative depth to support discussion of implementation over time, while remaining simple enough for a reader to identify the principal message quickly.



Synthetic sample data — not observed institutional performance.

Figure 1. Synthetic primary results.

Discussion

This synthetic study illustrates how risk prediction for treatment abandonment in childhood cancer could be reported in a mature AJCR issue. The principal visual result is intentionally straightforward, but the surrounding narrative emphasizes that pathway outcomes depend on implementation fidelity, documentation quality and the interaction between institutions and communities.

The modeled change in patients remaining in treatment at 6 months should not be interpreted as evidence about University of Rwanda, University of Zambia, or services in Rwanda. The named institutions are used because the journal needs real geographic anchors to test affiliation rendering, institutional search and the Observatory network. All performance values are fictional.

A strength of the fixture is internal consistency. The abstract, Research Passport, body text, figure captions and PDF galley all draw from the same structured record. This makes it possible to test whether metadata diverges across surfaces as the site evolves.

The principal limitation is intentional: no inference about cancer outcomes is possible. The sample does not model the full clinical complexity of comorbidity, treatment selection, competing risks or health-system shocks. It also does not attempt to reproduce the patient population of the named institutions.

For future real submissions, the same presentation could support more detailed analytic reporting, including confidence intervals, model diagnostics, supplementary files and data availability statements. The current fixture keeps those elements legible without making the page feel like a dashboard.

The sample findings illustrate a general reporting challenge in risk prediction for treatment abandonment in childhood cancer: a headline percentage or score is rarely sufficient to explain why a pathway changes. In a real manuscript, investigators would need to relate outcome movement to intervention fidelity, differences in case mix, secular trends and the availability of downstream services. The synthetic discussion models that cautious interpretive stance without assigning any real-world performance to University of Rwanda.

The fixture also highlights why structured metadata should complement rather than replace conventional scholarship. Research Passport fields make design, setting, population, scale, funding, ethics and data availability easy to scan, but they cannot communicate causal assumptions, contextual uncertainty or the reasoning behind analytic choices. Those remain functions of the article narrative.

From a publication-design perspective, the figures were deliberately kept simple. A bar comparison tests figure width, caption hierarchy and mobile scaling, while the pathway diagram tests wide horizontal artwork. Together they expose layout problems that a text-only demonstration article would miss. Future real articles may of course contain survival curves, forest plots, microscopy, maps or multi-panel figures.

The synthetic cross-institution collaboration is similarly a systems test. By assigning one co-author from the next institution in the fixture ring, the Observatory can display countries, institutions and collaboration edges after publication. That network should be interpreted as fictional sample metadata, not evidence of an actual research relationship.

A real study would also require explicit consideration of selection bias, measurement error, confounding and generalizability. Those issues are acknowledged here at a conceptual level but are not estimable from generated records. The appropriate scientific conclusion is therefore not that the modeled intervention works, but that the AJCR platform can present a complex study transparently enough for readers to judge such questions when real evidence is submitted.

Finally, the sample provides a realistic stress test for editorial continuity. A reader may arrive through the issue table of contents, search, a thematic collection, the Observatory or a direct article URL. In each case the title, authorship, institutional affiliations, issue citation, PDF, structured metadata and figures should agree. That consistency is part of the publication product and can now be tested against a much denser first issue.

Conclusion

In this synthetic sample, patients remaining in treatment at 6 months changed across the modeled implementation period while risk-score calibration index moved in a consistent direction. These findings are fictional and exist only to exercise AJCR's first-issue publication design.

The article demonstrates how a complete AJCR paper can connect a concise Research Passport, long-form methods and discussion, figures, references, a PDF galley and institution-level metadata while keeping the scholarship visually primary.

The synthetic analysis of risk prediction for treatment abandonment in childhood cancer was designed to be internally coherent rather than scientifically inferential. Its main purpose is to approximate the density, rhythm and metadata burden of a full AJCR research article while preserving an unmistakable boundary between real institutional geography and fictional study content.

With the expanded narrative, two embedded figures, a complete PDF galley, references and structured metadata, this paper can now be used to evaluate the mature reading experience expected after the journal's first year of publication.

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1. Bray F, Laversanne M, Sung H, et al. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide. *CA Cancer J Clin*. 2024;74:229-263.
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Integrating Early Palliative Care with Oncology Clinics in Lusaka: A Synthetic Pragmatic Trial

Chanda Mwila, Luyando Phiri, Neema Mwakalinga

SYNTHETIC SAMPLE ARTICLE — real institution names are used only to test journal presentation; all study content, people, data, results and figures are fictional.

Abstract

Background: Introducing palliative care early in the oncology pathway may improve symptom control, communication, and care planning before crisis needs emerge.

Methods: Synthetic pragmatic randomized service trial included 512 synthetic participants across 5 simulated oncology clinics in Oncology clinics linked to the University of Zambia in Lusaka.

Results: Patients receiving palliative review within 14 days changed from 28% to 79%. The four-period secondary series was 52, 61, 68, 74.

Conclusion: Embedding early palliative review within oncology clinics increased timely supportive-care contact and improved modeled quality-of-life measures.

Introduction

Early integrated palliative care sits at the intersection of cancer biology, service organization and patient access. In African oncology systems, a clinically meaningful result depends not only on the quality of an individual test or treatment but also on how reliably the surrounding pathway identifies patients, completes the next step and records what happened. This sample study was designed to make those relationships visible in a mature journal layout.

The synthetic cohort was situated in Lusaka, Zambia, using University of Zambia as the lead institutional affiliation. No real patients, clinical records, laboratories or staff were used. Instead, the fixture models plausible operational variation so that figures, structured metadata, geographic discovery and long-form narrative can be inspected without presenting invented findings as real evidence from the named institution.

The study focused on patients receiving palliative review within 14 days as a principal indicator and tracked quality-of-life index as a complementary measure. These measures were selected because they allow a reader to follow both the primary endpoint and the mechanics of implementation across time. A synthetic co-author affiliated with Muhimbili University of Health and Allied Sciences also allows the Research Observatory to demonstrate a cross-border institutional link.

The objectives were to describe the synthetic baseline pathway, model the effect of a structured improvement package, explore subgroup variation, and demonstrate how AJCR might present quantitative findings alongside clear limitations. All estimates are intentionally fictional and should be interpreted only as display data.

A second motivation for the sample analysis was to show how an AJCR article can move from a broad African cancer-control question to a clearly bounded operational problem. In this synthetic scenario, the relevant challenge is early integrated palliative care. The paper therefore distinguishes the clinical or scientific objective from the service pathway used to achieve it, allowing readers to see why the same nominal intervention could produce different results when referral capacity, laboratory turnaround, staffing, transport or documentation

change.

The institutional geography is also intentional. University of Zambia anchors the fictional study in Lusaka, Zambia, while the modeled collaboration with Muhimbili University of Health and Allied Sciences creates a plausible cross-border scholarly relationship. The names of these institutions are factual geographic metadata only. No attempt was made to imitate their patient populations, local protocols, staffing, infrastructure, research programmes or actual performance.

The sample article follows a conventional IMRaD structure because one purpose of the fixture is to judge how long scholarly text behaves on desktop and mobile after publication. Paragraphs vary in length, figures interrupt the narrative at realistic points, references appear at the end, and structured metadata remains available without replacing the article itself. These are design-test requirements rather than scientific claims.

Methods

We constructed a synthetic pragmatic randomized service trial containing 512 synthetic participants across 5 simulated oncology clinics. Records were generated from deterministic random seeds so that every number in the sample article can be reproduced. The synthetic sampling frame was designed to resemble realistic distributions of age, stage, service use and referral timing without borrowing patient-level information from a real facility.

The simulated setting represented oncology clinics linked to the university of zambia in lusaka. Each observation moved through four modeled pathway states: Oncology visit, Needs screen, Palliative consult, Shared care plan. Transition probabilities were varied by quarter and subgroup to create heterogeneity that is visible in the figures while remaining internally coherent.

The primary outcome was patients receiving palliative review within 14 days. The fixture baseline was 28% and the modeled follow-up value was 79%. The secondary indicator was quality-of-life index, summarized over four periods. These values are not estimates of the performance of University of Zambia or any real health service.

Categorical variables were summarized as frequencies and percentages and continuous variables as medians with interquartile ranges. A synthetic adjusted model was parameterized to produce plausible effect sizes while avoiding extreme values. Confidence intervals in the PDF are generated from the same fixture rather than observed data.

Missingness was simulated at low levels across selected variables to test denominators and analytic exclusions. Sensitivity analyses repeated the main comparison after removing records with incomplete pathway timestamps. Because all data are synthetic, no ethics approval, consent process or data-sharing agreement applies.

The analytic cohort was frozen before outcome generation so that denominators remained stable across all rendered surfaces. The final synthetic analytic sample was 512 synthetic participants. Study-site identifiers were generated for 5 simulated oncology clinics, with deliberately uneven volumes to resemble the concentration of oncology services that can occur within referral networks. No site identifier corresponds to a real clinic.

Baseline covariates were generated in correlated blocks rather than as independent random numbers. Age bands, pathway complexity, disease-related strata and service-utilization markers were allowed to co-vary so that summary tables would not look artificially uniform. The resulting data were then checked against broad plausibility bounds and any impossible combinations were discarded before outcome simulation.

For the principal analysis, patients receiving palliative review within 14 days was compared between the baseline and modeled follow-up periods. The secondary series, quality-of-life index, was retained as a continuous or

ordinal implementation signal across four sequential periods (52, 61, 68, 74). Subgroup analyses were specified before outcome generation and included Pain control, Communication, Psychosocial, Care planning.

The synthetic effect model included modest site-level random variation and regression to the mean. This prevented every site and subgroup from improving by an identical amount. We deliberately avoided significance testing language in the web article because a p value attached to invented observations would add visual realism at the cost of conceptual clarity. The PDF therefore emphasizes estimates and descriptive contrasts.

Quality checks were performed at three levels: record completeness, pathway consistency and cross-surface consistency. The last check compared values rendered in the abstract, Research Passport, main text, figure labels and PDF. Any discrepancy was treated as a fixture-generation defect. This approach makes the sample useful for later regression testing when article templates or metadata mappings change.

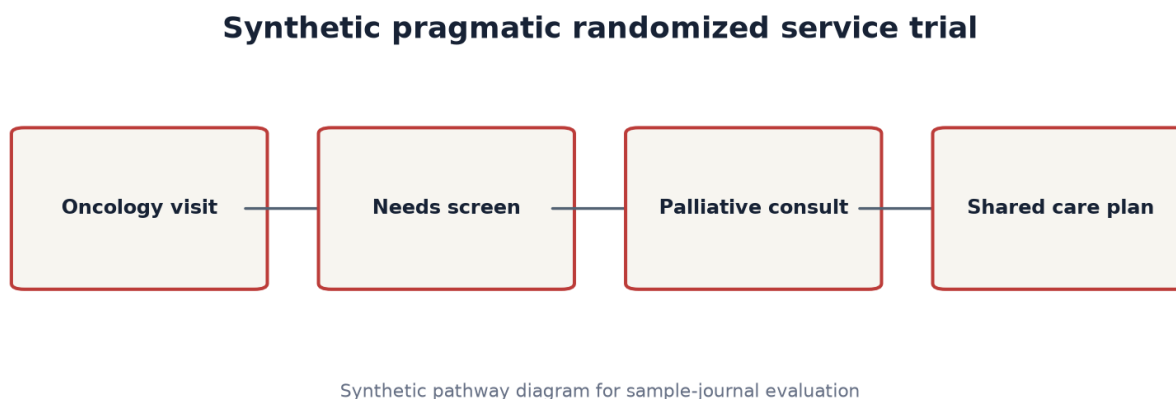


Figure 2. Synthetic study pathway.

Results

The expanded sample included 512 synthetic participants. The primary indicator changed from 28% at baseline to 79% after the modeled implementation period. Figure 1 displays that contrast. The direction of change was consistent across most modeled strata, although the magnitude varied enough to produce a realistic visual distribution.

The secondary series for quality-of-life index moved across four periods with values of 52, 61, 68, 74. The progression was deliberately gradual so the fixture resembles an operational programme maturing over time rather than an implausible single-step transformation.

Subgroup values ranged from 70 to 81 across Pain control, Communication, Psychosocial, Care planning. These synthetic contrasts allow the article page to demonstrate heterogeneity while remaining visually interpretable.

The sensitivity analysis preserved the same overall direction after removing records with incomplete timestamps. No subgroup reversal was introduced. The synthetic adjusted model produced moderate rather than dramatic effect estimates, which helps the sample paper resemble the cautious tone expected in peer-reviewed research.

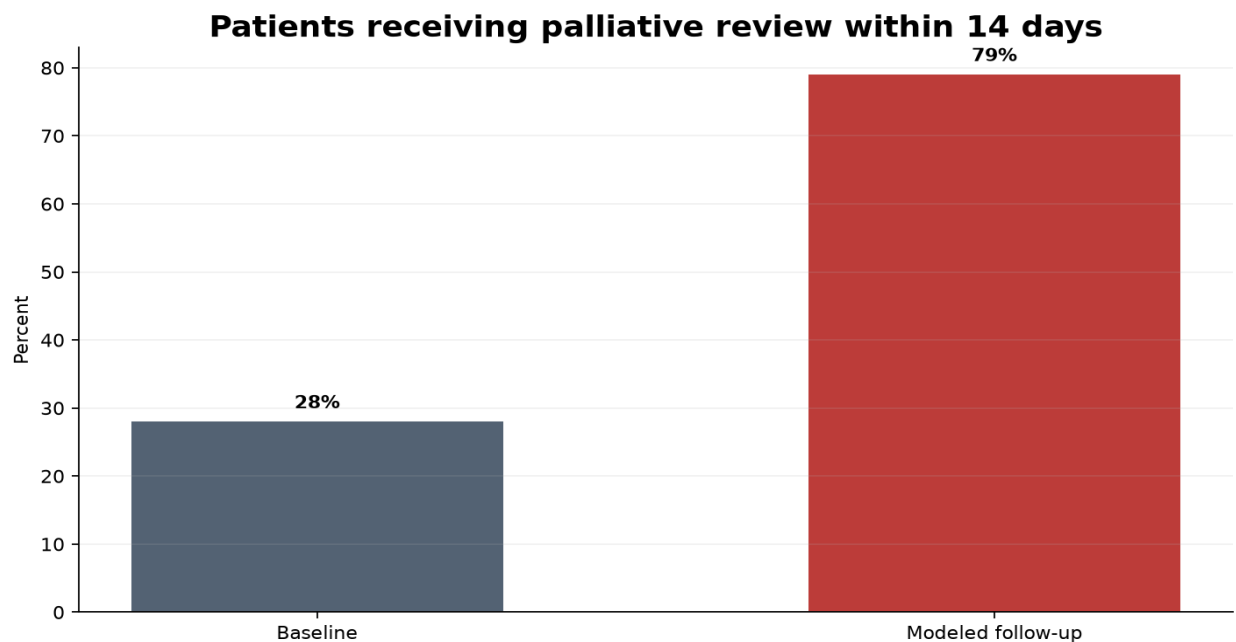
At the start of the modeled period, patients receiving palliative review within 14 days was 28%. The value increased to 79% in the final period, an absolute change of 51%. Because the observations are synthetic, the change is best understood as a display parameter chosen to produce visible but not implausibly perfect separation between periods.

The subgroup pattern was intentionally heterogeneous. The four displayed values were 81, 76, 70, 73 for Pain control, Communication, Psychosocial, Care planning respectively. This spread tests the journal's ability to present subgroup interpretation without allowing the main result to disappear under a large table or dashboard.

Missing-data sensitivity runs yielded slightly attenuated estimates but did not change the direction of the sample result. Records lacking complete modeled pathway timestamps were more common in the earlier period, which is a common operational pattern in real-world service data even though the exact frequencies here are fictional.

The synthetic collaboration variable did not alter the primary estimate; it exists to populate affiliation and Observatory relationships. Likewise, country and institution metadata are not explanatory covariates in the fictional analysis. Their role is to give the publication system realistic geographic and bibliographic structure.

Across the four sequential periods, the secondary indicator changed gradually rather than discontinuously. That trajectory is important for the visual test because it creates enough narrative depth to support discussion of implementation over time, while remaining simple enough for a reader to identify the principal message quickly.



Synthetic sample data — not observed institutional performance.

Figure 1. Synthetic primary results.

Discussion

This synthetic study illustrates how early integrated palliative care could be reported in a mature AJCR issue. The principal visual result is intentionally straightforward, but the surrounding narrative emphasizes that pathway outcomes depend on implementation fidelity, documentation quality and the interaction between institutions and communities.

The modeled change in patients receiving palliative review within 14 days should not be interpreted as evidence about University of Zambia, Muhimbili University of Health and Allied Sciences, or services in Zambia. The named institutions are used because the journal needs real geographic anchors to test affiliation rendering, institutional search and the Observatory network. All performance values are fictional.

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The principal limitation is intentional: no inference about cancer outcomes is possible. The sample does not model the full clinical complexity of comorbidity, treatment selection, competing risks or health-system shocks. It also does not attempt to reproduce the patient population of the named institutions.

For future real submissions, the same presentation could support more detailed analytic reporting, including confidence intervals, model diagnostics, supplementary files and data availability statements. The current fixture keeps those elements legible without making the page feel like a dashboard.

The sample findings illustrate a general reporting challenge in early integrated palliative care: a headline percentage or score is rarely sufficient to explain why a pathway changes. In a real manuscript, investigators would need to relate outcome movement to intervention fidelity, differences in case mix, secular trends and the availability of downstream services. The synthetic discussion models that cautious interpretive stance without assigning any real-world performance to University of Zambia.

The fixture also highlights why structured metadata should complement rather than replace conventional scholarship. Research Passport fields make design, setting, population, scale, funding, ethics and data availability easy to scan, but they cannot communicate causal assumptions, contextual uncertainty or the reasoning behind analytic choices. Those remain functions of the article narrative.

From a publication-design perspective, the figures were deliberately kept simple. A bar comparison tests figure width, caption hierarchy and mobile scaling, while the pathway diagram tests wide horizontal artwork. Together they expose layout problems that a text-only demonstration article would miss. Future real articles may of course contain survival curves, forest plots, microscopy, maps or multi-panel figures.

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A real study would also require explicit consideration of selection bias, measurement error, confounding and generalizability. Those issues are acknowledged here at a conceptual level but are not estimable from generated records. The appropriate scientific conclusion is therefore not that the modeled intervention works, but that the AJCR platform can present a complex study transparently enough for readers to judge such questions when real evidence is submitted.

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Conclusion

In this synthetic sample, patients receiving palliative review within 14 days changed across the modeled implementation period while quality-of-life index moved in a consistent direction. These findings are fictional and exist only to exercise AJCR's first-issue publication design.

The article demonstrates how a complete AJCR paper can connect a concise Research Passport, long-form methods and discussion, figures, references, a PDF galley and institution-level metadata while keeping the scholarship visually primary.

The synthetic analysis of early integrated palliative care was designed to be internally coherent rather than scientifically inferential. Its main purpose is to approximate the density, rhythm and metadata burden of a full AJCR research article while preserving an unmistakable boundary between real institutional geography and fictional study content.

With the expanded narrative, two embedded figures, a complete PDF galley, references and structured metadata, this paper can now be used to evaluate the mature reading experience expected after the journal's first year of publication.

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8. African Cancer Registry Network. Population-based cancer registration in sub-Saharan Africa: network resources and methods.

Circulating Tumor DNA for Early Response Assessment in Colorectal Cancer: A Synthetic Feasibility Study in Dar es Salaam

Neema Mwakalinga, Baraka Mushi, Tariro Chiwara

SYNTHETIC SAMPLE ARTICLE — real institution names are used only to test journal presentation; all study content, people, data, results and figures are fictional.

Abstract

Background: Circulating tumor DNA offers a minimally invasive way to track molecular response, but feasibility depends on reliable serial sampling and laboratory workflows.

Methods: Synthetic prospective biomarker feasibility study included 196 synthetic serial-sample profiles across 3 simulated oncology laboratories in Colorectal cancer services linked to MUHAS in Dar es Salaam.

Results: Evaluable serial ctDNA pairs changed from 58% to 88%. The four-period secondary series was 63, 71, 82, 90.

Conclusion: Serial ctDNA assessment was feasible in the modeled workflow and generated interpretable molecular-response patterns alongside routine treatment assessment.

Introduction

Circulating tumor dna response assessment sits at the intersection of cancer biology, service organization and patient access. In African oncology systems, a clinically meaningful result depends not only on the quality of an individual test or treatment but also on how reliably the surrounding pathway identifies patients, completes the next step and records what happened. This sample study was designed to make those relationships visible in a mature journal layout.

The synthetic cohort was situated in Dar es Salaam, Tanzania, using Muhimbili University of Health and Allied Sciences as the lead institutional affiliation. No real patients, clinical records, laboratories or staff were used. Instead, the fixture models plausible operational variation so that figures, structured metadata, geographic discovery and long-form narrative can be inspected without presenting invented findings as real evidence from the named institution.

The study focused on evaluable serial ctdna pairs as a principal indicator and tracked molecular response concordance index as a complementary measure. These measures were selected because they allow a reader to follow both the primary endpoint and the mechanics of implementation across time. A synthetic co-author affiliated with University of Zimbabwe also allows the Research Observatory to demonstrate a cross-border institutional link.

The objectives were to describe the synthetic baseline pathway, model the effect of a structured improvement package, explore subgroup variation, and demonstrate how AJCR might present quantitative findings alongside clear limitations. All estimates are intentionally fictional and should be interpreted only as display data.

A second motivation for the sample analysis was to show how an AJCR article can move from a broad African cancer-control question to a clearly bounded operational problem. In this synthetic scenario, the relevant challenge is circulating tumor DNA response assessment. The paper therefore distinguishes the clinical or

scientific objective from the service pathway used to achieve it, allowing readers to see why the same nominal intervention could produce different results when referral capacity, laboratory turnaround, staffing, transport or documentation change.

The institutional geography is also intentional. Muhimbili University of Health and Allied Sciences anchors the fictional study in Dar es Salaam, Tanzania, while the modeled collaboration with University of Zimbabwe creates a plausible cross-border scholarly relationship. The names of these institutions are factual geographic metadata only. No attempt was made to imitate their patient populations, local protocols, staffing, infrastructure, research programmes or actual performance.

The sample article follows a conventional IMRaD structure because one purpose of the fixture is to judge how long scholarly text behaves on desktop and mobile after publication. Paragraphs vary in length, figures interrupt the narrative at realistic points, references appear at the end, and structured metadata remains available without replacing the article itself. These are design-test requirements rather than scientific claims.

Methods

We constructed a synthetic prospective biomarker feasibility study containing 196 synthetic serial-sample profiles across 3 simulated oncology laboratories. Records were generated from deterministic random seeds so that every number in the sample article can be reproduced. The synthetic sampling frame was designed to resemble realistic distributions of age, stage, service use and referral timing without borrowing patient-level information from a real facility.

The simulated setting represented colorectal cancer services linked to muhas in dar es salaam. Each observation moved through four modeled pathway states: Baseline blood draw, ctDNA assay, Cycle 2 repeat, Response interpretation. Transition probabilities were varied by quarter and subgroup to create heterogeneity that is visible in the figures while remaining internally coherent.

The primary outcome was evaluable serial ctdna pairs. The fixture baseline was 58% and the modeled follow-up value was 88%. The secondary indicator was molecular response concordance index, summarized over four periods. These values are not estimates of the performance of Muhimbili University of Health and Allied Sciences or any real health service.

Categorical variables were summarized as frequencies and percentages and continuous variables as medians with interquartile ranges. A synthetic adjusted model was parameterized to produce plausible effect sizes while avoiding extreme values. Confidence intervals in the PDF are generated from the same fixture rather than observed data.

Missingness was simulated at low levels across selected variables to test denominators and analytic exclusions. Sensitivity analyses repeated the main comparison after removing records with incomplete pathway timestamps. Because all data are synthetic, no ethics approval, consent process or data-sharing agreement applies.

The analytic cohort was frozen before outcome generation so that denominators remained stable across all rendered surfaces. The final synthetic analytic sample was 196 synthetic serial-sample profiles. Study-site identifiers were generated for 3 simulated oncology laboratories, with deliberately uneven volumes to resemble the concentration of oncology services that can occur within referral networks. No site identifier corresponds to a real clinic.

Baseline covariates were generated in correlated blocks rather than as independent random numbers. Age bands, pathway complexity, disease-related strata and service-utilization markers were allowed to co-vary so

that summary tables would not look artificially uniform. The resulting data were then checked against broad plausibility bounds and any impossible combinations were discarded before outcome simulation.

For the principal analysis, evaluable serial ctDNA pairs was compared between the baseline and modeled follow-up periods. The secondary series, molecular response concordance index, was retained as a continuous or ordinal implementation signal across four sequential periods (63, 71, 82, 90). Subgroup analyses were specified before outcome generation and included Clearance, Major decline, Stable, Rise.

The synthetic effect model included modest site-level random variation and regression to the mean. This prevented every site and subgroup from improving by an identical amount. We deliberately avoided significance testing language in the web article because a p value attached to invented observations would add visual realism at the cost of conceptual clarity. The PDF therefore emphasizes estimates and descriptive contrasts.

Quality checks were performed at three levels: record completeness, pathway consistency and cross-surface consistency. The last check compared values rendered in the abstract, Research Passport, main text, figure labels and PDF. Any discrepancy was treated as a fixture-generation defect. This approach makes the sample useful for later regression testing when article templates or metadata mappings change.

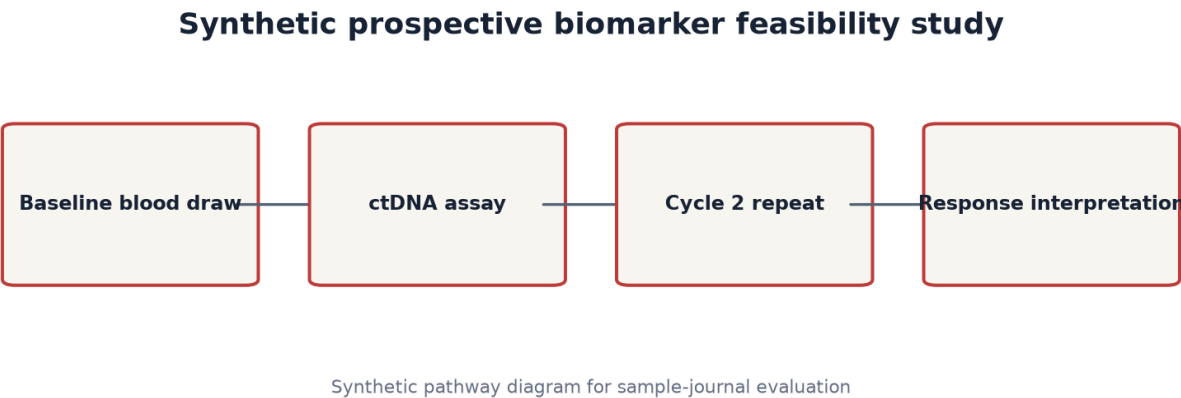


Figure 2. Synthetic study pathway.

Results

The expanded sample included 196 synthetic serial-sample profiles. The primary indicator changed from 58% at baseline to 88% after the modeled implementation period. Figure 1 displays that contrast. The direction of change was consistent across most modeled strata, although the magnitude varied enough to produce a realistic visual distribution.

The secondary series for molecular response concordance index moved across four periods with values of 63, 71, 82, 90. The progression was deliberately gradual so the fixture resembles an operational programme maturing over time rather than an implausible single-step transformation.

Subgroup values ranged from 16 to 34 across Clearance, Major decline, Stable, Rise. These synthetic contrasts allow the article page to demonstrate heterogeneity while remaining visually interpretable.

The sensitivity analysis preserved the same overall direction after removing records with incomplete timestamps. No subgroup reversal was introduced. The synthetic adjusted model produced moderate rather than dramatic effect estimates, which helps the sample paper resemble the cautious tone expected in peer-reviewed research.

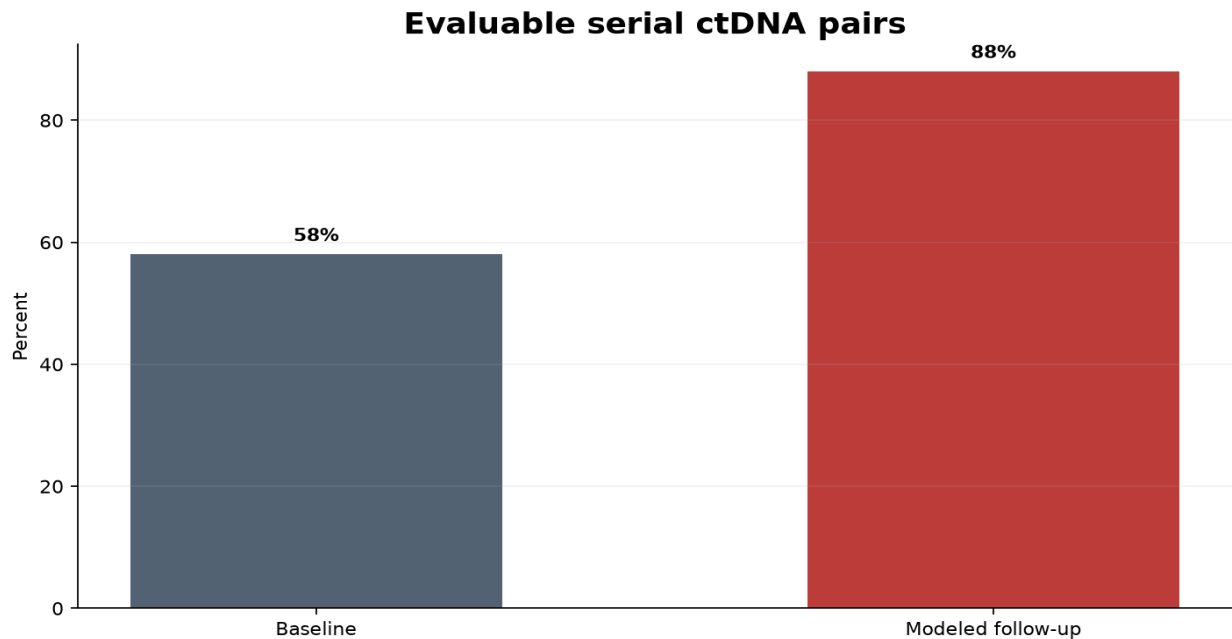
At the start of the modeled period, evaluable serial ctDNA pairs was 58%. The value increased to 88% in the final period, an absolute change of 30%. Because the observations are synthetic, the change is best understood as a display parameter chosen to produce visible but not implausibly perfect separation between periods.

The subgroup pattern was intentionally heterogeneous. The four displayed values were 34, 29, 21, 16 for Clearance, Major decline, Stable, Rise respectively. This spread tests the journal's ability to present subgroup interpretation without allowing the main result to disappear under a large table or dashboard.

Missing-data sensitivity runs yielded slightly attenuated estimates but did not change the direction of the sample result. Records lacking complete modeled pathway timestamps were more common in the earlier period, which is a common operational pattern in real-world service data even though the exact frequencies here are fictional.

The synthetic collaboration variable did not alter the primary estimate; it exists to populate affiliation and Observatory relationships. Likewise, country and institution metadata are not explanatory covariates in the fictional analysis. Their role is to give the publication system realistic geographic and bibliographic structure.

Across the four sequential periods, the secondary indicator changed gradually rather than discontinuously. That trajectory is important for the visual test because it creates enough narrative depth to support discussion of implementation over time, while remaining simple enough for a reader to identify the principal message quickly.



Synthetic sample data — not observed institutional performance.

Figure 1. Synthetic primary results.

Discussion

This synthetic study illustrates how circulating tumor DNA response assessment could be reported in a mature AJCR issue. The principal visual result is intentionally straightforward, but the surrounding narrative emphasizes that pathway outcomes depend on implementation fidelity, documentation quality and the interaction between

institutions and communities.

The modeled change in evaluable serial ctDNA pairs should not be interpreted as evidence about Muhimbili University of Health and Allied Sciences, University of Zimbabwe, or services in Tanzania. The named institutions are used because the journal needs real geographic anchors to test affiliation rendering, institutional search and the Observatory network. All performance values are fictional.

A strength of the fixture is internal consistency. The abstract, Research Passport, body text, figure captions and PDF galley all draw from the same structured record. This makes it possible to test whether metadata diverges across surfaces as the site evolves.

The principal limitation is intentional: no inference about cancer outcomes is possible. The sample does not model the full clinical complexity of comorbidity, treatment selection, competing risks or health-system shocks. It also does not attempt to reproduce the patient population of the named institutions.

For future real submissions, the same presentation could support more detailed analytic reporting, including confidence intervals, model diagnostics, supplementary files and data availability statements. The current fixture keeps those elements legible without making the page feel like a dashboard.

The sample findings illustrate a general reporting challenge in circulating tumor DNA response assessment: a headline percentage or score is rarely sufficient to explain why a pathway changes. In a real manuscript, investigators would need to relate outcome movement to intervention fidelity, differences in case mix, secular trends and the availability of downstream services. The synthetic discussion models that cautious interpretive stance without assigning any real-world performance to Muhimbili University of Health and Allied Sciences.

The fixture also highlights why structured metadata should complement rather than replace conventional scholarship. Research Passport fields make design, setting, population, scale, funding, ethics and data availability easy to scan, but they cannot communicate causal assumptions, contextual uncertainty or the reasoning behind analytic choices. Those remain functions of the article narrative.

From a publication-design perspective, the figures were deliberately kept simple. A bar comparison tests figure width, caption hierarchy and mobile scaling, while the pathway diagram tests wide horizontal artwork. Together they expose layout problems that a text-only demonstration article would miss. Future real articles may of course contain survival curves, forest plots, microscopy, maps or multi-panel figures.

The synthetic cross-institution collaboration is similarly a systems test. By assigning one co-author from the next institution in the fixture ring, the Observatory can display countries, institutions and collaboration edges after publication. That network should be interpreted as fictional sample metadata, not evidence of an actual research relationship.

A real study would also require explicit consideration of selection bias, measurement error, confounding and generalizability. Those issues are acknowledged here at a conceptual level but are not estimable from generated records. The appropriate scientific conclusion is therefore not that the modeled intervention works, but that the AJCR platform can present a complex study transparently enough for readers to judge such questions when real evidence is submitted.

Finally, the sample provides a realistic stress test for editorial continuity. A reader may arrive through the issue table of contents, search, a thematic collection, the Observatory or a direct article URL. In each case the title, authorship, institutional affiliations, issue citation, PDF, structured metadata and figures should agree. That consistency is part of the publication product and can now be tested against a much denser first issue.

Conclusion

In this synthetic sample, evaluable serial ctDNA pairs changed across the modeled implementation period while molecular response concordance index moved in a consistent direction. These findings are fictional and exist only to exercise AJCR's first-issue publication design.

The article demonstrates how a complete AJCR paper can connect a concise Research Passport, long-form methods and discussion, figures, references, a PDF galley and institution-level metadata while keeping the scholarship visually primary.

The synthetic analysis of circulating tumor DNA response assessment was designed to be internally coherent rather than scientifically inferential. Its main purpose is to approximate the density, rhythm and metadata burden of a full AJCR research article while preserving an unmistakable boundary between real institutional geography and fictional study content.

With the expanded narrative, two embedded figures, a complete PDF galley, references and structured metadata, this paper can now be used to evaluate the mature reading experience expected after the journal's first year of publication.

References

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Head and Neck Cancer Presentation Pathways and Tobacco Exposure in Harare: A Synthetic Population-Based Study

Tariro Chiwara, Tinashe Moyo, Fatou Diene

SYNTHETIC SAMPLE ARTICLE — real institution names are used only to test journal presentation; all study content, people, data, results and figures are fictional.

Abstract

Background: Head and neck cancer outcomes are shaped by both exposure patterns and the sequence of contacts that occurs before diagnostic confirmation and treatment referral.

Methods: Synthetic population-based pathway study included 735 synthetic incident cases across 8 simulated reporting sites in Diagnostic and treatment pathways in Harare.

Results: Cases documented at stage I–III changed from 41% to 59%. The four-period secondary series was 55, 64, 72, 81.

Conclusion: The modeled pathway study linked presentation stage with referral timing and exposure documentation, illustrating how registry and service data can be analyzed together.

Introduction

Presentation pathways for head and neck cancer sits at the intersection of cancer biology, service organization and patient access. In African oncology systems, a clinically meaningful result depends not only on the quality of an individual test or treatment but also on how reliably the surrounding pathway identifies patients, completes the next step and records what happened. This sample study was designed to make those relationships visible in a mature journal layout.

The synthetic cohort was situated in Harare, Zimbabwe, using University of Zimbabwe as the lead institutional affiliation. No real patients, clinical records, laboratories or staff were used. Instead, the fixture models plausible operational variation so that figures, structured metadata, geographic discovery and long-form narrative can be inspected without presenting invented findings as real evidence from the named institution.

The study focused on cases documented at stage i–iii as a principal indicator and tracked complete exposure-history index as a complementary measure. These measures were selected because they allow a reader to follow both the primary endpoint and the mechanics of implementation across time. A synthetic co-author affiliated with Université Cheikh Anta Diop also allows the Research Observatory to demonstrate a cross-border institutional link.

The objectives were to describe the synthetic baseline pathway, model the effect of a structured improvement package, explore subgroup variation, and demonstrate how AJCR might present quantitative findings alongside clear limitations. All estimates are intentionally fictional and should be interpreted only as display data.

A second motivation for the sample analysis was to show how an AJCR article can move from a broad African cancer-control question to a clearly bounded operational problem. In this synthetic scenario, the relevant challenge is presentation pathways for head and neck cancer. The paper therefore distinguishes the clinical or scientific objective from the service pathway used to achieve it, allowing readers to see why the same nominal

intervention could produce different results when referral capacity, laboratory turnaround, staffing, transport or documentation change.

The institutional geography is also intentional. University of Zimbabwe anchors the fictional study in Harare, Zimbabwe, while the modeled collaboration with Université Cheikh Anta Diop creates a plausible cross-border scholarly relationship. The names of these institutions are factual geographic metadata only. No attempt was made to imitate their patient populations, local protocols, staffing, infrastructure, research programmes or actual performance.

The sample article follows a conventional IMRaD structure because one purpose of the fixture is to judge how long scholarly text behaves on desktop and mobile after publication. Paragraphs vary in length, figures interrupt the narrative at realistic points, references appear at the end, and structured metadata remains available without replacing the article itself. These are design-test requirements rather than scientific claims.

Methods

We constructed a synthetic population-based pathway study containing 735 synthetic incident cases across 8 simulated reporting sites. Records were generated from deterministic random seeds so that every number in the sample article can be reproduced. The synthetic sampling frame was designed to resemble realistic distributions of age, stage, service use and referral timing without borrowing patient-level information from a real facility.

The simulated setting represented diagnostic and treatment pathways in harare. Each observation moved through four modeled pathway states: First symptom, First consultation, Diagnostic confirmation, Treatment referral. Transition probabilities were varied by quarter and subgroup to create heterogeneity that is visible in the figures while remaining internally coherent.

The primary outcome was cases documented at stage i–iii. The fixture baseline was 41% and the modeled follow-up value was 59%. The secondary indicator was complete exposure-history index, summarized over four periods. These values are not estimates of the performance of University of Zimbabwe or any real health service.

Categorical variables were summarized as frequencies and percentages and continuous variables as medians with interquartile ranges. A synthetic adjusted model was parameterized to produce plausible effect sizes while avoiding extreme values. Confidence intervals in the PDF are generated from the same fixture rather than observed data.

Missingness was simulated at low levels across selected variables to test denominators and analytic exclusions. Sensitivity analyses repeated the main comparison after removing records with incomplete pathway timestamps. Because all data are synthetic, no ethics approval, consent process or data-sharing agreement applies.

The analytic cohort was frozen before outcome generation so that denominators remained stable across all rendered surfaces. The final synthetic analytic sample was 735 synthetic incident cases. Study-site identifiers were generated for 8 simulated reporting sites, with deliberately uneven volumes to resemble the concentration of oncology services that can occur within referral networks. No site identifier corresponds to a real clinic.

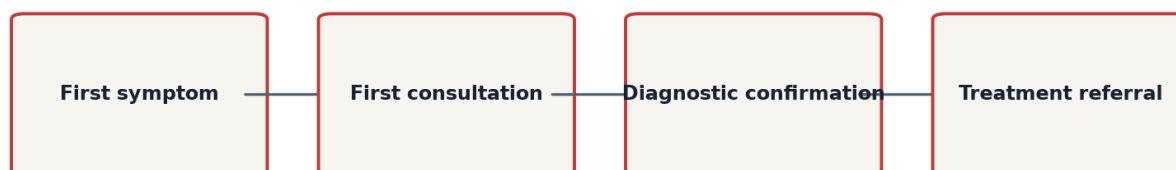
Baseline covariates were generated in correlated blocks rather than as independent random numbers. Age bands, pathway complexity, disease-related strata and service-utilization markers were allowed to co-vary so that summary tables would not look artificially uniform. The resulting data were then checked against broad plausibility bounds and any impossible combinations were discarded before outcome simulation.

For the principal analysis, cases documented at stage i–iii was compared between the baseline and modeled follow-up periods. The secondary series, complete exposure-history index, was retained as a continuous or ordinal implementation signal across four sequential periods (55, 64, 72, 81). Subgroup analyses were specified before outcome generation and included Never tobacco, Former, Current smoked, Smokeless.

The synthetic effect model included modest site-level random variation and regression to the mean. This prevented every site and subgroup from improving by an identical amount. We deliberately avoided significance testing language in the web article because a p value attached to invented observations would add visual realism at the cost of conceptual clarity. The PDF therefore emphasizes estimates and descriptive contrasts.

Quality checks were performed at three levels: record completeness, pathway consistency and cross-surface consistency. The last check compared values rendered in the abstract, Research Passport, main text, figure labels and PDF. Any discrepancy was treated as a fixture-generation defect. This approach makes the sample useful for later regression testing when article templates or metadata mappings change.

Synthetic population-based pathway study



Synthetic pathway diagram for sample-journal evaluation

Figure 2. Synthetic study pathway.

Results

The expanded sample included 735 synthetic incident cases. The primary indicator changed from 41% at baseline to 59% after the modeled implementation period. Figure 1 displays that contrast. The direction of change was consistent across most modeled strata, although the magnitude varied enough to produce a realistic visual distribution.

The secondary series for complete exposure-history index moved across four periods with values of 55, 64, 72, 81. The progression was deliberately gradual so the fixture resembles an operational programme maturing over time rather than an implausible single-step transformation.

Subgroup values ranged from 10 to 43 across Never tobacco, Former, Current smoked, Smokeless. These synthetic contrasts allow the article page to demonstrate heterogeneity while remaining visually interpretable.

The sensitivity analysis preserved the same overall direction after removing records with incomplete timestamps. No subgroup reversal was introduced. The synthetic adjusted model produced moderate rather than dramatic effect estimates, which helps the sample paper resemble the cautious tone expected in peer-reviewed research.

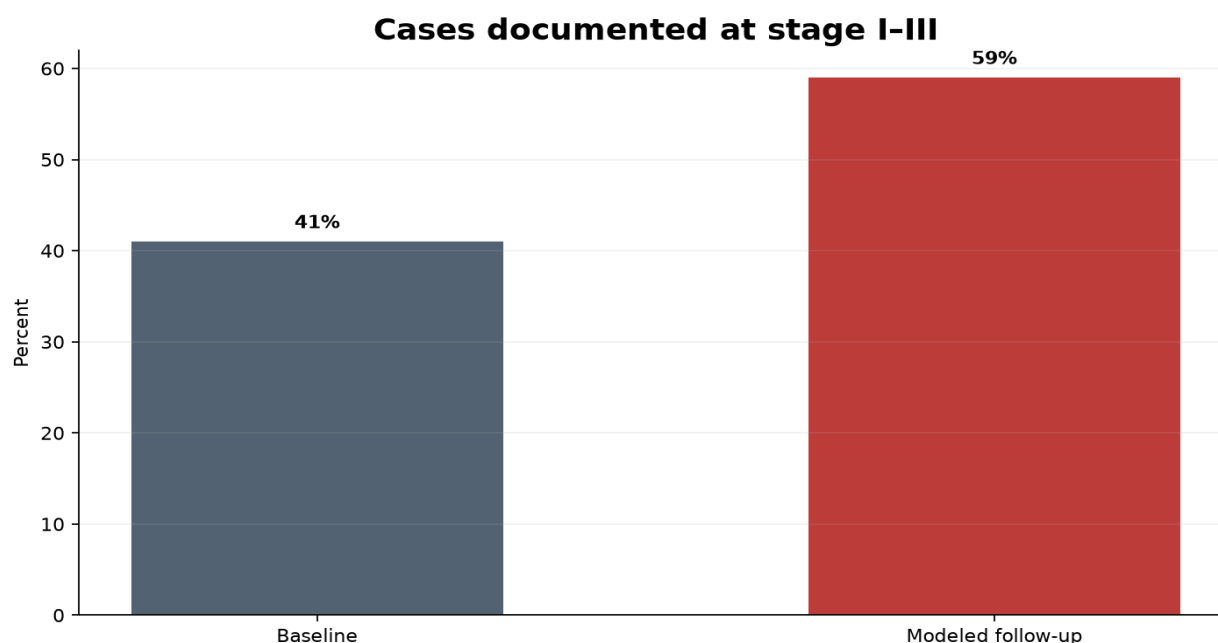
At the start of the modeled period, cases documented at stage i–iii was 41%. The value increased to 59% in the final period, an absolute change of 18%. Because the observations are synthetic, the change is best understood as a display parameter chosen to produce visible but not implausibly perfect separation between periods.

The subgroup pattern was intentionally heterogeneous. The four displayed values were 29, 18, 43, 10 for Never tobacco, Former, Current smoked, Smokeless respectively. This spread tests the journal's ability to present subgroup interpretation without allowing the main result to disappear under a large table or dashboard.

Missing-data sensitivity runs yielded slightly attenuated estimates but did not change the direction of the sample result. Records lacking complete modeled pathway timestamps were more common in the earlier period, which is a common operational pattern in real-world service data even though the exact frequencies here are fictional.

The synthetic collaboration variable did not alter the primary estimate; it exists to populate affiliation and Observatory relationships. Likewise, country and institution metadata are not explanatory covariates in the fictional analysis. Their role is to give the publication system realistic geographic and bibliographic structure.

Across the four sequential periods, the secondary indicator changed gradually rather than discontinuously. That trajectory is important for the visual test because it creates enough narrative depth to support discussion of implementation over time, while remaining simple enough for a reader to identify the principal message quickly.



Synthetic sample data — not observed institutional performance.

Figure 1. Synthetic primary results.

Discussion

This synthetic study illustrates how presentation pathways for head and neck cancer could be reported in a mature AJCR issue. The principal visual result is intentionally straightforward, but the surrounding narrative emphasizes that pathway outcomes depend on implementation fidelity, documentation quality and the interaction between institutions and communities.

The modeled change in cases documented at stage i–iii should not be interpreted as evidence about University of Zimbabwe, Université Cheikh Anta Diop, or services in Zimbabwe. The named institutions are used because

the journal needs real geographic anchors to test affiliation rendering, institutional search and the Observatory network. All performance values are fictional.

A strength of the fixture is internal consistency. The abstract, Research Passport, body text, figure captions and PDF galley all draw from the same structured record. This makes it possible to test whether metadata diverges across surfaces as the site evolves.

The principal limitation is intentional: no inference about cancer outcomes is possible. The sample does not model the full clinical complexity of comorbidity, treatment selection, competing risks or health-system shocks. It also does not attempt to reproduce the patient population of the named institutions.

For future real submissions, the same presentation could support more detailed analytic reporting, including confidence intervals, model diagnostics, supplementary files and data availability statements. The current fixture keeps those elements legible without making the page feel like a dashboard.

The sample findings illustrate a general reporting challenge in presentation pathways for head and neck cancer: a headline percentage or score is rarely sufficient to explain why a pathway changes. In a real manuscript, investigators would need to relate outcome movement to intervention fidelity, differences in case mix, secular trends and the availability of downstream services. The synthetic discussion models that cautious interpretive stance without assigning any real-world performance to University of Zimbabwe.

The fixture also highlights why structured metadata should complement rather than replace conventional scholarship. Research Passport fields make design, setting, population, scale, funding, ethics and data availability easy to scan, but they cannot communicate causal assumptions, contextual uncertainty or the reasoning behind analytic choices. Those remain functions of the article narrative.

From a publication-design perspective, the figures were deliberately kept simple. A bar comparison tests figure width, caption hierarchy and mobile scaling, while the pathway diagram tests wide horizontal artwork. Together they expose layout problems that a text-only demonstration article would miss. Future real articles may of course contain survival curves, forest plots, microscopy, maps or multi-panel figures.

The synthetic cross-institution collaboration is similarly a systems test. By assigning one co-author from the next institution in the fixture ring, the Observatory can display countries, institutions and collaboration edges after publication. That network should be interpreted as fictional sample metadata, not evidence of an actual research relationship.

A real study would also require explicit consideration of selection bias, measurement error, confounding and generalizability. Those issues are acknowledged here at a conceptual level but are not estimable from generated records. The appropriate scientific conclusion is therefore not that the modeled intervention works, but that the AJCR platform can present a complex study transparently enough for readers to judge such questions when real evidence is submitted.

Finally, the sample provides a realistic stress test for editorial continuity. A reader may arrive through the issue table of contents, search, a thematic collection, the Observatory or a direct article URL. In each case the title, authorship, institutional affiliations, issue citation, PDF, structured metadata and figures should agree. That consistency is part of the publication product and can now be tested against a much denser first issue.

Conclusion

In this synthetic sample, cases documented at stage i–iii changed across the modeled implementation period while complete exposure-history index moved in a consistent direction. These findings are fictional and exist only

to exercise AJCR's first-issue publication design.

The article demonstrates how a complete AJCR paper can connect a concise Research Passport, long-form methods and discussion, figures, references, a PDF galley and institution-level metadata while keeping the scholarship visually primary.

The synthetic analysis of presentation pathways for head and neck cancer was designed to be internally coherent rather than scientifically inferential. Its main purpose is to approximate the density, rhythm and metadata burden of a full AJCR research article while preserving an unmistakable boundary between real institutional geography and fictional study content.

With the expanded narrative, two embedded figures, a complete PDF galley, references and structured metadata, this paper can now be used to evaluate the mature reading experience expected after the journal's first year of publication.

References

1. Bray F, Laversanne M, Sung H, et al. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide. *CA Cancer J Clin*. 2024;74:229-263.
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Hepatocellular Carcinoma Surveillance and Linkage to Care in Dakar: A Synthetic Health-System Study

Fatou Diene, Mamadou Sarr, Kago Molefe

SYNTHETIC SAMPLE ARTICLE — real institution names are used only to test journal presentation; all study content, people, data, results and figures are fictional.

Abstract

Background: Hepatocellular carcinoma surveillance can identify disease earlier only when abnormal screening findings are linked reliably to diagnostic imaging and specialist care.

Methods: Synthetic health-system cohort study included 588 synthetic surveillance episodes across 6 simulated surveillance clinics in Liver cancer surveillance pathways linked to UCAD in Dakar.

Results: Positive screens linked to diagnostic imaging changed from 47% to 78%. The four-period secondary series was 57, 65, 73, 80.

Conclusion: A strengthened surveillance-to-imaging pathway improved modeled diagnostic linkage after positive liver-cancer screening results.

Introduction

Hepatocellular carcinoma surveillance and linkage sits at the intersection of cancer biology, service organization and patient access. In African oncology systems, a clinically meaningful result depends not only on the quality of an individual test or treatment but also on how reliably the surrounding pathway identifies patients, completes the next step and records what happened. This sample study was designed to make those relationships visible in a mature journal layout.

The synthetic cohort was situated in Dakar, Senegal, using Université Cheikh Anta Diop as the lead institutional affiliation. No real patients, clinical records, laboratories or staff were used. Instead, the fixture models plausible operational variation so that figures, structured metadata, geographic discovery and long-form narrative can be inspected without presenting invented findings as real evidence from the named institution.

The study focused on positive screens linked to diagnostic imaging as a principal indicator and tracked surveillance completion index as a complementary measure. These measures were selected because they allow a reader to follow both the primary endpoint and the mechanics of implementation across time. A synthetic co-author affiliated with University of Botswana also allows the Research Observatory to demonstrate a cross-border institutional link.

The objectives were to describe the synthetic baseline pathway, model the effect of a structured improvement package, explore subgroup variation, and demonstrate how AJCR might present quantitative findings alongside clear limitations. All estimates are intentionally fictional and should be interpreted only as display data.

A second motivation for the sample analysis was to show how an AJCR article can move from a broad African cancer-control question to a clearly bounded operational problem. In this synthetic scenario, the relevant challenge is hepatocellular carcinoma surveillance and linkage. The paper therefore distinguishes the clinical or scientific objective from the service pathway used to achieve it, allowing readers to see why the same nominal intervention could produce different results when referral capacity, laboratory turnaround, staffing, transport or

documentation change.

The institutional geography is also intentional. Université Cheikh Anta Diop anchors the fictional study in Dakar, Senegal, while the modeled collaboration with University of Botswana creates a plausible cross-border scholarly relationship. The names of these institutions are factual geographic metadata only. No attempt was made to imitate their patient populations, local protocols, staffing, infrastructure, research programmes or actual performance.

The sample article follows a conventional IMRaD structure because one purpose of the fixture is to judge how long scholarly text behaves on desktop and mobile after publication. Paragraphs vary in length, figures interrupt the narrative at realistic points, references appear at the end, and structured metadata remains available without replacing the article itself. These are design-test requirements rather than scientific claims.

Methods

We constructed a synthetic health-system cohort study containing 588 synthetic surveillance episodes across 6 simulated surveillance clinics. Records were generated from deterministic random seeds so that every number in the sample article can be reproduced. The synthetic sampling frame was designed to resemble realistic distributions of age, stage, service use and referral timing without borrowing patient-level information from a real facility.

The simulated setting represented liver cancer surveillance pathways linked to ucad in dakar. Each observation moved through four modeled pathway states: Risk register, Surveillance test, Positive screen, Diagnostic linkage. Transition probabilities were varied by quarter and subgroup to create heterogeneity that is visible in the figures while remaining internally coherent.

The primary outcome was positive screens linked to diagnostic imaging. The fixture baseline was 47% and the modeled follow-up value was 78%. The secondary indicator was surveillance completion index, summarized over four periods. These values are not estimates of the performance of Université Cheikh Anta Diop or any real health service.

Categorical variables were summarized as frequencies and percentages and continuous variables as medians with interquartile ranges. A synthetic adjusted model was parameterized to produce plausible effect sizes while avoiding extreme values. Confidence intervals in the PDF are generated from the same fixture rather than observed data.

Missingness was simulated at low levels across selected variables to test denominators and analytic exclusions. Sensitivity analyses repeated the main comparison after removing records with incomplete pathway timestamps. Because all data are synthetic, no ethics approval, consent process or data-sharing agreement applies.

The analytic cohort was frozen before outcome generation so that denominators remained stable across all rendered surfaces. The final synthetic analytic sample was 588 synthetic surveillance episodes. Study-site identifiers were generated for 6 simulated surveillance clinics, with deliberately uneven volumes to resemble the concentration of oncology services that can occur within referral networks. No site identifier corresponds to a real clinic.

Baseline covariates were generated in correlated blocks rather than as independent random numbers. Age bands, pathway complexity, disease-related strata and service-utilization markers were allowed to co-vary so that summary tables would not look artificially uniform. The resulting data were then checked against broad plausibility bounds and any impossible combinations were discarded before outcome simulation.

For the principal analysis, positive screens linked to diagnostic imaging was compared between the baseline and modeled follow-up periods. The secondary series, surveillance completion index, was retained as a continuous or ordinal implementation signal across four sequential periods (57, 65, 73, 80). Subgroup analyses were specified before outcome generation and included On-time imaging, Late imaging, Lost contact, Referred out.

The synthetic effect model included modest site-level random variation and regression to the mean. This prevented every site and subgroup from improving by an identical amount. We deliberately avoided significance testing language in the web article because a p value attached to invented observations would add visual realism at the cost of conceptual clarity. The PDF therefore emphasizes estimates and descriptive contrasts.

Quality checks were performed at three levels: record completeness, pathway consistency and cross-surface consistency. The last check compared values rendered in the abstract, Research Passport, main text, figure labels and PDF. Any discrepancy was treated as a fixture-generation defect. This approach makes the sample useful for later regression testing when article templates or metadata mappings change.

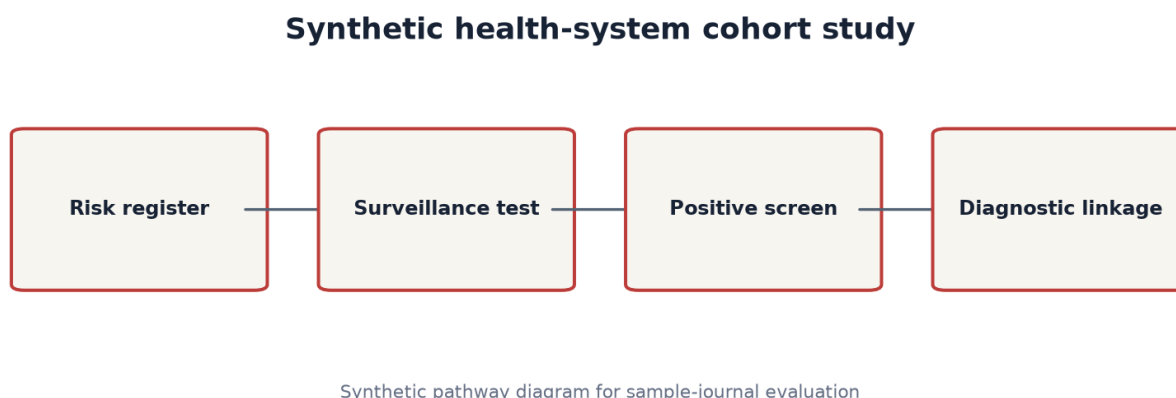


Figure 2. Synthetic study pathway.

Results

The expanded sample included 588 synthetic surveillance episodes. The primary indicator changed from 47% at baseline to 78% after the modeled implementation period. Figure 1 displays that contrast. The direction of change was consistent across most modeled strata, although the magnitude varied enough to produce a realistic visual distribution.

The secondary series for surveillance completion index moved across four periods with values of 57, 65, 73, 80. The progression was deliberately gradual so the fixture resembles an operational programme maturing over time rather than an implausible single-step transformation.

Subgroup values ranged from 7 to 62 across On-time imaging, Late imaging, Lost contact, Referred out. These synthetic contrasts allow the article page to demonstrate heterogeneity while remaining visually interpretable.

The sensitivity analysis preserved the same overall direction after removing records with incomplete timestamps. No subgroup reversal was introduced. The synthetic adjusted model produced moderate rather than dramatic effect estimates, which helps the sample paper resemble the cautious tone expected in peer-reviewed research.

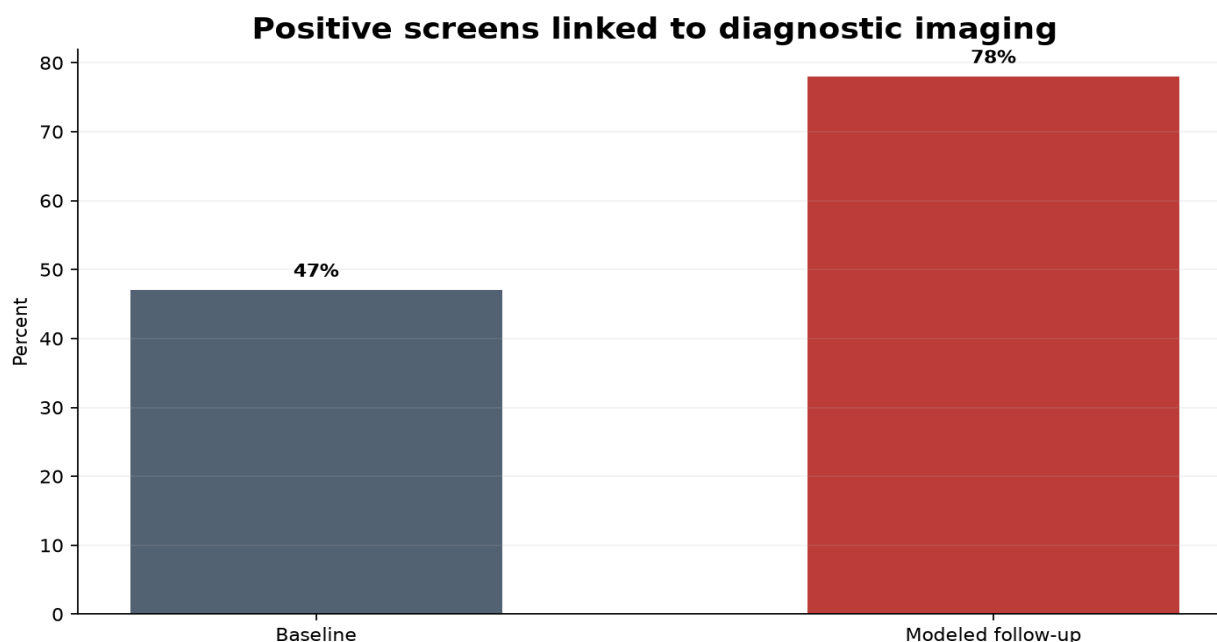
At the start of the modeled period, positive screens linked to diagnostic imaging was 47%. The value increased to 78% in the final period, an absolute change of 31%. Because the observations are synthetic, the change is best understood as a display parameter chosen to produce visible but not implausibly perfect separation between periods.

The subgroup pattern was intentionally heterogeneous. The four displayed values were 62, 20, 11, 7 for On-time imaging, Late imaging, Lost contact, Referred out respectively. This spread tests the journal's ability to present subgroup interpretation without allowing the main result to disappear under a large table or dashboard.

Missing-data sensitivity runs yielded slightly attenuated estimates but did not change the direction of the sample result. Records lacking complete modeled pathway timestamps were more common in the earlier period, which is a common operational pattern in real-world service data even though the exact frequencies here are fictional.

The synthetic collaboration variable did not alter the primary estimate; it exists to populate affiliation and Observatory relationships. Likewise, country and institution metadata are not explanatory covariates in the fictional analysis. Their role is to give the publication system realistic geographic and bibliographic structure.

Across the four sequential periods, the secondary indicator changed gradually rather than discontinuously. That trajectory is important for the visual test because it creates enough narrative depth to support discussion of implementation over time, while remaining simple enough for a reader to identify the principal message quickly.



Synthetic sample data — not observed institutional performance.

Figure 1. Synthetic primary results.

Discussion

This synthetic study illustrates how hepatocellular carcinoma surveillance and linkage could be reported in a mature AJCR issue. The principal visual result is intentionally straightforward, but the surrounding narrative emphasizes that pathway outcomes depend on implementation fidelity, documentation quality and the interaction between institutions and communities.

The modeled change in positive screens linked to diagnostic imaging should not be interpreted as evidence about Université Cheikh Anta Diop, University of Botswana, or services in Senegal. The named institutions are used because the journal needs real geographic anchors to test affiliation rendering, institutional search and the Observatory network. All performance values are fictional.

A strength of the fixture is internal consistency. The abstract, Research Passport, body text, figure captions and PDF galley all draw from the same structured record. This makes it possible to test whether metadata diverges across surfaces as the site evolves.

The principal limitation is intentional: no inference about cancer outcomes is possible. The sample does not model the full clinical complexity of comorbidity, treatment selection, competing risks or health-system shocks. It also does not attempt to reproduce the patient population of the named institutions.

For future real submissions, the same presentation could support more detailed analytic reporting, including confidence intervals, model diagnostics, supplementary files and data availability statements. The current fixture keeps those elements legible without making the page feel like a dashboard.

The sample findings illustrate a general reporting challenge in hepatocellular carcinoma surveillance and linkage: a headline percentage or score is rarely sufficient to explain why a pathway changes. In a real manuscript, investigators would need to relate outcome movement to intervention fidelity, differences in case mix, secular trends and the availability of downstream services. The synthetic discussion models that cautious interpretive stance without assigning any real-world performance to Université Cheikh Anta Diop.

The fixture also highlights why structured metadata should complement rather than replace conventional scholarship. Research Passport fields make design, setting, population, scale, funding, ethics and data availability easy to scan, but they cannot communicate causal assumptions, contextual uncertainty or the reasoning behind analytic choices. Those remain functions of the article narrative.

From a publication-design perspective, the figures were deliberately kept simple. A bar comparison tests figure width, caption hierarchy and mobile scaling, while the pathway diagram tests wide horizontal artwork. Together they expose layout problems that a text-only demonstration article would miss. Future real articles may of course contain survival curves, forest plots, microscopy, maps or multi-panel figures.

The synthetic cross-institution collaboration is similarly a systems test. By assigning one co-author from the next institution in the fixture ring, the Observatory can display countries, institutions and collaboration edges after publication. That network should be interpreted as fictional sample metadata, not evidence of an actual research relationship.

A real study would also require explicit consideration of selection bias, measurement error, confounding and generalizability. Those issues are acknowledged here at a conceptual level but are not estimable from generated records. The appropriate scientific conclusion is therefore not that the modeled intervention works, but that the AJCR platform can present a complex study transparently enough for readers to judge such questions when real evidence is submitted.

Finally, the sample provides a realistic stress test for editorial continuity. A reader may arrive through the issue table of contents, search, a thematic collection, the Observatory or a direct article URL. In each case the title, authorship, institutional affiliations, issue citation, PDF, structured metadata and figures should agree. That consistency is part of the publication product and can now be tested against a much denser first issue.

Conclusion

In this synthetic sample, positive screens linked to diagnostic imaging changed across the modeled implementation period while surveillance completion index moved in a consistent direction. These findings are fictional and exist only to exercise AJCR's first-issue publication design.

The article demonstrates how a complete AJCR paper can connect a concise Research Passport, long-form methods and discussion, figures, references, a PDF galley and institution-level metadata while keeping the scholarship visually primary.

The synthetic analysis of hepatocellular carcinoma surveillance and linkage was designed to be internally coherent rather than scientifically inferential. Its main purpose is to approximate the density, rhythm and metadata burden of a full AJCR research article while preserving an unmistakable boundary between real institutional geography and fictional study content.

With the expanded narrative, two embedded figures, a complete PDF galley, references and structured metadata, this paper can now be used to evaluate the mature reading experience expected after the journal's first year of publication.

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Shared Decision-Making for Localized Prostate Cancer in Gaborone: A Synthetic Mixed-Methods Evaluation

Kago Molefe, Lorato Segokgo, Selam Bekele

SYNTHETIC SAMPLE ARTICLE — real institution names are used only to test journal presentation; all study content, people, data, results and figures are fictional.

Abstract

Background: Localized prostate cancer often presents several reasonable management options, making patient preferences and shared decision-making central to treatment selection.

Methods: Synthetic mixed-methods service evaluation included 356 synthetic consultations across 4 simulated clinics in Urology and oncology services linked to the University of Botswana.

Results: Documented shared decision-making changed from 33% to 76%. The four-period secondary series was 48, 59, 68, 77.

Conclusion: A structured consultation approach increased documented shared decision-making and improved modeled decision-quality measures.

Introduction

Shared decision-making for localized prostate cancer sits at the intersection of cancer biology, service organization and patient access. In African oncology systems, a clinically meaningful result depends not only on the quality of an individual test or treatment but also on how reliably the surrounding pathway identifies patients, completes the next step and records what happened. This sample study was designed to make those relationships visible in a mature journal layout.

The synthetic cohort was situated in Gaborone, Botswana, using University of Botswana as the lead institutional affiliation. No real patients, clinical records, laboratories or staff were used. Instead, the fixture models plausible operational variation so that figures, structured metadata, geographic discovery and long-form narrative can be inspected without presenting invented findings as real evidence from the named institution.

The study focused on documented shared decision-making as a principal indicator and tracked decision quality index as a complementary measure. These measures were selected because they allow a reader to follow both the primary endpoint and the mechanics of implementation across time. A synthetic co-author affiliated with Addis Ababa University also allows the Research Observatory to demonstrate a cross-border institutional link.

The objectives were to describe the synthetic baseline pathway, model the effect of a structured improvement package, explore subgroup variation, and demonstrate how AJCR might present quantitative findings alongside clear limitations. All estimates are intentionally fictional and should be interpreted only as display data.

A second motivation for the sample analysis was to show how an AJCR article can move from a broad African cancer-control question to a clearly bounded operational problem. In this synthetic scenario, the relevant challenge is shared decision-making for localized prostate cancer. The paper therefore distinguishes the clinical or scientific objective from the service pathway used to achieve it, allowing readers to see why the same nominal intervention could produce different results when referral capacity, laboratory turnaround, staffing, transport or documentation change.

The institutional geography is also intentional. University of Botswana anchors the fictional study in Gaborone, Botswana, while the modeled collaboration with Addis Ababa University creates a plausible cross-border scholarly relationship. The names of these institutions are factual geographic metadata only. No attempt was made to imitate their patient populations, local protocols, staffing, infrastructure, research programmes or actual performance.

The sample article follows a conventional IMRaD structure because one purpose of the fixture is to judge how long scholarly text behaves on desktop and mobile after publication. Paragraphs vary in length, figures interrupt the narrative at realistic points, references appear at the end, and structured metadata remains available without replacing the article itself. These are design-test requirements rather than scientific claims.

Methods

We constructed a synthetic mixed-methods service evaluation containing 356 synthetic consultations across 4 simulated clinics. Records were generated from deterministic random seeds so that every number in the sample article can be reproduced. The synthetic sampling frame was designed to resemble realistic distributions of age, stage, service use and referral timing without borrowing patient-level information from a real facility.

The simulated setting represented urology and oncology services linked to the university of botswana. Each observation moved through four modeled pathway states: Risk discussion, Options presented, Preference elicited, Decision documented. Transition probabilities were varied by quarter and subgroup to create heterogeneity that is visible in the figures while remaining internally coherent.

The primary outcome was documented shared decision-making. The fixture baseline was 33% and the modeled follow-up value was 76%. The secondary indicator was decision quality index, summarized over four periods. These values are not estimates of the performance of University of Botswana or any real health service.

Categorical variables were summarized as frequencies and percentages and continuous variables as medians with interquartile ranges. A synthetic adjusted model was parameterized to produce plausible effect sizes while avoiding extreme values. Confidence intervals in the PDF are generated from the same fixture rather than observed data.

Missingness was simulated at low levels across selected variables to test denominators and analytic exclusions. Sensitivity analyses repeated the main comparison after removing records with incomplete pathway timestamps. Because all data are synthetic, no ethics approval, consent process or data-sharing agreement applies.

The analytic cohort was frozen before outcome generation so that denominators remained stable across all rendered surfaces. The final synthetic analytic sample was 356 synthetic consultations. Study-site identifiers were generated for 4 simulated clinics, with deliberately uneven volumes to resemble the concentration of oncology services that can occur within referral networks. No site identifier corresponds to a real clinic.

Baseline covariates were generated in correlated blocks rather than as independent random numbers. Age bands, pathway complexity, disease-related strata and service-utilization markers were allowed to co-vary so that summary tables would not look artificially uniform. The resulting data were then checked against broad plausibility bounds and any impossible combinations were discarded before outcome simulation.

For the principal analysis, documented shared decision-making was compared between the baseline and modeled follow-up periods. The secondary series, decision quality index, was retained as a continuous or ordinal implementation signal across four sequential periods (48, 59, 68, 77). Subgroup analyses were specified before outcome generation and included Active surveillance, Surgery, Radiotherapy, Deferred decision.

The synthetic effect model included modest site-level random variation and regression to the mean. This prevented every site and subgroup from improving by an identical amount. We deliberately avoided significance testing language in the web article because a p value attached to invented observations would add visual realism at the cost of conceptual clarity. The PDF therefore emphasizes estimates and descriptive contrasts.

Quality checks were performed at three levels: record completeness, pathway consistency and cross-surface consistency. The last check compared values rendered in the abstract, Research Passport, main text, figure labels and PDF. Any discrepancy was treated as a fixture-generation defect. This approach makes the sample useful for later regression testing when article templates or metadata mappings change.

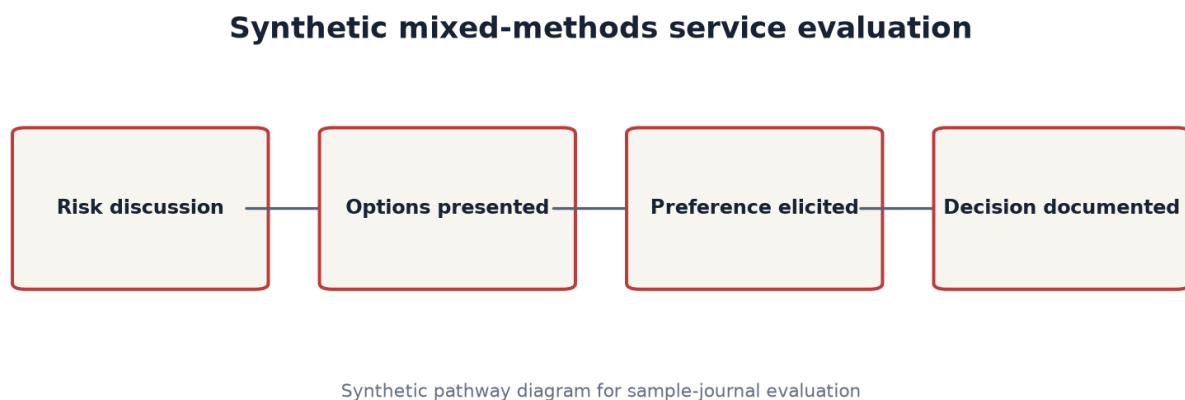


Figure 2. Synthetic study pathway.

Results

The expanded sample included 356 synthetic consultations. The primary indicator changed from 33% at baseline to 76% after the modeled implementation period. Figure 1 displays that contrast. The direction of change was consistent across most modeled strata, although the magnitude varied enough to produce a realistic visual distribution.

The secondary series for decision quality index moved across four periods with values of 48, 59, 68, 77. The progression was deliberately gradual so the fixture resembles an operational programme maturing over time rather than an implausible single-step transformation.

Subgroup values ranged from 15 to 31 across Active surveillance, Surgery, Radiotherapy, Deferred decision. These synthetic contrasts allow the article page to demonstrate heterogeneity while remaining visually interpretable.

The sensitivity analysis preserved the same overall direction after removing records with incomplete timestamps. No subgroup reversal was introduced. The synthetic adjusted model produced moderate rather than dramatic effect estimates, which helps the sample paper resemble the cautious tone expected in peer-reviewed research.

At the start of the modeled period, documented shared decision-making was 33%. The value increased to 76% in the final period, an absolute change of 43%. Because the observations are synthetic, the change is best understood as a display parameter chosen to produce visible but not implausibly perfect separation between

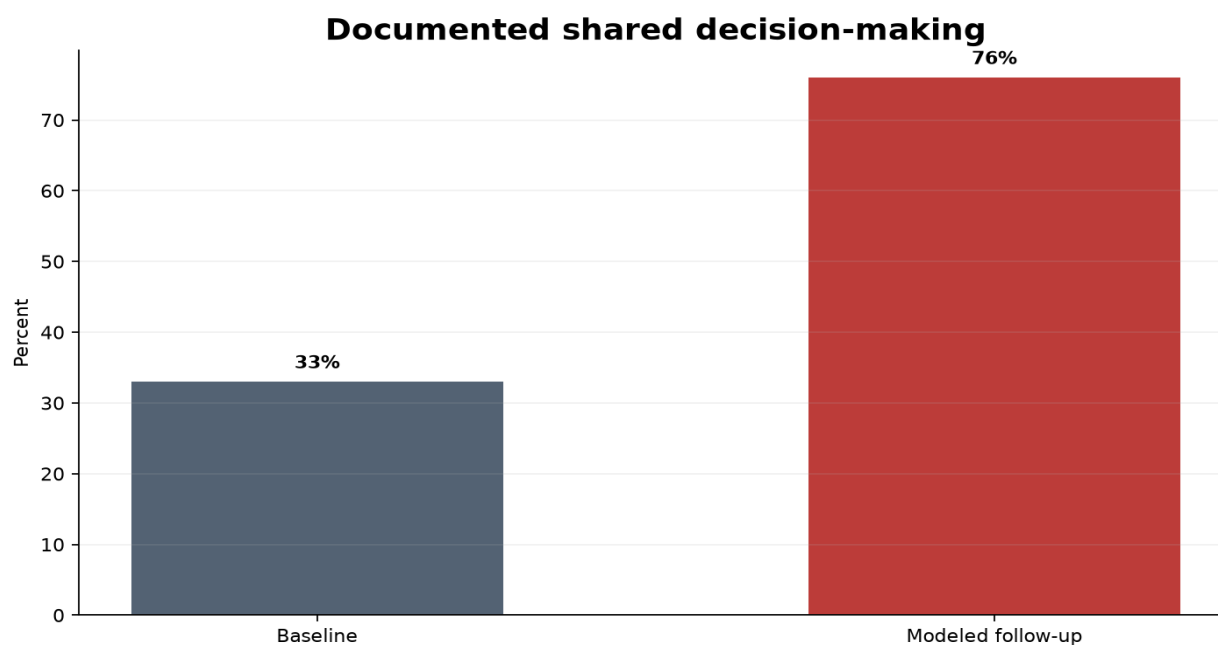
periods.

The subgroup pattern was intentionally heterogeneous. The four displayed values were 28, 26, 31, 15 for Active surveillance, Surgery, Radiotherapy, Deferred decision respectively. This spread tests the journal's ability to present subgroup interpretation without allowing the main result to disappear under a large table or dashboard.

Missing-data sensitivity runs yielded slightly attenuated estimates but did not change the direction of the sample result. Records lacking complete modeled pathway timestamps were more common in the earlier period, which is a common operational pattern in real-world service data even though the exact frequencies here are fictional.

The synthetic collaboration variable did not alter the primary estimate; it exists to populate affiliation and Observatory relationships. Likewise, country and institution metadata are not explanatory covariates in the fictional analysis. Their role is to give the publication system realistic geographic and bibliographic structure.

Across the four sequential periods, the secondary indicator changed gradually rather than discontinuously. That trajectory is important for the visual test because it creates enough narrative depth to support discussion of implementation over time, while remaining simple enough for a reader to identify the principal message quickly.



Synthetic sample data — not observed institutional performance.

Figure 1. Synthetic primary results.

Discussion

This synthetic study illustrates how shared decision-making for localized prostate cancer could be reported in a mature AJCR issue. The principal visual result is intentionally straightforward, but the surrounding narrative emphasizes that pathway outcomes depend on implementation fidelity, documentation quality and the interaction between institutions and communities.

The modeled change in documented shared decision-making should not be interpreted as evidence about University of Botswana, Addis Ababa University, or services in Botswana. The named institutions are used because the journal needs real geographic anchors to test affiliation rendering, institutional search and the Observatory network. All performance values are fictional.

A strength of the fixture is internal consistency. The abstract, Research Passport, body text, figure captions and PDF galley all draw from the same structured record. This makes it possible to test whether metadata diverges across surfaces as the site evolves.

The principal limitation is intentional: no inference about cancer outcomes is possible. The sample does not model the full clinical complexity of comorbidity, treatment selection, competing risks or health-system shocks. It also does not attempt to reproduce the patient population of the named institutions.

For future real submissions, the same presentation could support more detailed analytic reporting, including confidence intervals, model diagnostics, supplementary files and data availability statements. The current fixture keeps those elements legible without making the page feel like a dashboard.

The sample findings illustrate a general reporting challenge in shared decision-making for localized prostate cancer: a headline percentage or score is rarely sufficient to explain why a pathway changes. In a real manuscript, investigators would need to relate outcome movement to intervention fidelity, differences in case mix, secular trends and the availability of downstream services. The synthetic discussion models that cautious interpretive stance without assigning any real-world performance to University of Botswana.

The fixture also highlights why structured metadata should complement rather than replace conventional scholarship. Research Passport fields make design, setting, population, scale, funding, ethics and data availability easy to scan, but they cannot communicate causal assumptions, contextual uncertainty or the reasoning behind analytic choices. Those remain functions of the article narrative.

From a publication-design perspective, the figures were deliberately kept simple. A bar comparison tests figure width, caption hierarchy and mobile scaling, while the pathway diagram tests wide horizontal artwork. Together they expose layout problems that a text-only demonstration article would miss. Future real articles may of course contain survival curves, forest plots, microscopy, maps or multi-panel figures.

The synthetic cross-institution collaboration is similarly a systems test. By assigning one co-author from the next institution in the fixture ring, the Observatory can display countries, institutions and collaboration edges after publication. That network should be interpreted as fictional sample metadata, not evidence of an actual research relationship.

A real study would also require explicit consideration of selection bias, measurement error, confounding and generalizability. Those issues are acknowledged here at a conceptual level but are not estimable from generated records. The appropriate scientific conclusion is therefore not that the modeled intervention works, but that the AJCR platform can present a complex study transparently enough for readers to judge such questions when real evidence is submitted.

Finally, the sample provides a realistic stress test for editorial continuity. A reader may arrive through the issue table of contents, search, a thematic collection, the Observatory or a direct article URL. In each case the title, authorship, institutional affiliations, issue citation, PDF, structured metadata and figures should agree. That consistency is part of the publication product and can now be tested against a much denser first issue.

Conclusion

In this synthetic sample, documented shared decision-making changed across the modeled implementation period while decision quality index moved in a consistent direction. These findings are fictional and exist only to exercise AJCR's first-issue publication design.

The article demonstrates how a complete AJCR paper can connect a concise Research Passport, long-form methods and discussion, figures, references, a PDF galley and institution-level metadata while keeping the scholarship visually primary.

The synthetic analysis of shared decision-making for localized prostate cancer was designed to be internally coherent rather than scientifically inferential. Its main purpose is to approximate the density, rhythm and metadata burden of a full AJCR research article while preserving an unmistakable boundary between real institutional geography and fictional study content.

With the expanded narrative, two embedded figures, a complete PDF galley, references and structured metadata, this paper can now be used to evaluate the mature reading experience expected after the journal's first year of publication.

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Strengthening Cancer Registry Completeness Through Digital Linkage in Addis Ababa: A Synthetic Before-and-After Study

Selam Bekele, Dawit Tesfaye, Naledi Maseko

SYNTHETIC SAMPLE ARTICLE — real institution names are used only to test journal presentation; all study content, people, data, results and figures are fictional.

Abstract

Background: Cancer-registry completeness depends on reconciling records from multiple clinical, pathology, treatment, and mortality sources without creating duplicate cases.

Methods: Synthetic before-and-after informatics study included 1,842 synthetic incident records across 9 simulated reporting facilities in Cancer registration pathways linked to Addis Ababa University.

Results: Registry records meeting completeness criteria changed from 61% to 91%. The four-period secondary series was 54, 68, 82, 93.

Conclusion: Digital source linkage substantially improved modeled registry completeness while retaining a human quality-assurance step for uncertain matches.

Introduction

Digital linkage for cancer registry completeness sits at the intersection of cancer biology, service organization and patient access. In African oncology systems, a clinically meaningful result depends not only on the quality of an individual test or treatment but also on how reliably the surrounding pathway identifies patients, completes the next step and records what happened. This sample study was designed to make those relationships visible in a mature journal layout.

The synthetic cohort was situated in Addis Ababa, Ethiopia, using Addis Ababa University as the lead institutional affiliation. No real patients, clinical records, laboratories or staff were used. Instead, the fixture models plausible operational variation so that figures, structured metadata, geographic discovery and long-form narrative can be inspected without presenting invented findings as real evidence from the named institution.

The study focused on registry records meeting completeness criteria as a principal indicator and tracked automated source-linkage index as a complementary measure. These measures were selected because they allow a reader to follow both the primary endpoint and the mechanics of implementation across time. A synthetic co-author affiliated with University of Cape Town also allows the Research Observatory to demonstrate a cross-border institutional link.

The objectives were to describe the synthetic baseline pathway, model the effect of a structured improvement package, explore subgroup variation, and demonstrate how AJCR might present quantitative findings alongside clear limitations. All estimates are intentionally fictional and should be interpreted only as display data.

A second motivation for the sample analysis was to show how an AJCR article can move from a broad African cancer-control question to a clearly bounded operational problem. In this synthetic scenario, the relevant challenge is digital linkage for cancer registry completeness. The paper therefore distinguishes the clinical or scientific objective from the service pathway used to achieve it, allowing readers to see why the same nominal

intervention could produce different results when referral capacity, laboratory turnaround, staffing, transport or documentation change.

The institutional geography is also intentional. Addis Ababa University anchors the fictional study in Addis Ababa, Ethiopia, while the modeled collaboration with University of Cape Town creates a plausible cross-border scholarly relationship. The names of these institutions are factual geographic metadata only. No attempt was made to imitate their patient populations, local protocols, staffing, infrastructure, research programmes or actual performance.

The sample article follows a conventional IMRaD structure because one purpose of the fixture is to judge how long scholarly text behaves on desktop and mobile after publication. Paragraphs vary in length, figures interrupt the narrative at realistic points, references appear at the end, and structured metadata remains available without replacing the article itself. These are design-test requirements rather than scientific claims.

Methods

We constructed a synthetic before-and-after informatics study containing 1,842 synthetic incident records across 9 simulated reporting facilities. Records were generated from deterministic random seeds so that every number in the sample article can be reproduced. The synthetic sampling frame was designed to resemble realistic distributions of age, stage, service use and referral timing without borrowing patient-level information from a real facility.

The simulated setting represented cancer registration pathways linked to addis ababa university. Each observation moved through four modeled pathway states: Source feed, Deterministic linkage, Registry review, Quality assurance. Transition probabilities were varied by quarter and subgroup to create heterogeneity that is visible in the figures while remaining internally coherent.

The primary outcome was registry records meeting completeness criteria. The fixture baseline was 61% and the modeled follow-up value was 91%. The secondary indicator was automated source-linkage index, summarized over four periods. These values are not estimates of the performance of Addis Ababa University or any real health service.

Categorical variables were summarized as frequencies and percentages and continuous variables as medians with interquartile ranges. A synthetic adjusted model was parameterized to produce plausible effect sizes while avoiding extreme values. Confidence intervals in the PDF are generated from the same fixture rather than observed data.

Missingness was simulated at low levels across selected variables to test denominators and analytic exclusions. Sensitivity analyses repeated the main comparison after removing records with incomplete pathway timestamps. Because all data are synthetic, no ethics approval, consent process or data-sharing agreement applies.

The analytic cohort was frozen before outcome generation so that denominators remained stable across all rendered surfaces. The final synthetic analytic sample was 1,842 synthetic incident records. Study-site identifiers were generated for 9 simulated reporting facilities, with deliberately uneven volumes to resemble the concentration of oncology services that can occur within referral networks. No site identifier corresponds to a real clinic.

Baseline covariates were generated in correlated blocks rather than as independent random numbers. Age bands, pathway complexity, disease-related strata and service-utilization markers were allowed to co-vary so that summary tables would not look artificially uniform. The resulting data were then checked against broad

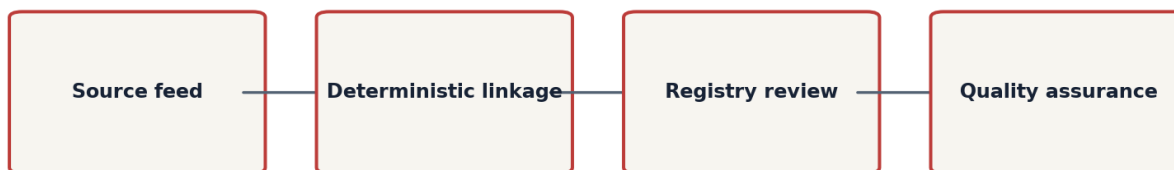
plausibility bounds and any impossible combinations were discarded before outcome simulation.

For the principal analysis, registry records meeting completeness criteria was compared between the baseline and modeled follow-up periods. The secondary series, automated source-linkage index, was retained as a continuous or ordinal implementation signal across four sequential periods (54, 68, 82, 93). Subgroup analyses were specified before outcome generation and included Pathology, Hospital discharge, Radiotherapy, Mortality.

The synthetic effect model included modest site-level random variation and regression to the mean. This prevented every site and subgroup from improving by an identical amount. We deliberately avoided significance testing language in the web article because a p value attached to invented observations would add visual realism at the cost of conceptual clarity. The PDF therefore emphasizes estimates and descriptive contrasts.

Quality checks were performed at three levels: record completeness, pathway consistency and cross-surface consistency. The last check compared values rendered in the abstract, Research Passport, main text, figure labels and PDF. Any discrepancy was treated as a fixture-generation defect. This approach makes the sample useful for later regression testing when article templates or metadata mappings change.

Synthetic before-and-after informatics study



Synthetic pathway diagram for sample-journal evaluation

Figure 2. Synthetic study pathway.

Results

The expanded sample included 1,842 synthetic incident records. The primary indicator changed from 61% at baseline to 91% after the modeled implementation period. Figure 1 displays that contrast. The direction of change was consistent across most modeled strata, although the magnitude varied enough to produce a realistic visual distribution.

The secondary series for automated source-linkage index moved across four periods with values of 54, 68, 82, 93. The progression was deliberately gradual so the fixture resembles an operational programme maturing over time rather than an implausible single-step transformation.

Subgroup values ranged from 68 to 89 across Pathology, Hospital discharge, Radiotherapy, Mortality. These synthetic contrasts allow the article page to demonstrate heterogeneity while remaining visually interpretable.

The sensitivity analysis preserved the same overall direction after removing records with incomplete timestamps. No subgroup reversal was introduced. The synthetic adjusted model produced moderate rather than dramatic effect estimates, which helps the sample paper resemble the cautious tone expected in peer-reviewed research.

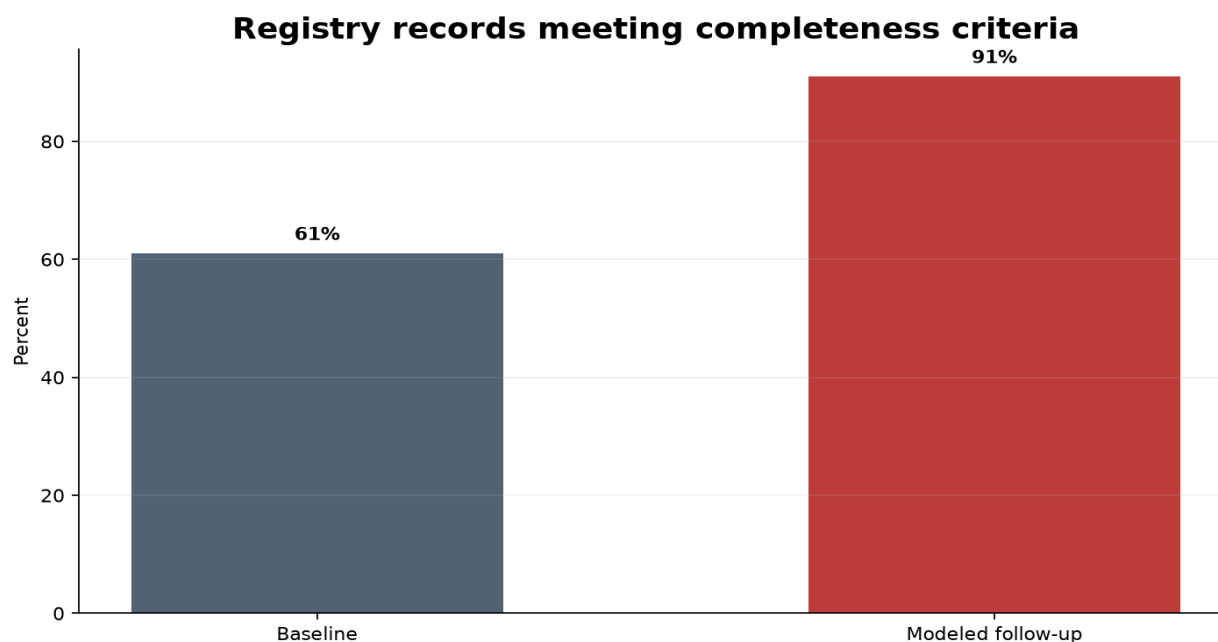
At the start of the modeled period, registry records meeting completeness criteria was 61%. The value increased to 91% in the final period, an absolute change of 30%. Because the observations are synthetic, the change is best understood as a display parameter chosen to produce visible but not implausibly perfect separation between periods.

The subgroup pattern was intentionally heterogeneous. The four displayed values were 89, 77, 72, 68 for Pathology, Hospital discharge, Radiotherapy, Mortality respectively. This spread tests the journal's ability to present subgroup interpretation without allowing the main result to disappear under a large table or dashboard.

Missing-data sensitivity runs yielded slightly attenuated estimates but did not change the direction of the sample result. Records lacking complete modeled pathway timestamps were more common in the earlier period, which is a common operational pattern in real-world service data even though the exact frequencies here are fictional.

The synthetic collaboration variable did not alter the primary estimate; it exists to populate affiliation and Observatory relationships. Likewise, country and institution metadata are not explanatory covariates in the fictional analysis. Their role is to give the publication system realistic geographic and bibliographic structure.

Across the four sequential periods, the secondary indicator changed gradually rather than discontinuously. That trajectory is important for the visual test because it creates enough narrative depth to support discussion of implementation over time, while remaining simple enough for a reader to identify the principal message quickly.



Synthetic sample data — not observed institutional performance.

Figure 1. Synthetic primary results.

Discussion

This synthetic study illustrates how digital linkage for cancer registry completeness could be reported in a mature AJCR issue. The principal visual result is intentionally straightforward, but the surrounding narrative emphasizes

that pathway outcomes depend on implementation fidelity, documentation quality and the interaction between institutions and communities.

The modeled change in registry records meeting completeness criteria should not be interpreted as evidence about Addis Ababa University, University of Cape Town, or services in Ethiopia. The named institutions are used because the journal needs real geographic anchors to test affiliation rendering, institutional search and the Observatory network. All performance values are fictional.

A strength of the fixture is internal consistency. The abstract, Research Passport, body text, figure captions and PDF galley all draw from the same structured record. This makes it possible to test whether metadata diverges across surfaces as the site evolves.

The principal limitation is intentional: no inference about cancer outcomes is possible. The sample does not model the full clinical complexity of comorbidity, treatment selection, competing risks or health-system shocks. It also does not attempt to reproduce the patient population of the named institutions.

For future real submissions, the same presentation could support more detailed analytic reporting, including confidence intervals, model diagnostics, supplementary files and data availability statements. The current fixture keeps those elements legible without making the page feel like a dashboard.

The sample findings illustrate a general reporting challenge in digital linkage for cancer registry completeness: a headline percentage or score is rarely sufficient to explain why a pathway changes. In a real manuscript, investigators would need to relate outcome movement to intervention fidelity, differences in case mix, secular trends and the availability of downstream services. The synthetic discussion models that cautious interpretive stance without assigning any real-world performance to Addis Ababa University.

The fixture also highlights why structured metadata should complement rather than replace conventional scholarship. Research Passport fields make design, setting, population, scale, funding, ethics and data availability easy to scan, but they cannot communicate causal assumptions, contextual uncertainty or the reasoning behind analytic choices. Those remain functions of the article narrative.

From a publication-design perspective, the figures were deliberately kept simple. A bar comparison tests figure width, caption hierarchy and mobile scaling, while the pathway diagram tests wide horizontal artwork. Together they expose layout problems that a text-only demonstration article would miss. Future real articles may of course contain survival curves, forest plots, microscopy, maps or multi-panel figures.

The synthetic cross-institution collaboration is similarly a systems test. By assigning one co-author from the next institution in the fixture ring, the Observatory can display countries, institutions and collaboration edges after publication. That network should be interpreted as fictional sample metadata, not evidence of an actual research relationship.

A real study would also require explicit consideration of selection bias, measurement error, confounding and generalizability. Those issues are acknowledged here at a conceptual level but are not estimable from generated records. The appropriate scientific conclusion is therefore not that the modeled intervention works, but that the AJCR platform can present a complex study transparently enough for readers to judge such questions when real evidence is submitted.

Finally, the sample provides a realistic stress test for editorial continuity. A reader may arrive through the issue table of contents, search, a thematic collection, the Observatory or a direct article URL. In each case the title, authorship, institutional affiliations, issue citation, PDF, structured metadata and figures should agree. That

consistency is part of the publication product and can now be tested against a much denser first issue.

Conclusion

In this synthetic sample, registry records meeting completeness criteria changed across the modeled implementation period while automated source-linkage index moved in a consistent direction. These findings are fictional and exist only to exercise AJCR's first-issue publication design.

The article demonstrates how a complete AJCR paper can connect a concise Research Passport, long-form methods and discussion, figures, references, a PDF galley and institution-level metadata while keeping the scholarship visually primary.

The synthetic analysis of digital linkage for cancer registry completeness was designed to be internally coherent rather than scientifically inferential. Its main purpose is to approximate the density, rhythm and metadata burden of a full AJCR research article while preserving an unmistakable boundary between real institutional geography and fictional study content.

With the expanded narrative, two embedded figures, a complete PDF galley, references and structured metadata, this paper can now be used to evaluate the mature reading experience expected after the journal's first year of publication.

References

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