Advanced Practitioners in Hematology and Oncology: State of the Workforce

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Authors' disclosures of conflicts of interest are found at the end of this article.

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https://doi.org/10.6004/jadpro.2023.14.7.10

Abstract

Advanced practitioners (APs), including nurse practitioners (NP), physician assistants (PA), pharmacists, and nurses with advanced degrees, including advanced practice registered nurses (APRNs), play a critical role in quality, timely, and expert cancer care. Burnout, retention, and resilience have been studied in physician groups. However, there is a paucity of data specific to APs in hematology and oncology. The Advanced Practitioner Society for Hematology and Oncology (APSHO) conducted an online survey that used validated tools to measure burnout and work-life balance among APs who are members of APSHO. Among the 366 respondents completing all items of the Maslach Burnout Inventory (MBI) and the Areas of Worklife Survey (AWS), participants felt engaged (34.2%) but overextended (37.4%) and reported burnout (17.8%). These results indicate a need to evaluate workloads, improve communication, and deploy strategies for support and advocacy to improve work-life balance within this group. The stability of the AP workforce is essential to excellence in patient care, provider resilience, and cancer outcomes. Creating a culture of open communication and strong AP leadership with data streams and metrics specific to the hematology and oncology workforce will help to inform health systems, consumers of health care, professional societies, educational institutions, and APs. Systematic and regular assessment of burnout and barriers to work-life balance for APs is essential to sustained adaptation of strategies to reduce burnout and retain APs.

Advanced practitioners (APs) in hematology and oncology (heme/onc) represent a specialty workforce critical to the delivery of timely, quality, expert cancer care across a broad range of cancer care entities. The exact number of APs employed across these settings is an elusive number to quantify, yet, like other health-care workers, this group of specialized providers is at risk for leaving oncology practice and in some cases health care

J Adv Pract Oncol 2023;14(Suppl 3):8–16

altogether due to burnout and the lack of work-life balance (HaGani et al., 2022; Shanafelt et al., 2019; Tetzlaff et al., 2022). Most data supporting this trend were collected prior to the COVID-19 pandemic, underestimating the impact of this unprecedented strain on the health-care system and the clinician providing cancer care (Granek & Nakash, 2022). Advanced practitioner leaders face challenges in maintaining a stable and agile AP workforce at a time characterized by oncology workforce shortages and increasing complexity of care across cancer diagnoses and clinical settings.

CURRENT STATE OF THE ONCOLOGY WORKFORCE

An estimated 1.9 million new cancer cases will be diagnosed in 2023. In 2022, there were an estimated 18.1 million cancer survivors. This number is expected to increase by 24.4%, reaching 22.5 million by 2032 (Siegel et al., 2023). At the same time, there were 13,365 oncologists engaged in patient care in 2022, with a growing trend in oncologists leaving patient care to pursue careers in industry (American Society of Clinical Oncology [ASCO], 2022). The projected shortfall of oncologists (medical, hematology, radiation, and surgery) by 2025 is 2,400 to 4,000 (Yang et al., 2014). Cancer care delivered in underserved and uninsured populations, predominantly in rural settings, is particularly at risk, with 64% of counties in the United States having no local oncologist and 12% having no oncologist in the local or adjacent counties (Shih et al., 2021).

NEED/RATIONALE

Filling gaps in access to heme/onc providers is crucial to timely, quality, expert cancer care. Advanced practitioners practicing at the top of their license can create solutions for many of these gaps. Literature supports patient satisfaction with cancer care provided by APs as a part of the interdisciplinary team (Pickard et al., 2023). Unfortunately, in addition to the predicted shortage of oncologists, burnout and the lack of work-life balance are driving pharmacists, nurse practitioners (NPs), and physician assistants (PAs) to leave the heme/onc workforce as well.

ADVANCED PRACTITIONERS IN HEMATOLOGY AND ONCOLOGY

Heme/onc APs have become integral to the delivery of direct patient care as members of the interdisciplinary team. According to Bruinooge and colleagues (2018), 80% to 85% of NPs and PAs dedicate their time to providing direct patient care, including return and new patient visits, specialized services and procedures, counseling, prescribing medications including antineoplastic therapies, management of adverse events, surgical first-assists, genetic counseling, and supportive and palliative care. Approximately 75% of oncology practices employ NPs and PAs, adding to the productivity and quality care within these practices (ASCO, 2017).

The role of the oncology pharmacist has evolved from primarily a focus on oversight of compounding and dispensing of anticancer medications to ensure safety, to one that includes operating specialty pharmacies, investigational drug monitoring/services, pharmacogenomics, and more direct patient care activities through education, oral chemotherapy clinics, adherence checks, and toxicity monitoring (Carter, 2016; Holle et al., 2020; Muluneh et al., 2018). The title of board-certified oncology pharmacist (BCOP), like board-certified oncology nurse practitioner (AOCNP®), implies expertise within oncology practice. As with NPs and PAs, the scope of the BCOP role can be determined by institutional, practice, and state regulations. Oncology pharmacists may have a collaborative practice agreement with their providers, allowing for pharmacotherapy interventions, oral chemotherapy management, as well as treatment plan management (Patel et al., 2023). A recent study by Patel and colleagues (2023) reviewed 4,686 pharmacist tasks and interventions. The oncology pharmacist spent on average 17.5 minutes per intervention. Over a 6-month period, these interventions projected an annualized value of approximately $1.1 million dollars from nine oncology pharmacists working in an ambulatory cancer center.

METHODS

Here, we describe the heme/onc AP workforce based on data obtained from surveys conducted by the Advanced Practitioner Society for

Hematology and Oncology (APSHO) between 2021 and 2023 that elucidate the AP perspective by practice types, work schedules, productivity, burnout, and work-life balance. The organization was founded in 2014 and aims to support high-quality, cost-effective oncology patient care delivered through collaborative practice models that optimize the role of APs.

The Professional Development and Leadership Committee within APSHO developed a survey to measure productivity, burnout, and work-life balance. The survey was launched on the Mind Garden platform. Mind Garden is an international publisher of psychological assessments, including the Maslach Burnout Inventory™ (MBI) for health-care professionals and the Areas of Worklife Survey (AWS). The MBI is a validated tool used in 88% of burnout research publications to measure burnout as defined by the World Health Organization (WHO; Hadžibajramović et al., 2020). The AWS assesses employees' perceptions of work setting qualities that play a role in whether they experience work engagement or burnout. The AWS is a brief companion questionnaire to the MBI with demonstrated reliability and validity across a variety of occupational settings. Together, the MBI and AWS measure both the extent of and association to burnout. Items added with the customization included AP role descriptors, productivity metrics, and open-ended questions.

An email was sent to APSHO members in mid-October 2022. Data were collected through February of 2023. A total of 416 APs (12% of total membership) completed the questionnaire. Of these, 366 (88%) completed all items on the MBI and AWS. More than 700 individuals opened the survey but did not submit their answers.

BURNOUT AND WORK-LIFE BALANCE AMONG APSHO MEMBERS

The demographics of survey participants (Table 1) align with the greater APSHO membership. Responses on years in current role and years in heme/onc indicate a split of experienced APs and those who are new to the specialty. The majority (61.7%) have been in their current heme/onc role for 10 years or fewer, suggesting prior roles in heme/onc, such as oncology nursing. Most APs

Table 1. APSHO Productivity, Burnout, and Work-Life Balance Survey: Demographics

Characteristic	No. (%)
Age, y	
< 35	48 (11.5)
35–44	118 (28.4)
45–54	134 (32.2)
55–64	83 (19.9)
≥ 65	33 (7.9)
Years in hematology/oncology	
≤ 5 y	83 (19.9)
6–10 y	105 (25.2)
11–15 y	68 (16.3)
16–20 y	51 (12.3)
> 20 y	109 (26.2)
Years in current role	
≤ 5 y	147 (35.3)
6–10 y	110 (26.4)
11–15 y	78 (18.8)
16–20 y	40 (9.6)
> 20 y	41 (9.9)
AP role	
NP	317 (76.2)
PA	64 (15.4)
Pharmacist	5 (1.2)
AP administrative	18 (4.3)
Other	12 (2.9)
Practice location	
Inpatient	24 (5.8)
Outpatient	327 (78.6)
Combined	65 (15.6)
Practice type	
Academic	155 (37.3)
Community	243 (58.4)
Other	18 (4.3)
Clinical FTE	
1.0	218 (52.4)
0.5–0.9	152 (36.5)
< 0.5	46 (11.1)

Note. NP = nurse practitioner; PA = physician assistant; FTE = full-time equivalent; WFH = work from home.
[a]Majority shared templates

Table 1. APSHO Productivity, Burnout, and Work-Life Balance Survey: Demographics (cont.)

Characteristic	No. (%)
Administrative FTE (aFTE)	
1.0	16 (3.8)
0.5–0.9	41 (9.8)
< 0.5	123 (29.9)
No administrative time	235 (56.5)
NP/PA provider only (*n* = 381)	
Days worked per week	
5	203 (53.3)
4	143 (37.5)
< 4	35 (3.2)
Hours scheduled per day	
> 10	5 (1.3)
10	107 (28.1)
8–9	258 (67.7)
< 8	11 (2.9)
Hours worked per day	
> 10	77 (19.9)
10	133 (34.9)
8–9	143 (37.5)
< 8	19 (7.7)
Hours worked at home/day	
WFH (8–12)	14 (3.7)
4–6	21 (5.5)
2–3	71 (21.4)
1.0–1.9	107 (28.1)
0.2–0.9	33 (8.4)
None	135 (35.4)
Visit model	
Shared	32 (8.4)
Independent	238 (62.5)
Blended	101 (26.5)
N/A	2 (0.5)
Visit template (excludes WFH)	
5–7	35 (9.1)
8–10	106 (27.8)
11–13	79 (20.8)
14–16[a]	97 (25.4)
> 16[a]	47 (13)
Return and new visits/day (excludes WFH)	
5–7	60 (12.7); 20 (5.2)
8–10	134 (35.2); 5 (1.6)
11–13	67 (17.6); 5 (1.6)
14–15[a]	48 (12.6); 1 (0.3)
≥ 16[a]	31 (8.3); 3 (0.9)
Do not see new patients	158 (41.5)

Note. NP = nurse practitioner; PA = physician assistant; FTE = full-time equivalent; WFH = work from home.
[a]Majority shared templates

practice in the outpatient (OP) setting (78.6%, *n* = 327), with fewer practicing in an inpatient (IP; 5.8%, *n* = 24) or combined OP/IP setting (15.6%, *n* = 65). The majority of APs taking part in this survey work in the community setting (58.4%, *n* = 243), with fewer practicing in academic (37.3%, *n* = 155) or other settings (4.3%, *n* = 18).

Results from the MBI (Table 2) and AWS (Table 3), indicate signs of burnout among this AP workforce. Scores for the three domains of burnout (emotional exhaustion [EE], depersonalization [DP], and personal accomplishment [PA]), are measured based on respondents' reports of the frequency of which individual items are experienced. Scaled scores are reported as a range across all items, with item scores ranging from never (score of 0) to every day (score of 6). Higher scores for EE and DP (≥ 3) and lower scores (≤ 2) for PA correspond to greater experienced burnout (Leiter et al., 2020).

Among the 366 APs who completed all items on the MBI and AWS, the scaled score for EE was 3.2, indicating that most APs in this survey experienced emotional exhaustion a few times a month to once a week, higher than the control group of more than 6,300 health-care professionals maintained by Mind Garden (scaled score = 2.6). Depersonalization (1.5 in both the AP group and control group) and PA (4.9 in both the AP group and control group) scores were consistent with a lower risk of

Table 2. APSHO Survey: Maslach Burnout Inventory (*n* = 366)

MBI component	Total score (0 = never, 6 = every day)	Significance
Emotional Exhaustion	3.2 (3 = A few times a month, 4 = once a week)	Higher Emotional Exhaustion scores contribute to burnout. A score of 3.2 implies a higher risk of burnout.
Depersonalization	1.5 (1 = a few times a year, 2 = once a month or less)	This group has a lower score for depersonalization. Higher scores are associated with burnout.
Personal Accomplishment	4.9 (4 = once a week, 5 = a few times a week)	This group has a good sense of personal accomplishment. Lower scores are associated with a higher risk of burnout.
Burnout profile percentages		
Engaged	34.2%	Higher engaged percentage is associated with lower EE and DP.
Ineffective	9.8%	A high ineffective percentage is associated with a low personal accomplishment score.
Overextended	37.4%	Implies feeling emotionally drained. This increased the risk of burnout.
Disengaged	0.8%	This low score implies that this group is engaged.
Burnout	17.8%	17.8% of this group meets the criteria for burnout.

Note. Emotional Exhaustion (EE) = feeling overwhelmed, stressed, and weary; the demands of the job feel far greater than one is able to give. Depersonalization (DP) = lost enthusiasm and job feels like a burden or a chore, indifference to patients. Personal Accomplishment (PA) = feelings of competence and effectiveness and having a beneficial impact on people.

burnout. Interestingly, among the 24 respondents identified as AP leaders (aFTE ≥ 0.75), scores for EE (3.1 vs. 3.2), DP (1.1 vs. 1.5), and PAC (5.2 vs. 4.9) show a similar risk of burnout to non-leaders, but a greater sense of accomplishment (Table 4). In bivariate analysis, EE was correlated with younger age (r = .122, p = .001, 95% confidence interval [CI]), taking work home (r = .121, p < .001, 95% CI), and a higher number of patients on the clinic template (r = .106, p = .03, 95% CI). High scores on EE are associated with feeling overextended and burned out (Leiter et al., 2020). Additionally, most AP leaders (80%) carry at least a small direct patient care load or may be in ratio in the instance of staff shortages,

Table 3. APSHO Areas of Worklife Survey (*n* = 366)

AWS component	Total score (0 = strongly disagree, 5 = strongly agree)	Significance Lower scores can contribute to burnout. A score ≤ 2 (disagree) implies a higher risk of burnout.
Workload	2.5 (2 = disagree, 3 = hard to decide)	Implies discordance with workload expectations.
Control	3.3 (3 = hard to decide, 4 = agree)	Implies some ambivalence toward sense of control (unclear leadership structure or expectations, lack of input or autonomy, etc.) and vulnerability for burnout.
Reward	3.3 (3 = hard to decide, 4 = agree)	Implies some ambivalence toward reward (recognition for contributions, inequity in pay, job perks, titles, etc.) and vulnerability for burnout.
Community	3.6 (3 = hard to decide, 4 = agree)	Implies some ambivalence toward community (social environment, positive connection, workplace culture, collaboration, trust).
Fairness	2.9 (2 = disagree, 3 = hard to decide)	Implies discordance with perceived fairness (consistent and equitable rules and actions).
Values	3.6 (3 = hard to decide, 4 = agree)	Implies some ambivalence toward values (personal vs. individual values).

Note. The Areas of Worklife Survey (AWS) assesses employees' perceptions of work setting qualities that play a role in whether they experience work engagement or burnout.

Table 4. Burnout and Areas of Worklife Survey Among APSHO Members (*n* = 366) and APSHO Advanced Practitioner Leaders (*n* = 24; aFTE ≥ 0.75)

Maslach Burnout Inventory (MBI) Scores		
MBI component	Total score (0–6, with 0 = never, 6 = every day)	Higher scores for EE and DP and lower scores for PA are associated with burnout.
Emotional exhaustion (EE)	AP: 3.2 AP leader: 3.1	AP leaders are at a similar risk of burnout to non-leader APs.
Depersonalization (DP)	AP: 1.5 AP leader: 1.1	AP leaders indicate a lower sense of depersonalization than APSHO member APs.
Personal accomplishment (PA)	AP: 4.9 AP leader: 5.2	AP leaders report a high sense of accomplishment.
Areas of Worklife Survey (AWS) Scores		
AWS component	Total score (0–5, with 0 = strongly disagree, 5 = strongly agree)	Lower scores can contribute to burnout. A score ≤ 2 (disagree) implies a higher risk of burnout.
Workload	AP: 2.5 AP leader: 2.4	Implies discordance with workload expectations. AP leaders have a slightly lower score implying a greater risk of burnout.
Control	AP: 3.3 AP leader: 3.5	Implies some ambivalence toward sense of control (unclear leadership structure or expectations, lack of input or autonomy, etc.) and vulnerability for burnout. AP leaders report a greater sense of control.
Reward	AP: 3.3 AP leader: 3.3	Implies some ambivalence toward reward (recognition for contributions, inequity in pay, job perks, titles, etc.) and vulnerability for burnout.
Community	AP: 3.6 AP leader: 3.7	Implies some ambivalence toward community (social environment, positive connection, workplace culture, collaboration, trust). AP leaders report a slightly higher sense of community.
Fairness	AP: 2.9 AP leader: 3.0	Implies discordance with perceived fairness (consistent and equitable rules and actions). AP leaders are ambivalent about fairness.
Values	AP: 3.6 AP leader: 3.8	Implies some ambivalence toward values (personal vs. individual values). AP leaders report feeling more aligned with organizational values.

Note. Areas of Worklife Survey describes the alignment between employees and the organization.

adding to the challenges in adequately supporting their AP team.

Burnout profile percentages offer insight into the AP workforce and may guide leaders in developing strategies for mitigating or preventing burnout. For this AP group, feeling engaged (34.2%) but overextended (37.4%) and reporting burnout (17.8%) shows a need to evaluate workloads, improve communication, and deploy strategies to support work-life balance. Lower scores for feeling ineffective (9.8%) and disengaged (0.8%) show a willingness in this group to seek out solutions.

For the AWS scale, scores ≤ 2 (range 0–6) show increased risk for burnout. Work-life balance in this group shows a greater perceived workload (2.5 vs. 2.7) and perceived lack of fairness (2.9 vs. 3.2) when compared to the Mind Garden control group. Sense of control (3.3 in both groups), feeling rewarded (3.3 vs. 3.4), a sense of community (3.6 vs. 3.9), and feeling like values align (3.6 vs. 3.9), show this AP group is more aligned with their AP and organization than the control group.

Workload ($r = -.58$, $p < .001$, 95% CI), control ($r = -.46$, $p < .001$, 95% CI), feeling rewarded ($r = -.46$, $p < .001$, 95% CI), sense of community $r = -.41$, $p < .001$, 95% CI), sense of fairness ($r = -.40$, $p < .001$, 95% CI), and values being aligned ($r = -.39$, $p < .001$, 95% CI) were correlated with EE. Simi-

larly, workload (r = –.23, p < .001, 95% CI), control (r = –.29, p < .001, 95% CI), reward (r = –.30, p < .001, 95% CI), community (r = –.23, p < .001, 95% CI), fairness (r = –.26, p < .001, 95% CI), and values (r = –.30, p < .001, 95% CI) were correlated with DP in this group. Workload (r = .23, p < .001, 95% CI), control (r = .33, p < .001, 95% CI), reward (r = .42, p < .001, 95% CI), community (r = .26, p < .001, 95% CI), fairness (r = .26, p < .001, 95% CI), and values (r=.30, p < .001, 95% CI) were positively correlated with a sense of accomplishment. Other factors negatively correlated with workload included younger age (r = –.13, p < .001, 95% CI) and fewer years of heme/onc experience (r = –.13, p < .001, 95% CI).

IMPLICATIONS FOR THE HEME/ONC AP WORKFORCE

Results from this survey show an overall risk of burnout across the heme/onc AP workforce. This is not significantly different than other recent studies evaluating burnout and work-life balance in oncology across disciplines. In the recent APSHO compensation survey published by Vogel and colleagues (2023), burnout was measured using a single-item scale (1–5), with 1 being the lowest feeling of burnout and 5 being the highest feeling of burnout. Among the 816 respondents, the highest levels of burnout (score ≥ 3) were in females when compared with males (61.9% vs. 40.8%), pharmacists (76.4%) and AP leaders (71.4%), followed by NPs (61.8%), PAs (54.8%), clinical nurse specialists, and advanced practice registered nurses (45.8%). Importantly, in this survey, a question about APs considering a change in their employment showed that 40% were considering a change in their work status, including 3.2% considering leaving oncology altogether.

Tetzlaff and colleagues (2022) conducted a survey of members of the Association of Physician Assistants in Oncology (APAO) in 2015 and then again in 2019 via email. Between 2015 and 2019 (n = 217), burnout (measured using the MBI), increased from 38.8% to 53.3% for PAs in medical oncology (p = .001), and from 30% to 46.2% for surgical oncology PAs (p = .86). These data are consistent with the findings from the APSHO survey, although the number of PAs represented was smaller in the APSHO survey (n = 64, 15.4%). Subscale scores for EE, DP, and PA were measured using total scores for each subscale, the preferred method for scoring the MBI in 2015. However, a higher score on the EE subscale had the greatest impact on the increase in overall burnout from 2015 (30.4%) and 2019 (43.6%), consistent with findings from the APSHO survey. Additionally, factors contributing to burnout included working more hours per week and time spent on tasks not directly tied to patient care, a topic described in greater detail in the article by Kurtin and colleagues (2023b) addressing productivity and metrics for heme/onc APs.

In a large study (n = 26,280) of nonphysician health-care workers in the Mayo Clinic system nationally, overall burnout (odds ratio [OR], 1.53, 95% CI = 1.38–1.70, p < .001), high EE (OR, 1.54, 95% CI = 1.39–1.71, p < .001), and high DP (OR, 1.40, 95% CI = 1.21–1.62, p < .001) were associated with a reduction in work hours across disciplines (Dyrbye et al., 2021). Conversely, satisfaction with the organization was associated with decreased work reduction across groups. Although data for APs (NP, PA, pharmacists) were combined with the broader health-care professional category (registered nurse, physical therapist, social worker, certified registered nurse anesthetist, paramedics), collectively, this group had similar outcomes relative to the impact of higher EE scores on burnout and work-hour reduction, reflecting the findings from the APSHO surveys.

A CALL TO ACTION: STRATEGIES TO REDUCE BURNOUT AND IMPROVE WORK-LIFE BALANCE

Recognizing the continued vulnerability to burnout within the AP workforce requires a call to action on the part of AP organizations, societies, educational institutions, individual practices, and health-care systems where APs provide services to cancer patients. It is clear from the recent data that the incidence and consequences of burnout continue to increase. The data from the APSHO Productivity, Burnout, and Work-Life Balance Survey were collected after the height of the COVID-19 pandemic, a time of unprecedented disruption of health-care systems. Organizations are just now realizing the financial losses associated with the pandemic and are reevaluating the collective

heme/onc workforce. It is imperative for all stakeholders, including AP leaders, to deploy strategies to assess and reduce burnout to improve work-life balance among APs. This will be essential to supporting a fully engaged and agile AP workforce. Building resilience and reducing burnout among AP leaders will be key to achieving this goal.

Hospital-based academic centers commonly offer resources and programs to enhance employee wellness and reduce clinician distress, including burnout. These programs may include supplying paid wellness leave, offering health/fitness courses and counseling, enabling hybrid/remote work options, and expanding family and childcare resources. Larger institutions often employ wellness directors to deploy strategies to prevent and reduce burnout while fostering resiliency. Smaller practices may collaborate across practices to access similar resources.

Advanced practitioners spend a considerable amount of time on indirect patient care and administrative responsibilities that may contribute to burnout (Bruinooge et al., 2018; Tetzlaff et al., 2018). To address these concerns, AP leaders may collaborate with other hospital leaders to help find system-wide barriers and workflow issues that impede the optimization of quality patient care. Initiatives to alleviate the administrative burden include hiring staff to help with records retrieval and patient navigation, changing clinician templates, optimizing electronic health records, integrating dictation options for documentation, clarifying roles among team members, and incorporating flexible protected time to complete nonbillable patient-related tasks. Involving APs in the quality improvement process related to all aspects of clinical care is essential to team engagement, integration of new technologies and treatments, and optimal patient outcomes (Kurtin et al., 2023a).

Advanced practitioner leaders should prioritize staff engagement through regular communication and intentional quality connections. Promoting a culture of high psychological safety through 360-degree feedback sessions, encouraging mentoring relationships, and coaching APs on specific professional development goals will help engagement. Regular "group huddles" that include "shout-outs" to recognize staff achievements can help team cohesiveness and commitment. Intentional gatherings either at or outside of work, such as group socials or volunteer service projects, may also help to build healthy staff camaraderie and cultivate a sense of community and shared values.

Expanding AP leadership structures and exploring novel roles within leadership such as dyads in partnership with physician chairs, AP clinical section leads, AP leads in research and education, and AP officers in patient quality and safety, diversity, equity, and inclusion, professionalism, and wellness are essential to keeping and cultivating AP leaders. These opportunities recognize the expanding and critical role of APs and AP leaders in collaborative team-based care and practice management. ●

Disclosure

The authors have no conflicts of interest to disclose.

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