

A Case for the Low-Acuity Patient Treatment Station

Reducing the Length of Stay for Emergency Department Visits

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A Case for the Low-Acuity Patient Treatment Station

Reducing the Length of Stay for Emergency Department Visits

Background

Emergency departments across the country are facing significant space constraints, especially in urban settings. One strategy that could help health care organizations reduce costs and alleviate overcrowding is providing treatment spaces that could be used exclusively for “vertical” or chair/recliner-centric patients in the emergency department, but the 2018 edition of the FGI *Guidelines* does not include minimum design requirements or guidance for such spaces. In this paper, we propose new language for inclusion in the 2022 *Guidelines* that would allow for provision of patient care stations designated for treatment of low-acuity patients in emergency departments and freestanding emergency facilities.

The intent of the proposed language is to:

1. Formalize what is currently happening de facto in many emergency settings.
2. Establish minimum requirements for low-acuity patient treatment stations that support an appropriate standard of care.

3. Improve access to care by reducing costs, overcrowding, and wait times in emergency departments and freestanding emergency facilities.

In the last 10 years, emergency departments have experienced increased patient acuity and volume (2.5 percent to 5 percent per year nationally), leading to increased waiting times and decreased access to care in some instances. A large number of patients are being cared for in large open waiting rooms or in hallways and corridors, where they often sit in straight-back chairs that do not meet minimum space, privacy, acoustic, or medical standards. Without guidelines for low-acuity patient treatment spaces in the emergency department, authorities having jurisdiction (AHJs) are often unable to allow hospitals and freestanding emergency facilities to provide smaller, patient-friendly, medically appropriate treatment spaces to address this situation.

Innovative hospitals have determined that approximately 50 percent of emergency department patients need to be treated in a single-patient room or in a bay or cubicle in a multiple-patient treatment room; these types of patients are sometimes referred to as “horizontal” as they typically are lying down. The remaining patients do not require bed space and can tolerate being treated in a treatment chair or recliner; these types of patients are sometimes referred to as “vertical” as they typically remain in a seated position. In the FGI *Guidelines*, spatial needs for horizontal patients are clearly understood and well-defined; however, the reduced space needs of vertical patients are not addressed.

Many emergency departments employ a “split-flow” or “segmented” treatment modality to improve efficiency, dividing the incoming flow of patients into two treatment streams:

1. Patients who need to be in a bed (horizontal patients) are typically housed in a bay or cubicle (80 square feet), treatment room (120 square feet), or fast-track room (100 square feet) in the emergency facility.
2. Patients who do not require a bed (vertical patients) are

often inappropriately housed in one of the spaces listed above, in a waiting room, or in a corridor.

The purpose of the requirements for low-acuity treatment stations proposed in this paper is to provide standards for spaces in which vertical patients can be treated more efficiently with accommodations for visual and speech privacy and a configuration that preserves the efficiency of the split-flow concept. Use of such spaces should allow health care organizations to reduce waiting times as low-acuity patients will no longer be required to wait for available bed space. These low-acuity treatment spaces are best suited for ESI Level 5, ESI Level 4, and a portion of ESI Level 3 patients as well as those waiting for test results or discharge.

Introduction of the Low-Acuity Patient Treatment Station Concept

The low-acuity treatment station was introduced to FGI's 2018 Health Guidelines Revision Committee (HGRC) in April 2017. At that time, a minimum clear floor area of 40 square feet, with a 5-foot width, was proposed for each station. The suggested minimum dimensions had been determined by surveying the amount of space currently being used by clinical teams to treat low-acuity vertical patients in existing emergency departments, mocking-up such treatment stations, and running simulations with clients.

Many HGRC members supported the concept, but some expressed concern about the proposed size and dimensions and requested additional information. As well, some members suggested the minimum clear floor area should be increased to 48 square feet, while others requested an increase in width to 6 feet with a 72-square-foot

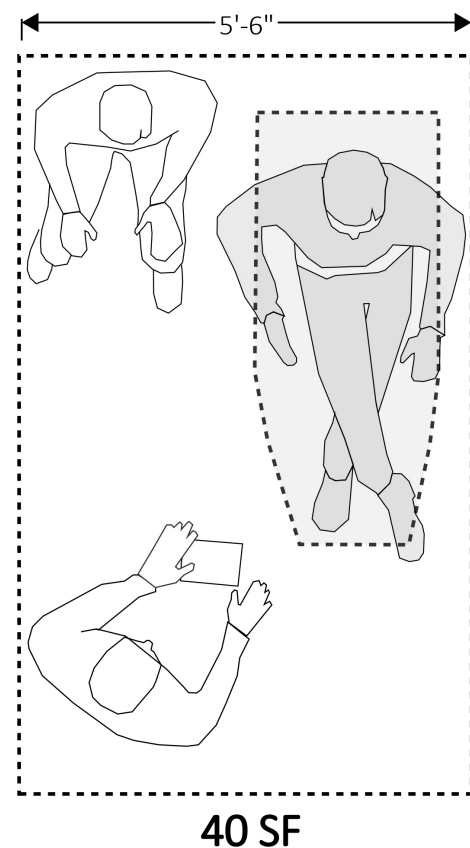


Figure 1: Proposed Low-Acuity Patient Treatment Station

Proposed Language for Inclusion in the 2022 *Guidelines*

This language is proposed for the emergency department and freestanding emergency facility chapters in the 2022 *Guidelines for Design and Construction of Hospitals* and *Guidelines for Design and Construction of Outpatient Facilities*.

(Note: Indented section numbers that begin with an A are appendix items and therefore advisory information, not requirements.)

2.2-3.1.3.6 Emergency department treatment room or area

***(8) Low-acuity patient treatment station.**

Where low-acuity patient treatment station(s) are provided in the emergency department, they shall meet the requirements in this section and in Section 2.1-3.2.3.2 (Patient care station features):

A2.2-3.1.3.6 (8) Low-acuity patient treatment stations. Efficient space utilization in emergency settings is paramount to serving increasing numbers of patients and sustaining operational success. Low-acuity patient treatment stations provide an option that accommodates the needs of patients who do not require a bed and thus optimize space use. These treatment stations are intended to complement single- and multiple-patient treatment rooms and fast-track areas.

Implementing use of low-acuity treatment stations may result in patients being served more quickly because those with minor injuries do not have to wait for an available

gurney or treatment room. Types of patients appropriate for a low-acuity patient treatment station may include ESI Level 5, ESI Level 4, and some ESI Level 3 patients as identified in the Emergency Severity Index (Agency for Healthcare Research and Quality) as well as patients with less urgent needs such as prescription renewals, minor lacerations, a sprained ankle, or a rash.

(a) Space requirements

- (i) Area. Each low-acuity patient treatment station shall have a minimum clear floor area of 40 square feet.
- (ii) Width. Each low-acuity patient treatment station shall have a minimum width of 5 feet 6 inches.

***(b) Privacy.** Where two or more low-acuity patient treatment stations are provided, they shall be separated by curtains, privacy screens, or partitions.

A2.2-3.1.3.6 (8)(b) Privacy. Provision of a means to separate low-acuity treatment stations that complies with HIPAA and affords visual and speech privacy should be considered. Use of partitions with sound-absorbing panels and sound-masking devices may improve privacy for these patients.

(c) Hand-washing stations

- (i) A minimum of one hand-washing station that complies with Section 2.1-2.8.7.2

(Hand-Washing Station—Design requirements) shall be provided in the low-acuity patient care area.

- (ii) Where more than four low-acuity treatment stations are provided, see Section 2.1-2.8.7.3 (Hand-Washing

Stations—Additional requirements for hand-washing stations that serve multiple patient care stations) for requirements.

Table 2.1-1: Electrical Receptacles for Patient Care Areas in Hospitals

Section	Location	Number of Single Receptacles	Receptacle Locations
DIAGNOSTIC AND TREATMENT AREAS			
2.2-3.1.3.6 (8)	Emergency low-acuity treatment station	4	Convenient to chair/recliner

Table 2.1-2: Location for Nurse Call Devices in Hospitals

KEY: ● Required □ Optional

Section	Location	Patient Station	Bath Station	Staff Assistance Station	Emergency Call Station	Nurse Master Station	Duty Station	Notes
DIAGNOSTIC AND TREATMENT AREAS								
2.2-3.1.3.6 (8)	Emergency low-acuity treatment station	●						

Table 2.1-3: Station Outlets for Oxygen, Vacuum (Suction), Medical Air and Instrument Air Systems in Hospitals

Section	Location	Oxygen	Vacuum	Medical Air	WAGD ²	Instrument Air
DIAGNOSTIC AND TREATMENT AREAS						
2.2-3.1.3.6 (8)	Emergency low-acuity treatment station	— ⁹	— ⁹	—	—	—

⁹ Use of portable equipment in lieu of a piped gas system shall be permitted.

clear floor area—just 8 square feet less than a treatment bay in a multiple-patient treatment room.

The FGI Workshop and the Goldilocks Zone

To gather additional input and determine a minimum width and square footage that would meet the needs of patients and clinicians, FGI facilitated a workshop at the July 2017 joint AIA Academy of Architecture for Health/American College of Healthcare Architects Summer Leadership Summit in Chicago.* At this workshop, the history and background of the low-acuity treatment station was presented, followed by an interactive activity during which attendees tested and ran scenarios in simulated low-acuity treatment stations of different dimensions.

Two stations were set up and outfitted with a patient recliner and visitor side chair. The Stryker TruRize recliner with a width of 34 inches was specifically selected because it is one of the larger recliners. Other recliners on the market range from 29 inches to 30 inches in width.

Workshop participants first evaluated two treatment stations of 40 square feet and 44 square feet using the 34-inch recliner. Subsequently, the smaller station was transformed into a 48-square-foot space. Although opinions about the optimal size for a low-acuity treatment station were varied, the participant feedback was clear that the critical dimension was the width of the space. All factors considered, the result of the simulations suggested a minimum width of 5 feet 6 inches for a low-acuity station is the minimum required to meet the clinical needs of vertical patients.

*The workshop was organized by Douglas S. Erickson of FGI, with David Vincent of HKS, Christine Carr, MD, of MUSC and ACEP, and Bryan Langlands of NBBJ leading the effort focused on the low-acuity treatment station. The workshop event had more than 150 participants from varying disciplines, including architects, interior designers, engineers, infection control professionals, AHJs, clinical care providers (owners, physicians, and nurses), and FGI HGRC members.

The workshop attendees also voiced other concerns, including what happens in the event of a serious medical intervention or when a patient needs to be resuscitated. The physicians and nurses in the group explained it would be handled no differently than when patients collapse in the waiting room: “You call a team, get the patient onto a gurney, and take them to a trauma or resuscitation bay.” The situation in a low-acuity treatment station can be addressed similarly; however, it was also demonstrated that a treatment station that is 5 feet 6 inches by 7 feet 6 inches (41.25 square feet) allows the recliner to be pulled away from the headwall and moved into the circulation space to gain access to the patient’s head while still providing visual privacy using the curtains around each patient care station.

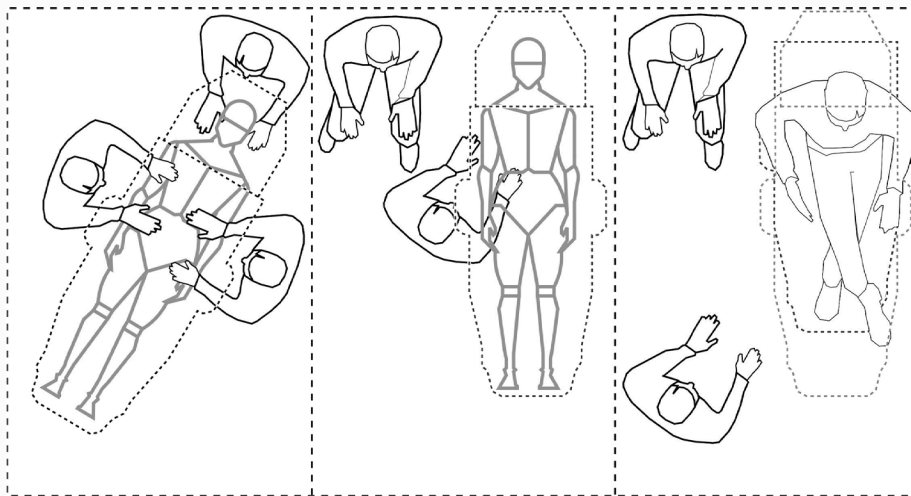


Figure 2: Alternate Configurations for a Low-Acuity Treatment Station

Through a process of debate, examination, and collaboration, the authors concluded that a clear floor area of 40 square feet with a minimum width of 5 feet 6 inches would provide adequate space to support a patient in a recliner, a caregiver examining and treating the patient, and a visitor accompanying the patient.

The authors of this white paper feel a clear floor area of 40 square feet with a minimum width of 5 feet 6 inches is the appropriate minimum size for a low-acuity treatment station in an emergency facility for a number of reasons:

1. The FGI-hosted workshop, in which the space and furniture were mocked-up and simulations were performed with multidisciplinary teams that included members of the American College of Emergency Physicians, helped determine the revised minimum width of 5 feet 6 inches is the minimum necessary for performing the clinical tasks required.
2. Workshop participants also agreed that any space smaller than 40 square feet with a width of 5 feet 6 inches would compromise safety and efficiency.
3. A minimum space requirement larger than the proposed 40 square feet would be contrary to the reason for providing this space option. Requiring low-acuity treatment stations to be larger than 40 square feet would result in spaces that are oversized, and pursuing these larger treatment stations would not make spatial or financial sense.
4. The proposed size of 40 square feet would give existing emergency departments the flexibility to easily transform treatment bays of 80 square feet into two low-acuity treatment stations. Additionally, a minimum width of 5 feet 6 inches could allow five stations to fit in a typical 30-foot column bay, depending on the width of the partitions.

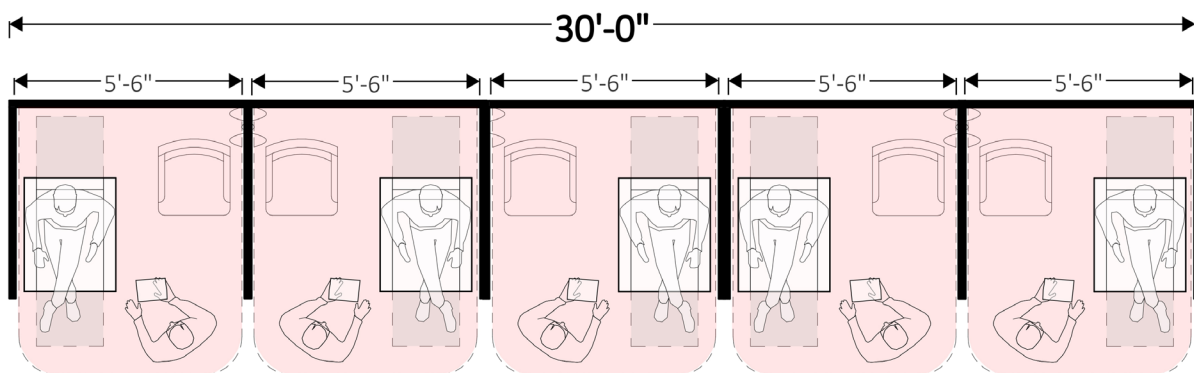
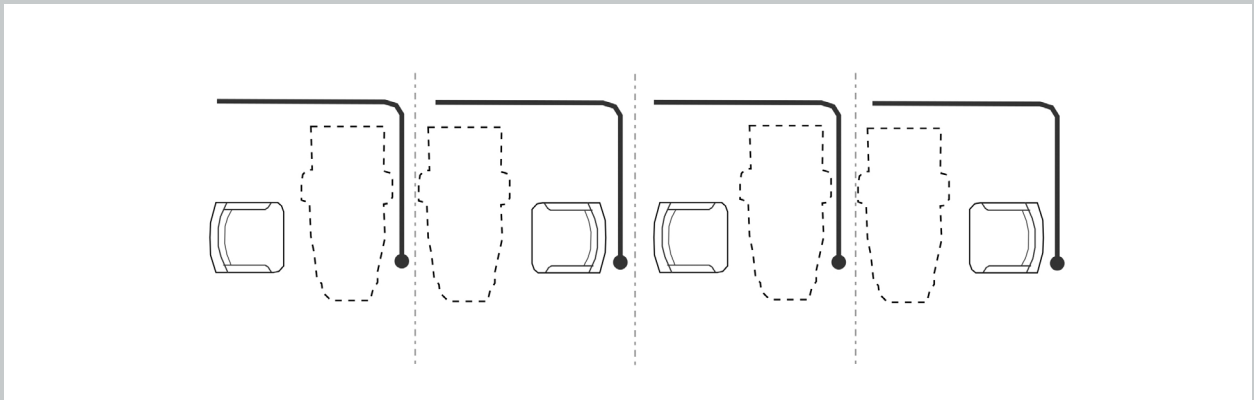


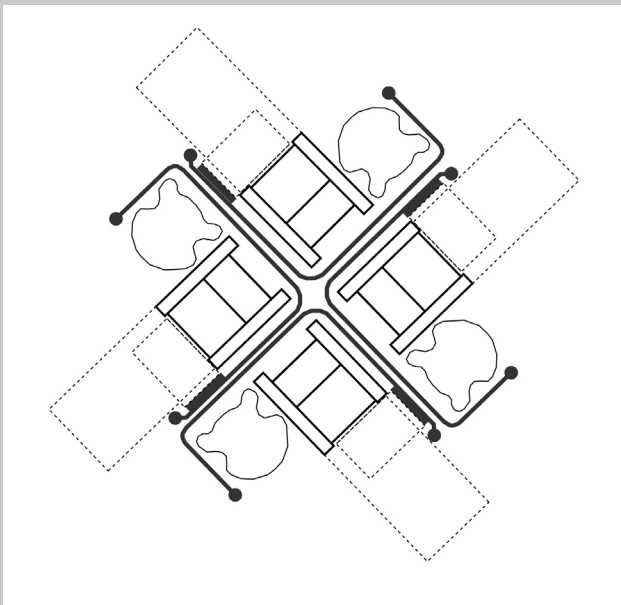
Figure 3: Five Low-Acuity Stations in a 30-Foot Column Bay

Alternative Layouts for Low-Acuity Patient Treatment Stations

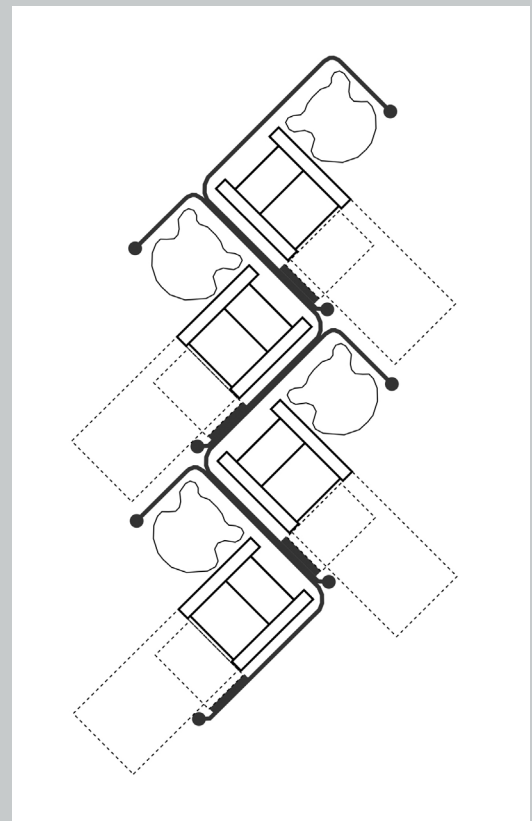
Low-acuity treatment stations can be combined in a variety of configurations to provide flexibility in design.



Linear



Pinwheel



Diagonal

Small vs. Large Treatment Stations

Low-acuity patient treatment stations of 40 square feet will:

- Intentionally limit clinical use to vertical patients.
- Sufficiently accommodate patient safety, privacy, and satisfaction concerns.
- Remove the need for hospitals to use makeshift and non-compliant spaces.

Low-acuity treatment stations larger than 40 square feet:

- Could entice staff to use them for inappropriate clinical functions.
- May encourage use of a gurney in an undersized space.
- Would be less space efficient as they are similarly sized to standard emergency treatment bays or cubicles.

Spatial requirements in the *Guidelines* represent the minimum amount of space required to safely and efficiently perform a task. Minimum requirements in the *Guidelines* are never suggested or offered as the ideal size. Indeed, these minimums may not be the preferred size of many institutions or designers, but have been determined to be the minimums needed to safely perform the tasks likely to take place in that space.

Consistent Standards for Patient Treatment Areas

Emergency departments today are already creating their own version of low-acuity treatment stations, often in open areas or former examination rooms with chairs lined up side by side. These makeshift treatment stations do not meet patient needs and do not provide space for visitors, patient privacy, adequate lighting, nurse call devices, nursing oversight, or convenient access to toilets or hand-washing stations.

The proposed language for the 2022 *Guidelines* establishes minimum requirements for patient and staff support similar to those of other treatment areas in the emergency department. As a permitted treatment area, the low-acuity treatment station would carry minimum requirements to support the standard of care, including those for:

- Hand-washing stations (one per four low-acuity treatment stations and for each major fraction thereof)
- Patient toilet rooms (one per six treatment stations and for each major fraction thereof)
- Privacy (in the form of curtains, screens, or partitions)
- Examination light (portable or fixed)
- Accommodations for documentation (written or electronic)
- Space for a visitor's chair

- Electrical receptacles (four outlets convenient to chair/recliner)
- Nurse call devices (patient station required)
- Medical gas station outlets (allowed but not required)
- Administrative center or nursing station
- Clean supply room
- Soiled workroom or soiled holding room
- Equipment/supply storage
- Environmental services room

Conclusion

There is considerable need for treatment spaces in emergency facilities that can accommodate patients who can be seen in recliners, reserving beds in treatment rooms and bays for those patients who truly need to be horizontal. Research and field experience have shown that when these types of spaces are incorporated into the emergency department, the average length of stay for the entire emergency department population—not just the low-acuity patient—is greatly reduced, patient satisfaction is increased, and facilities are more appropriately sized for the patient population.

It is the authors' intent to propose this new language for inclusion in the 2022 edition of the FGI *Guidelines*. This white paper is being published as part of an effort to give the health care industry an opportunity to study and discuss this option ahead of the 2022 revision cycle. As well, institutions, designers, clinicians, administrators, and others can use this information to ask their AHJs to consider permitting use of low-acuity treatment stations now to help alleviate one of the challenges facing emergency departments today.

Discussing *Guidelines* Equivalency with the AHJ

The *Guidelines* is intended to set forth minimum standards for design and construction, with the expectation there is still room for innovation and advancement in the health care delivery industry. In appendix section A1.1-1.2.2 of the FGI 2018 Hospital and Outpatient *Guidelines*, it explains “the *Guidelines* text is not intended to restrict innovation and improvement in design or construction techniques. Accordingly, authorities adopting these standards as code may approve plans and specifications that contain deviations if they determine the applicable intent or objective of the standards has been met.” Additionally, Section 1.1-6 (Equivalency Concepts) explains it is the intent of the *Guidelines* to permit and promote equivalency concepts.

Resources

Advisory Board. "Practice #4: Expedited Triage" and "Practice #8: Split-Flow Management" in *The High Performance ED: Reforming Core Emergency Department Processes*. (<https://www.advisory.com/Research/Physician-Executive-Council/Studies/2008/The-High-Performance-ED>, 2008)

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ABOUT THE AUTHORS



Bryan Langlands, AIA, ACHA, EDAC, LEED GA, is a health care programmer, planner, and designer of academic medical centers, specialty centers, and community hospitals. His list of clients includes NYU Langone Health System, Mt. Sinai Health System, University of Pennsylvania Health System, Children's Hospital of Philadelphia, Jefferson Health, University of Rochester Medical Center, and Vanderbilt University Medical Center. Mr. Langlands participated on several subcommittees during the 2014 FGI *Guidelines* revision cycle and was a member of the 2018 Health Guidelines Revision Committee. He is a principal at NBBJ in the New York office.



David Vincent, AIA, ACHA, LEED AP, has developed an expertise in the programming and planning of diagnostic and treatment areas of health care facilities and has senior-level planning experience in clinical services and inpatient care units. Through his award-winning work with Washington Hospital Center's project ER-One, Mr. Vincent has developed vital experience in contingency planning and designing for event-based medical consequences. In addition, his planning work with nationally respected patient safety advocate Safe by Design gave him the opportunity to develop advanced planning concepts that reflect the latest theories in planning for patient safety. Mr. Vincent has written for health care-related publications and currently is involved with several ongoing research initiatives.



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