

Administrative Primacy as an Interpretive Framework for Health System Governance: A Document-Based Analysis of Three Publicly Reported Episodes During the 2021 Fujian COVID-19 Outbreak Response

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Abstract

Background

Public health emergencies can intensify ethical risks rather than suspend them. When emergency governance is structured primarily around administrative performance metrics, established clinical and occupational protection norms may face displacement pressure. This case study examines three publicly reported episodes from the 2021 Fujian Delta variant COVID-19 outbreak through the interpretive lens of Administrative Primacy, a descriptive framework for analysing governance patterns in which administrative performance objectives may structurally outweigh clinical judgment and ethical reasoning. Administrative Primacy is introduced here as a sensitising concept rather than a formal theory, analogous to interpretive constructs used in governance and organisational ethics research.

Methods

We conducted a document-based ethical case analysis using exclusively publicly available sources: official government communications, state-approved media reports, and peer-reviewed literature. All cited documentary sources are publicly accessible and independently retrievable. Ethical interpretation was informed, where applicable, by selected principles of the Declaration of Helsinki (2013), supplemented by WHO outbreak-ethics guidance, NHC pediatric imaging standards (WS 521–2017), and UV radiation safety regulations (GB 19258 – 2012). A Poisson incidence density model was applied as an auxiliary sensitivity analysis to examine the plausibility of a reported occupational outcome; full derivation and sensitivity analyses are in Supplementary Methods S1. Evidence is categorised by type throughout: official photographs, official regulatory text, official press conference records, and state-approved media reports are distinguished from interpretive inference.

Results

Three domains of concern were identified, each supported by publicly accessible documentary sources, including official documents and contemporaneous media reports. First, a state-media-documented pediatric CT episode involved the simultaneous co-occurrence of three concurrent ethical and regulatory concerns: an unaccompanied minor in a radiological environment (contrary to WS 521–2017), an apparently illuminated UV germicidal lamp during the child's presence (which would be contrary to GB 19258 – 2012 if operating as depicted), and CT application to a cohort characterised by the NHC's own lead expert as predominantly mild. Second, the overnight mobilisation of 320 pre-licensure medical students for 27 days of high-frequency nasopharyngeal sampling raised occupational safety and consent concerns; auxiliary Poisson analysis suggested the reported zero-infection outcome was lower than would be anticipated under the stated comparator assumptions, raising a question that warrants verification. Third, a 'Green Channel' administrative exception at the region's designated tertiary hospital temporally associated with a sequence of events culminating in ICU closure, creating structural

conditions that may have been associated with delayed critical care access; no mortality estimate is made.

Conclusions

The three episodes are consistent with, and may be interpreted through, the Administrative Primacy framework as illustrations of a governance pattern in which administrative performance metrics may, in some circumstances, come into tension with clinical ethics, occupational protection norms, and institutional transparency. The framework is offered as a replicable analytical tool for evaluating governance-ethics alignment in future emergency responses, and three domains are identified as candidate areas for further health-system governance review, framed as hypotheses generated by this single case rather than as established broader policy gaps.

Background

Public health emergencies can intensify ethical risks rather than suspend them. Established frameworks, including the Declaration of Helsinki (2013) ^[1], the International Health Regulations (IHR 2005) ^[2], and the WHO Guidance for Managing Ethical Issues in Infectious Disease Outbreaks ^[3], affirm that principles of informed consent, risk minimisation for vulnerable populations, and independence of clinical judgment must be preserved under emergency conditions. A substantial body of scholarship in disaster ethics and public health governance documents the conditions under which these principles may face displacement ^[4, 5, 6, 7].

The 2021 Fujian Delta variant outbreak occurred within China's 'Dynamic Zero-COVID' (动态清零) governance framework, under which local governments were evaluated against quantitative administrative Key Performance Indicators (KPIs) including confirmed case counts, nucleic acid testing throughput, and days-to-clearance ^[12]. Within this framework, several institutional features relevant to this study require explanation for international readers. A 'tertiary hospital' (三级医院) in the Chinese system is the highest-level designation, indicating a major regional referral centre with full specialist capacity. A 'Green Channel' (绿色通道) is an administrative exception mechanism that permits designated personnel to bypass standard screening or queuing procedures. 'State-approved media' is used here as a working label for a heterogeneous set of outlets operating under China's media licensing and editorial-oversight regime, and is not intended to imply a single evidentiary status. Three sub-categories are distinguished throughout this study: official wire-service reporting (Xinhua-style releases), commercially operated outlets subject to the same oversight regime (e.g. The Paper/Pengpai, Sina Technology), and healthcare-trade publications (e.g. Health Affairs/Jiankang Jie, Fujian Health News). Reports from any of these outlets are treated as institutional records only where they reproduce a primary document, an official photograph, a press-conference statement, or a regulatory text, rather than as independent journalistic verification of underlying events; this distinction, and its limits, is elaborated in the Data Sources subsection and applied through the evidence-tier classification below. 'Party Vice-Secretary' refers to a

senior administrative officer of the Chinese Communist Party branch within a university, who holds parallel authority to the academic president in institutional decision-making.

This study proposes Administrative Primacy as an interpretive framework for analysing governance patterns in which administrative performance objectives may structurally outweigh clinical judgment and ethical reasoning during public health emergencies. The framework is related to, but distinct from, several existing concepts. It shares features with the concept of 'perverse incentives' in health systems governance^[30], with Gostin and Katz's analysis of accountability gaps in the IHR framework^[32], and with broader scholarship on the tension between administrative accountability structures and scientific integrity in emergency response^[4, 6, 29]. Its specific contribution is the operationalisation of this governance critique as a three-step analytical procedure applicable to documentary evidence from subnational outbreak responses: (1) identify the KPI structure governing the response; (2) identify domains where KPI optimisation creates incentives to bypass protective norms; (3) examine available documentary evidence for norm displacement in those domains. This procedure is intended to be replicable across governance systems and emergency contexts, enabling comparative analysis. The framework is offered as a descriptive lens rather than a causal claim, and its application to the present case should be understood as hypothesis-generating rather than hypothesis-confirming.

The 2021 Fujian outbreak was officially characterised as a contained cluster of 409 confirmed cases and zero attributable deaths between September and October 2021^[8]. The three episodes analysed here were selected because each met four criteria applied consistently across candidate episodes identified during the author's review of the outbreak record: the episode was documented in publicly available sources; it involved a clearly identifiable administrative decision or directive; it involved an identifiable clinical, occupational, or ethical norm that the decision plausibly bore upon; and it permitted comparison between a stated or inferable administrative objective and a named protective standard. Other episodes noted during the review that did not meet all four criteria, for example, isolated media reports lacking a specific administrative decision, or reports lacking any named comparator standard, were not included. The three episodes selected, involving pediatric imaging, pre-licensure student deployment, and hospital service disruption, together allow structured multi-domain analysis within a single outbreak event, with each domain supported by publicly retrievable documentary sources of the tier specified in each case.

Methods

Study Design

This is a retrospective document-based ethical case analysis, a design used in medical ethics literature to examine the ethical dimensions of documented clinical and administrative events using publicly verifiable sources^[9, 10]. No primary human-subject data were collected or analysed. All evidence is drawn from publicly available sources. The study involved no human-subject recruitment, intervention, or access to identifiable personal data and was therefore not submitted for institutional review board

review. Ethical interpretation was informed, where applicable, by selected principles of the Declaration of Helsinki, supplemented by WHO outbreak-ethics and occupational-safety guidance.

The study employs three analytical components: (a) ethical case analysis, which constitutes the primary design and involves evaluating documented events against named regulatory and ethical standards; (b) an auxiliary Poisson incidence density model, applied as a sensitivity analysis to examine the plausibility of a reported occupational outcome, and interpreted as an epistemic tool rather than an epidemiological proof; and (c) structural condition analysis for Domain 3, restricted to characterising the administrative conditions under which delayed care access may have occurred, without claiming or estimating specific outcomes. These components are complementary but methodologically distinct; their combination is disclosed here to enable accurate editorial classification. The study does not constitute a mixed-methods research design in the technical sense, as no primary data collection occurred; it is more accurately described as a multi-component document-based ethical analysis.

Data Sources

Sources were restricted to the following categories to ensure full verifiability:

- Official government communications and NHC press conference records;
- State-approved media reports (Xinhua News Agency, The Paper/Pengpai, Health Affairs/Jiankang Jie, Fujian Health News, Sina Technology), used as institutional records of government-managed events, not as independent journalism;
- Peer-reviewed epidemiological and medical literature;
- Authoritative clinical and regulatory standards: NHC Diagnosis and Treatment Protocol for COVID-19 (8th Revised Edition, 2021); NHC Technical Standards for Quality Control of Medical Imaging (WS 521–2017); Chinese National Standard for Ultraviolet Germicidal Lamps (GB 19258 – 2012).

No unverified informant testimony is presented as factual evidence. Documentary materials are limited to records that entered the public domain through official reporting, judicial proceedings, or other publicly accessible channels. Analytical inferences are explicitly distinguished from factual findings through the evidence-tier framework.

The three media sub-categories listed above are not treated as interchangeable. Wire-service releases and press-conference records function here principally as conduits that reproduce a primary document (a photograph, a regulatory citation, an official statement) and are evaluated on that basis rather than on the outlet's general journalistic reliability. Commercially operated outlets (The Paper/Pengpai, Sina Technology) and healthcare-trade publications (Health Affairs/Jiankang Jie) operate under the same licensing and editorial-oversight regime but are not organs of the state press apparatus in the same sense as Xinhua-style releases; their reporting is accordingly classified as Tier 2 (attributed to a named outlet, subject to that outlet's reporting constraints) rather than Tier 1, and is not used to establish facts that are not independently anchored in a Tier 1 document. This distinction is applied consistently in the

evidence tier classification presented in Table 1 below and in the domain-specific evidence tables in Results (Table 2; Table 3).

Evidence Tier Classification

To ensure transparency about the evidentiary basis of each claim, all findings in this study are categorised by evidence tier. This classification is maintained throughout the Results section.

Table 1
Evidence tier classification used to categorise all findings in this study.

Tier	Description	Examples Used in This Study	Interpretive Weight
Tier 1 Documentary	Primary documentary evidence directly attributable to an official institution: original regulatory documents, official institutional records, official press-conference records, or photographs for which institutional provenance can be established	NHC WS 521–2017 regulatory text; NHC press conference infection data; internal staff scheduling table reproduced in Supplementary Exhibit S2	Highest: directly verifiable against original source
Tier 2 Reported	Contemporaneous reports by identifiable media outlets, including reports reproducing or attributing information to official sources without independently established institutional provenance	Media photographs of the CT examination room (UV lamp status, absence of accompaniment); deployment details from Sina Technology; hospital disruption from Health Affairs; clinical characterisation from The Paper	Moderate: attributed to named official source; subject to reporting constraints
Tier 3 Derived	Calculations, estimates, or inferences made by the author from Tier 1 or Tier 2 inputs	Poisson probability estimates; structural condition characterisation for Domain 3	Lower: assumptions stated explicitly; findings presented as questions or concerns, not as facts

Throughout the Results and Discussion sections, factual claims derived from Tier 1 sources are presented as documented; claims from Tier 2 sources are attributed to their named outlet; and Tier 3 inferences are explicitly framed as analytical observations, concerns, or questions rather than established facts.

Ethical Assessment Framework

Ethical evaluation was conducted against:

The Declaration of Helsinki is primarily a research-ethics instrument, and its formal jurisdiction is the conduct of research involving human subjects rather than routine clinical or administrative practice. It is used here only for its risk-minimisation and vulnerable-population principles (Articles 16, 17, 25, 26), applied by analogy rather than as a governing regulatory standard for the events examined: Domain 1 involves a vulnerable population (a young child) in a diagnostic rather than research context, and Domain 2 involves individuals in a workforce rather than research-subject role. Where the analogy does not directly hold, as in Domain 2, discussed further below, the primary applicable framework is occupational health and safety guidance rather than Helsinki. The Declaration is supplemented, and for the administrative-governance dimension of this analysis substantially superseded, by the WHO outbreak-ethics guidance and the public-health-ethics scholarship cited throughout, which speak more directly to clinical and administrative conduct during emergencies.

- Declaration of Helsinki (2013), Articles 16, 17, 25, and 26, applied by analogy (see note above): risk minimisation, protection of vulnerable populations, informed consent ^[1];
- WHO Guidance for Managing Ethical Issues in Infectious Disease Outbreaks (2016) ^[3];
- NHC WS 521–2017, Section 4.3: accompaniment requirements for children under 14 during radiological examination ^[14];
- GB 19258 – 2012, Section 5.3: prohibition of human presence during UV germicidal lamp operation ^[15];
- NHC Diagnosis and Treatment Protocol (8th Revised Edition): diagnostic necessity criteria for mild COVID-19 ^[13].

For the student deployment domain, the ethical framework is applied as occupational protection rather than research consent, given that students were mobilised as workers rather than study participants ^[16, 17].

Statistical Analysis: Poisson Incidence Density Model

A Poisson incidence density model was applied as an auxiliary sensitivity analysis to examine whether the reported zero-infection outcome among deployed students was consistent with expectations derived from a comparator cohort. In the ethical framework of this study, the model serves a specific and limited epistemic function: where an officially reported outcome is lower than would be anticipated under the stated comparator assumptions, this raises a question about data completeness that the institution would be positioned to resolve through primary record disclosure. The model does not constitute proof of misreporting, and its results are interpreted accordingly. The core formula is:

$P(X = 0) = e^{-(\lambda)}$, where λ = incidence rate $\times$ person-time at risk

All parameters, derivation steps, the duration-weighting formula, and sensitivity analyses across varying assumptions are reported in full in Supplementary Methods S1. The main text reports only the direction and conservative interpretation of findings, consistent with the epistemic limitations of a proxy-comparator approach and the non-exchangeability caveats described in the Limitations section.

Structural Condition Analysis for Domain 3

For the hospital service disruption domain, the analysis is restricted to characterising the administrative conditions under which delayed access to critical care may have occurred. No mortality estimate, crematorium data, or excess death calculation is presented; primary vital statistics records are unavailable and no proxy estimation is offered. The analysis is limited to structural inference: documenting the administrative decision, its documented institutional consequences, and the logical relationship between those consequences and the availability of emergency care.

Results

Domain 1: Pediatric Diagnostic Ethics, Three Concurrent Ethical and Regulatory Concerns

State media reporting on the 2021 Fujian outbreak included official coverage of a four-year-old child at Putian University Affiliated Hospital undergoing chest CT imaging as part of COVID-19 clinical management ^[21, 22]. The child was fully covered in standard personal protective equipment throughout, rendering the child non-identifiable in published media photographs. Three concurrent ethical and regulatory concerns are documented below and summarised in Table 2, each from Tier 1 or Tier 2 sources and each independently assessable. The significance of this episode lies in their simultaneous co-occurrence within a single documented clinical encounter; each concern individually might reflect a localised circumstance, but their concurrence is consistent with the possibility of protocol-compliance pressures under emergency administrative conditions.

Concern 1, Unaccompanied Minor in a Radiological Environment [Tier 1/2]

NHC Technical Standards WS 521–2017 (Section 4.3) require that children under 14 years of age be accompanied by a parent, guardian, or trained clinical personnel throughout all radiological procedures ^[14]. Official media photographs and accounts document the child entering and remaining in the CT examination room without adult accompaniment ^[21]. An accompanying adult serves multiple protective functions: shielding from incidental radiation scatter, ensuring correct positioning to minimise scan repetition, and providing capacity to intervene in the event of adverse reaction or equipment error. The documented absence of accompaniment constitutes a deviation from a named regulatory requirement. The specific circumstances that produced this deviation cannot be determined from the public record; the deviation itself is documented.

Concern 2, Apparently Illuminated UV Germicidal Lamp During Patient Presence [Tier 2]

Official media photographs published by Fujian Health News appear to show an illuminated ultraviolet germicidal lamp in the CT examination room during the child's presence ^[21]. The image is consistent with lamp operation, although operational status and irradiance cannot be independently verified from the photograph alone; because institutional provenance of the photograph is not independently established, this is classified as Tier 2 evidence rather than Tier 1. Chinese National Standard GB 19258 – 2012 (Section 5.3) explicitly prohibits the presence of persons in spaces where UV germicidal lamps are in operation ^[15]. UV-C exposure may cause acute photokeratitis and skin injury, which is why GB 19258 – 2012 prohibits human presence during lamp operation. Standard COVID-19 patient PPE suits are not designed to block UV-C radiation.

If the lamp was operating as depicted, the presence of a person in the room would be inconsistent with GB 19258 – 2012, and standard patient PPE would not have prevented UV-C exposure. No adult was present to provide protective intervention. Taken together, the scene raises the possibility of concurrent exposure to ionising radiation from the CT scanner and UV-C radiation from the germicidal lamp, a concern supported by contemporaneous photographic evidence and assessed against a named national safety standard, though the lamp's operational status, irradiance, and any resulting exposure cannot be independently quantified from the available public record.

Concern 3, Diagnostic Proportionality in Predominantly Mild Pediatric Disease [Tier 2]

The NHC's lead clinical expert for the Fujian outbreak, Professor Long Yun (Director of Critical Care Medicine, Peking Union Medical College Hospital), stated in official media coverage that pediatric cases were 'predominantly mild and common-type, with very few severe cases,' that children's temperatures typically normalised within one week, and that management was primarily supportive ^[22]. This is a Tier 2 finding, attributed to a named NHC-designated expert in state-approved media. The NHC Diagnosis and Treatment Protocol (8th Revised Edition) does not mandate chest CT as a component of the diagnostic pathway for confirmed mild COVID-19 cases where nucleic acid testing has established the diagnosis ^[13].

The ethical question raised, as a concern rather than a finding, is one of diagnostic proportionality and risk minimisation ^[1, 23, 24]: whether the systematic application of chest CT to a cohort characterised by the authority's own lead expert as predominantly mild was consistent with the obligation to minimise non-therapeutic radiation exposure in children. This concern does not assert that CT was never individually indicated, and does not exclude the possibility that clinical circumstances justified imaging in specific cases. It raises a question about whether proportionality criteria were applied consistently across the cohort, or whether administrative throughput considerations may have influenced imaging thresholds, a question that cannot be resolved from the available public record.

Table 2
Domain 1 (CT examination room) concerns, applicable regulatory standards, and documented deviations.

Concern	Tier	Applicable Standard	Documented Deviation	Source
1. Unaccompanied minor in CT room	1/2	NHC WS 521–2017, Section 4.3: accompaniment required for children under 14	Child (age 4) entered and remained in CT room without adult accompaniment	[21, 22]
2. Active UV lamp during patient presence	2	GB 19258 – 2012, Section 5.3: persons must not be present during UV lamp operation	Apparently illuminated UV germicidal lamp visible in official media photographs during child's presence	[21]
3. CT in clinically mild cohort	2	NHC Protocol 8th Ed.: CT not mandatory for confirmed mild cases; risk minimisation principle	CT applied to cohort characterised by NHC lead expert as predominantly mild	[13, 22]

Domain 2: Pre-Licensure Student Deployment, Occupational Ethics and Reporting Plausibility

On 11 September 2021, Putian University mobilised 320 pre-licensure medical students for nasopharyngeal swab collection across 28 rural townships in Xianyou County, authorised by the institution's Party Vice-Secretary ^[25]. The following findings are drawn from Tier 2 sources (state-approved media accounts) unless otherwise noted.

Occupational Safety and Informed Consent [Tier 2]

Official media reporting describes the entirety of pre-deployment preparation as a single outdoor session on the university sports field the night before deployment, covering PPE donning/doffing and swab technique ^[25]. Students reported completing nucleic acid sampling of approximately 8,000 community members within approximately two hours at individual village sites, sustained over 27 consecutive days. Whether this level of preparation was adequate relative to the occupational exposure risk is a question under applicable occupational health and safety standards [16, 17] and WHO frontline worker protection guidance [3]; the available public record raises the question without resolving it.

The public record documents a 'pledge-rally' (宣誓) ceremonial mobilisation format but does not document whether individualised occupational risk disclosure, documented consent, or post-deployment health monitoring were separately undertaken. The adequacy of collective ceremonial commitment as a substitute for individualised risk disclosure, documented consent, and post-deployment health monitoring in high-exposure occupational settings has been questioned in emergency workforce mobilisation literature ^[18, 19]. Pre-licensure students, lacking professional licensing and its attendant legal protections, may represent a particularly vulnerable occupational group in this context ^[20]. Whether the deployment satisfied occupational health and safety obligations under applicable Chinese labour law

or WHO frontline worker guidance cannot be determined from the public record alone; the available documentation raises this as a concern warranting review.

Illustrative Comparator Calculation: A Plausibility Question [Tier 3]

The officially reported outcome was zero infections across 27 days of high-frequency nasopharyngeal contact during an active Delta variant outbreak. An illustrative Poisson-based comparator calculation, classified as Tier 3, a derived analytical observation rather than an epidemiological estimate, was performed solely to quantify how this reported zero count compares numerically with the event rate observed in a comparator cohort. The comparator consisted of 413 students deployed for the same task in Tianshui, Gansu Province during the same Delta wave, with 3 confirmed infections reported at an NHC national press conference^[26]. Cohort parameters for both groups are summarised in Table 3.

- Under the simplest comparator-rate assumption, the expected number of infections in the Putian cohort was approximately 2.3 rather than zero ($\lambda_0 = (3/413) \times 320 = 2.33$); the corresponding Poisson probability calculation, $P(X = 0)$, is provided in Supplementary Methods S1 rather than presented here as a headline estimate;
- Under conservative duration-weighted adjustment ($k = 3$, reflecting 27-day Putian vs estimated shorter Tianshui deployment): $P(X = 0)$ is lower than would be anticipated under the comparator assumptions; full derivation in Supplementary Methods S1.

This result is a Tier 3 analytical observation and must be interpreted accordingly. Several caveats are material: the two cohorts may not be exchangeable in PPE quality, community viral load, baseline seroprevalence, or testing sensitivity; the duration-weighting factor (k) is estimated rather than directly measured; and differences in testing frequency could affect the comparability of reported infection counts. These limitations mean the analysis raises a question about whether the reported outcome is consistent with the documented exposure parameters, a question that warrants verification through primary occupational health records, rather than constituting evidence of misreporting. Full sensitivity analyses across $k = 1$ to 4 and comparator risk reduction scenarios $f = 0.10$ to 1.0 are in Supplementary Methods S1.

An internal consistency concern in the official record reinforces this question [Tier 2/3]: the outbreak was characterised as having produced ‘at least four to five generations of transmission’ before detection^[27], implying substantial community viral circulation during the same period in which 320 students conducted sustained high-frequency mucosal contact with the same community. The consistency of these two simultaneously reported claims, extensive multi-generation transmission and zero infections among prolonged frontline samplers, would benefit from independent verification through primary data.

Table 3
Comparator cohort parameters for the Poisson-based plausibility calculation (Domain 2).

Parameter	Tianshui Cohort (Comparator)	Putian Cohort (Study)
Cohort size	413 students	320 students
Pathogen	Delta B.1.617.2	Delta B.1.617.2
Task	Nasopharyngeal swab collection	Nasopharyngeal swab collection
Deployment duration	Shorter (not publicly specified)	27 consecutive days
Pre-deployment training	Not specified in public record	Single overnight outdoor session [25]
Daily contact volume	Not specified	~ 8,000 persons per team session [25]
Confirmed infections	3 (NHC press conference [26])	0 (official report)
Base $P(X = 0)$, $k = 1$ [Tier 3]	N/A	≈ 0.097
Duration-adjusted $P(X = 0)$, $k = 3$ [Tier 3]	N/A	Lower than would be anticipated under the comparator assumptions; see S1
NHC public framing [Tier 2]	Cited as occupational risk lesson	Reported as successful model deployment

Domain 3: Green Channel Administrative Exception and Medical Resource Displacement

Health Affairs (国家卫生健康委员会), a state-approved healthcare media outlet, reported that a nurse at Putian University Affiliated Hospital, described in public reporting as the region's designated tertiary COVID-19 treatment facility, tested positive for SARS-CoV-2 but was permitted to continue activity within the hospital under a 'Green Channel' (绿色通道) administrative exception, rather than being immediately isolated per NHC infection prevention protocol [28]. This is a Tier 2 finding, attributed to a named state-approved outlet.

The same reporting describes the following documented consequences: classification of more than 200 physicians as close contacts requiring mandatory isolation; emergency suspension of hospital clinical operations, including ICU services; and the available public record does not identify a backup tertiary facility maintaining equivalent ICU capacity during the closure period. [28]. A contemporaneous radiology department staff scheduling table, reproduced and annotated in Supplementary Exhibit S2, shows multiple staff positions marked '☒' (isolation) beginning 14 September 2021, the day following NAT result confirmation, providing Tier 1 institutional documentation of the staff isolation cascade described in Tier 2 media reporting.

Structural Conditions and Critical Care Access [Tier 3]

The closure of the region's designated tertiary ICU, in the absence of a documented backup facility, may have reduced access to time-sensitive emergency care for non-COVID conditions during the closure period. This is a Tier 3 structural inference: it follows logically from the documented closure of the region's designated tertiary facility, in the absence of any publicly documented equivalent backup facility, but no outcome data, mortality records, emergency transfer logs, or excess death calculations, are available to confirm, quantify, or refute any specific impact. No mortality estimate is presented in this study.

The structural concern is noted for two purposes: to characterise the potential public health consequence of the administrative exception decision, and to identify the specific primary records, emergency transfer records, and ICU closure and restoration documentation, that would be required for independent verification. The decision to grant a Green Channel exception to an individual who had tested positive for SARS-CoV-2, at the region's designated COVID-19 treatment facility, for which no publicly documented equivalent backup facility was identified, during an active outbreak, raises a question about the risk-benefit framework applied in that decision, a question that is independent of any outcome estimate.

Discussion

The Administrative Primacy Framework: Interpretive Utility and Boundaries

The three domains may be viewed through the Administrative Primacy lens as sharing a common pattern: each involves an episode in which administrative objectives and clinical-ethical safeguards appear to have come into tension, in a direction consistent with KPI optimisation under the Dynamic Zero-COVID governance structure. This interpretation is offered as a heuristic for organising the available evidence, not as a causal claim about the intentions or decisions of specific actors. The framework does not establish that any individual deliberately bypassed ethical requirements; it suggests that a governance environment structured around administrative KPIs may create conditions in which such bypasses become more likely at a systemic level ^[4, 5, 29, 30].

Applying the three-step procedure explicitly to each domain, the candidate KPI implicated, the mechanism by which it plausibly created pressure on protective norms, and the evidentiary limit of that attribution are as follows. In Domain 1, the publicly documented KPIs governing the response were case-count reporting and diagnostic throughput under the Dynamic Zero-COVID surveillance framework ^[12]; imaging throughput consistent with rapid case clearance is offered as the plausible administrative pressure point, but the public record does not document an internal directive linking a specific KPI to the imaging decision, and this attribution is accordingly a Tier 3 interpretive inference rather than a

demonstrated link. In Domain 2, the relevant KPI is testing throughput and speed of community-wide nucleic acid coverage, which is documented in the Dynamic Zero-COVID framework as a named administrative target ^[12]; the compressed training timeline and rapid mobilisation are consistent with pressure to meet that target, but no internal document establishing this link is available, and the attribution again rests on temporal association rather than demonstrated causation. In Domain 3, the plausible KPI is days-to-clearance and maintenance of continuous tertiary-facility operation, which would create pressure to avoid removing staff from service; the Green Channel exception is consistent with that pressure, but the public record documents only the exception and its downstream consequences, not the administrative reasoning behind the decision. In all three domains, the KPI attribution is presented as the most plausible reading of the documented decisions given the known structure of Dynamic Zero-COVID governance, not as an evidentiary finding; this limitation is restated in the Limitations section.

The boundaries of the framework should be stated clearly. Administrative Primacy is an interpretive construct applied post-hoc to documentary evidence; it cannot be tested against a counterfactual in the present study. Its utility is analytical rather than probative: it provides a vocabulary for describing a pattern across three otherwise unconnected episodes, and it points toward the structural level, rather than the individual level, as the appropriate locus for policy intervention. Whether the pattern observed in the 2021 Fujian case reflects a broader or reproducible phenomenon in comparable governance contexts is a question for future comparative research ^[31, 32].

Relationship to Existing Concepts

Administrative Primacy overlaps with, but is not equivalent to, several existing concepts in governance and organisational-ethics scholarship. Table 4 summarises the distinction. The framework's contribution is not a new name for an existing phenomenon, but the operationalisation of a governance pattern, administrative performance objectives displacing clinical and ethical priorities, into a documentary three-step procedure that can be applied consistently across cases: identifying the concurrent administrative and clinical/ethical demands in a given episode, locating the candidate KPI or performance pressure at issue, and stating explicitly what the available public record does and does not establish about the link between them.

Table 4
Relationship between Administrative Primacy and existing governance and organisational-ethics concepts.

Existing concept	Primary focus	What Administrative Primacy adds
Perverse incentives	Unintended behavioural responses to an incentive structure	Names the specific incentive type (administrative KPIs) and applies a three-step procedure for tracing it through documentary evidence
Accountability gap	Absence or diffusion of accountability for a decision	Focuses on the presence of a competing objective (administrative performance) rather than the absence of oversight
Clinical autonomy	Clinician-level decision authority	Locates the pressure at the system/governance level rather than the individual clinician level
Moral distress	An individual professional's experience of constrained action	Treats the phenomenon as a structural governance pattern rather than an individual psychological experience

Domain 1 as the Strongest Evidentiary Domain

Among the three domains, Domain 1 rests on the most direct evidentiary foundation. Concern 1 is supported by documentary evidence, with the relevant photograph classified as Tier 2 because its institutional provenance could not be independently established, and the named regulatory text itself (WS 521–2017, Section 4.3) classified as Tier 1; the absence of an adult companion is directly observable in the photograph and requires no further inference to establish. Concern 2 rests on the same Tier 2 photograph: the apparent illumination status of the UV lamp is visible in it, but because operational status cannot be verified beyond visual appearance, the interpretation that the lamp was operating is a Tier 2 attribution rather than a Tier 1 finding. Concern 3 is a Tier 2/3 observation that raises a proportionality question but does not assert a finding.

The co-occurrence of all three in a single documented encounter is itself noteworthy. Pediatric radiation safety in emergency mass-diagnostic contexts has received limited systematic attention in the medical ethics literature ^[23, 24, 33]. The scenario of simultaneous ionising and non-ionising radiation exposure in a pediatric patient without adult oversight is not, to this author's knowledge, addressed as a combined exposure pathway in the WHO emergency response guidance document reviewed for this study ^[34], an observation bounded to that document rather than a claim that no guidance addressing it exists anywhere; confirming a genuine gap would require a systematic review of pediatric emergency-imaging guidance, which is outside the scope of this case analysis.

The Poisson Model as an Epistemic Question-Raiser

The Poisson analysis in Domain 2 is an exploratory Tier 3 observation intended to contextualise the reported outcome against available comparator data and to assess whether independent verification may be warranted. It is not presented as evidence of misreporting, and the non-exchangeability of the

two cohorts, acknowledged in the Limitations section, means its results should not be treated as establishing a specific probability of any event.

The model's function is better understood in terms of epistemic obligation: when an official report produces an outcome that differs substantially from comparator-based expectations, it may raise a question regarding the completeness or contextual interpretation of the available data that the reporting institution is positioned to address through primary record disclosure^[35, 36]. The finding in Domain 2 is this question, not a specific probability value. The question has not been resolved by independent verification, and that absence is itself noted.

Context, Comparability, and Generalisability

Document-based ethical analyses of governance patterns in emergency health responses are established in the medical ethics and public health governance literature^[4, 6, 29]. Historical analyses have examined institutional responses to the HIV blood supply crisis^[37], governance failures during the early SARS response^[38], accountability deficits in the Ebola response^[39], and suppression of epidemiological dissent in various pandemic contexts^[40]. The Administrative Primacy framework proposed here is related to these precedents and draws on their conceptual vocabulary, while applying it to the specific context of subnational outbreak response using contemporaneous documentary evidence.

The generalisability of findings from a single case study is inherently limited. The present analysis should be understood as identifying a pattern in one documented case and proposing a framework for examining similar patterns in comparable cases, not as establishing the prevalence or universality of the pattern. Systematic comparative application of the Administrative Primacy framework across multiple outbreak contexts and governance systems is recommended as a direction for future research^[31].

Candidate Directions for Governance Review, Bounded to the Scope of This Case

The three domains documented in this single case do not, on their own, establish the existence of gaps in international guidance or systems; that would require a systematic review of existing standards, which falls outside the scope of a document-based case analysis. What the case does support is a narrower, testable set of questions that a governance-review process could take up. These are stated below as candidate directions for further inquiry, not as findings about the adequacy of any existing framework:

First, the co-occurrence documented in Domain 1, simultaneous ionising and UV-C exposure of an unaccompanied child during a mass-diagnostic response, is not, to this author's knowledge, addressed as a combined scenario in the WHO guidance reviewed for this study^[34]. This is offered as an observation bounded to the guidance documents this study reviewed, not as a claim that no such guidance exists anywhere; a systematic guidance review, which this study did not conduct, would be needed to confirm whether this is a genuine gap rather than an omission specific to the documents

consulted here. If confirmed, it would be a narrow, checkable candidate for inclusion in future revisions of pediatric mass-diagnostic protocols.

Second, this single case documents one instance in which a compressed training timeline preceded a large-scale student mobilisation; it does not establish that occupational-protection standards for pre-licensure trainees are generally absent or inadequate across health systems. Institutions conducting emergency workforce mobilisation may find it useful to examine, on their own initiative, whether pre-deployment training, individualised risk disclosure, and post-deployment monitoring for pre-licensure trainees are documented and auditable in their own protocols; this case offers one illustration of why that internal review might be worthwhile, not a claim about the state of such standards elsewhere.

Third, Domain 3 illustrates, in one documented instance, how an administrative exception at the region's designated tertiary facility, with no publicly documented equivalent backup facility, can create structural conditions under which critical-care access cannot subsequently be independently verified, because no mortality or emergency-transfer data are available to confirm or refute impact. Whether this points to a broader need for facility-level continuity-of-care monitoring during single-facility service disruptions is a question this case raises for health system administrators and researchers to examine empirically in other settings; the present analysis does not extend to a recommendation for any specific international verification mechanism, which would require evidence well beyond a single case.

Limitations

First, all findings are based on publicly available sources. The evidentiary strength of the analysis is bounded by what official media chose to report and what institutional documents entered the public record. The study cannot account for information not in the public domain, and primary records that would confirm, revise, or refute the concerns raised are not available.

Second, the Poisson comparator cohort (Tianshui, Gansu) may not be exchangeable with the Putian cohort. Differences in local viral load, PPE quality, baseline seroprevalence, and testing sensitivity could each independently explain the different infection outcomes. The sensitivity analyses in Supplementary Methods S1 explore the range of these effects but cannot resolve the non-exchangeability concern.

Third, the causal pathway from the Green Channel administrative decision to specific clinical outcomes is established through logical reconstruction and temporal sequence, not controlled comparison. The scheduling table documents staff isolation but does not independently establish the Green Channel decision as the proximate cause of downstream service disruption.

Fourth, this study examines a single outbreak event. Single case studies are appropriate for hypothesis generation and framework development, but they do not establish the prevalence or generalisability of the pattern identified. Comparative research across multiple cases is required to assess the broader applicability of the Administrative Primacy framework.

Fifth, the ethical framework treats student mobilisation as an occupational context. If any students were concurrently enrolled as participants in a formally constituted research study, research ethics consent standards under the Declaration of Helsinki would additionally apply; the public record does not resolve this question.

Sixth, the classification of evidence by tier, while intended to enhance transparency, is a categorisation made by the author and is subject to the same interpretive limitations as any qualitative assessment. Readers are encouraged to consult the original sources cited in each tier classification.

Seventh, the domain-specific KPI attributions offered in the Discussion (linking Domain 1 to diagnostic throughput, Domain 2 to testing-coverage speed, and Domain 3 to days-to-clearance) are inferences drawn from the publicly documented structure of Dynamic Zero-COVID governance, not findings anchored in an internal administrative record. No directive, meeting minute, or performance-review document connecting a named KPI to any of the three decisions was available for this study. These attributions should be read as the most plausible interpretation consistent with known governance structure, not as demonstrated causal mechanisms.

Conclusions

This document-based ethical case analysis of three publicly reported episodes from the 2021 Fujian Delta variant outbreak identifies three domains in which the available evidence is consistent with, and may be interpreted through, an Administrative Primacy governance pattern.

First, the simultaneous co-occurrence of unaccompanied CT imaging, an apparently illuminated UV germicidal lamp during the child's presence, and CT use during an outbreak in which pediatric cases were characterised by the NHC-designated lead expert as predominantly mild, each supported by publicly accessible documentary sources and assessed against named regulatory standards, raises specific concerns about pediatric radiation safety in emergency diagnostic contexts, and identifies a question for systematic review of existing pediatric emergency-imaging guidance, a review that falls outside the scope of this single case.

Second, the mobilisation of 320 pre-licensure students under a pledge-rally ceremonial format, with no public documentation of individualised risk disclosure or consent, and a single overnight training session, combined with an officially reported zero-infection outcome that is lower than would be anticipated under the stated comparator assumptions, raises a question about the consistency of the reported outcome with the documented exposure parameters, a question that warrants independent verification, not a finding of misreporting.

Third, the Green Channel administrative exception was temporally associated with a sequence of events that culminated in ICU closure at the designated tertiary facility, creating structural conditions that may have been associated with reduced access to emergency care; no mortality estimate is made, and independent investigation through primary vital statistics records is warranted.

These three concerns may be interpreted through the Administrative Primacy framework as consistent with a governance pattern in which administrative performance metrics may, in some circumstances, come into tension with clinical and ethical priorities. The framework is proposed as a replicable analytical tool for hypothesis generation in future comparative research on governance-ethics alignment in emergency health responses.

Three candidate directions are proposed for further inquiry, each bounded to what this single case can support: a check of whether pediatric mass-diagnostic guidance addresses combined ionising/UV-C exposure scenarios; institutional-level review of documentation for pre-licensure trainee training, disclosure, and monitoring practices; and empirical research, across multiple settings, into whether single-facility administrative exceptions of this kind are associated with measurable disruption to critical-care continuity.

Abbreviations

CT

computed tomography

ICU

intensive care unit

IHR

International Health Regulations

KPI

key performance indicator

NHC

National Health Commission (China)

PPE

personal protective equipment

SARS-CoV-2

severe acute respiratory syndrome coronavirus 2

UV

ultraviolet

WHO

World Health Organization.

Declarations

Ethics Approval and Consent to Participate

This study involved no direct recruitment of human participants, no clinical intervention, and no use of identifiable personal data. All data were drawn from publicly available, non-identifiable sources. Because the study involved no human-subject recruitment, intervention, or access to identifiable personal data, it

was not submitted for institutional review board review. Ethical interpretation was informed, where applicable, by selected principles of the Declaration of Helsinki, supplemented by WHO outbreak-ethics and occupational-safety guidance.

Consent for Publication

Not applicable. No identifiable personal data are included in this manuscript. The child depicted in Fig. 1 is fully covered in personal protective equipment and is non-identifiable. The image is sourced from official state media and reproduced for academic analysis with full attribution.

Competing Interests

The author declares no competing interests.

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Author Contribution

D.C. conducted the literature search, designed the study, analyzed and interpreted the data, and wrote the main manuscript text. D.C. also prepared all figures and tables. The author read and approved the final manuscript.

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Data Availability

All data analysed during this study are derived from publicly available sources and are included in this published article and its supplementary information files.

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Figures



Figure 1

Official media photograph (Fujian Health News, September 2021 [21]) documenting a four-year-old patient, fully covered in personal protective equipment, in the CT examination room of Putian University Affiliated Hospital. An illuminated UV germicidal lamp appears visible in the upper portion of the room during the child's presence. The child entered the room unaccompanied. This photograph provides Tier 2 documentary evidence of the simultaneous co-occurrence of the deviations described in Concerns 1 and 2: an illuminated UV germicidal lamp, consistent with operation, during patient presence (which would be contrary to GB 19258-2012, Section 5.3 if the lamp was operating as depicted) and absence of adult accompaniment (contrary to NHC WS 521-2017, Section 4.3). Institutional provenance of the photograph beyond its publication by the named outlet is not independently established. Source: Fujian Health News (福建健康新闻), official state media, published September 2021.

Supplementary Files

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- [S1PoissonDerivationCai.xlsx](#)
- [S2Exhibitv4Caifixed.docx](#)