

NOVEL BED BUG STRATEGY

A Successful Model for Controlling & Preventing Bed Bugs at the Community Level in Affordable Housing Complexes



TO GET STARTED...
TURN INSIDE

Affordable housing represents a significant challenge for property managers and PMPs tasked with controlling and preventing bed bugs in these complex environments. Yet nothing is more gratifying than successfully addressing a bed bug problem at an affordable housing complex, enhancing the 'quality of life' of residents while making a positive difference in your community. Unfortunately, the year-over-year remediation costs for controlling bed bugs in these high-traffic accounts can be overwhelming for cash-constrained management companies serving affordable housing. Through an impressive partnership between PMPs, residents and property managers, however, Allergy Technologies has successfully created and coordinated a comprehensive prevention program that has produced impressive, long-term results, while saving these organizations time and money. The result is a state-of-the-art bed bug remediation and prevention program that can serve as a model for similar initiatives throughout North America.

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NEW BED BUG PREVENTION PROGRAM FOR AFFORDABLE HOUSING DELIVERS RESULTS

Controlling bed bugs in affordable housing is a huge challenge, but a large-scale pilot program launched in Philadelphia proves prevention is possible and sustainable.



The City of Brotherly Love is known for many things. Having bed bugs, unfortunately, is one of them.

These pests are particularly difficult to control in affordable housing. According to a study by Rutgers University Entomologist Changlu Wang, who inspected 2,372 low-income apartments in 43 buildings in four New Jersey cities in 2016, bed bug infestation rates in community living facilities average 12.3 percent.

Unfortunately, current control strategies often fail to achieve long-term success with the pests re-emerging or being reintroduced and starting the cycle of infestation all over again.

But a new, program-based approach tested at a 470-unit affordable housing community in Philadelphia proved bed bug control and prevention is not only possible but *sustainable*.

The two-year pilot, called the Affordable Housing Control and Prevention Program for Bed Bugs or ATAHC (pronounced “attack”), is a *proactive* versus reactive approach that targeted the entire living community, not just individual units with bed bug problems.

The ATAHC Program was developed by Allergy Technologies, manufacturer of *ActiveGuard*® Mattress Liners. Support was provided by Philadelphia Councilmember Mark Squilla, the Philadelphia Housing Authority, its property management company, leading industry researchers and pest control companies.

According to Joseph Latino, president of Allergy Technologies, significant results were achieved in the pilot program’s first year:

97% of units did not have a reintroduction or re-emergence of bed bugs

81% reduction in the number of required treatments as compared to historical frequency

\$40K savings to property management

40% reduction in technician on-site time

Corbett Exterminating, which specializes in pest control for multi-unit housing and is the provider of record for the Philadelphia housing complex, was eager to approach bed bug control in a different way to end the cycle of reinfestations of this pest.

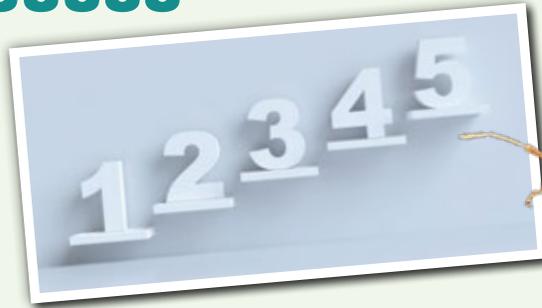
“It’s not doing justice to the community and to the people who live there to just continue to kill bed bugs over and over. That doesn’t improve their ‘quality of life’; it just maintains the situation as it is,” explained Charles Cerbini, executive vice president of the Mountainside, N.J.-based company.

Cerbini said implementing the new prevention-based protocol wasn’t difficult because Corbett Exterminating was already using similar control tactics in its affordable housing accounts. It was employing these tactics community-wide in a cohesive manner that made all the difference in the success of the program, he pointed out. 🐞

PILLARS OF SUCCESS

YEAR ONE

The first year of the ATAHC Program involved five collaborative steps:



1 GETTING BUY-IN

Being a facility-wide effort, all parties had to be on board. To build trust and collaboration, multiple training sessions were held for property management staff and residents. Led by an expert from Cornell University's Northeastern Integrated Pest Management Center, the sessions demystified the stigma of bed bugs; alleviated eviction concerns; outlined individuals' roles in the program; and taught basic bed bug detection and what to expect from ATAHC. Training materials were translated into multiple languages, and volunteer residents served as in-person translators during meetings, where refreshments were provided.

Meetings with Resident Council members were held throughout the year and newsletters highlighting program updates and communicating reminders were distributed to build resident support and enthusiasm. Management was trained on how to engage early with new residents who may introduce bed bugs during move-in.

A basic tenet of the ATAHC Program is building a culture of trust through respectful interaction with residents. Residential engagement, coupled with regular communication between the housing staff, management and pest control service personnel fosters early reporting and rapid intervention, ultimately allowing for localized treatments of re-introductions rather than more disruptive and expensive unit-wide remediation. The old adage, "treat the snowball rather than the avalanche" is particularly relevant in this case.

2 DIVIDING UP THE WORK

Like many affordable and multi-unit housing complexes, this facility was large, comprised of an apartment tower

surrounded by rows of townhouses. To make bed bug work more manageable and easier to track, the 470 units were divided into four color-coded quadrants. All work was completed in the first quadrant before moving to the second, and so on.

A detailed database helped Corbett Exterminating track progress. The company had to adjust some of its reporting practices to ensure documentation was consistent from unit-to-unit while adhering to the program's strict timeframes for follow-up activities. "Everything was pretty regulated (from a timing standpoint), but it wasn't a problem; you just had to schedule it properly," explained Cerbini.

Being methodical is key to ATAHC's success. "The organizational level and attention to detail is a great deal higher than with reaction-based bed bug control," said Dr. Jim Ballard, the bed bug consultant who audited ATAHC Program data. This dedication to detail allows for more efficient use of labor and streamlined deployment, resulting in significant cost-savings for the program.

3 CONDUCTING COMMUNITY-WIDE INSPECTIONS

Each unit underwent canine inspection for bed bugs by Key K9, an independent bed bug detection company based in Unionville, PA. Corbett Exterminating technicians then visually inspected the apartments where dogs alerted, to both confirm bed bug presence and grade infestations by their level of severity. Grading was performed throughout the course of the program to determine whether to remediate unit-wide (for more severe infestations) or perform lo-

calized treatments (for more limited bed bug introductions).

4 REMEDIATING UNITS WITH BED BUGS

Initially, every unit that had bed bugs (confirmed through PMP inspection) underwent heat remediation with residual chemical products applied per label as needed. (Heat is Corbett Exterminating's preferred method of bed bug control; chemical-only treatment may be considered in lieu of heat in future projects.) Steaming and vacuuming (extraction) of bed bugs was performed as needed. The use of clothes dryers and portable heat enclosures were used to eliminate bed bugs from personal items and large furniture pieces.

5 INSTALLING PREVENTIVE MEASURES IN ALL UNITS

All units, regardless of remediation efforts required, were then outfitted with prevention measures, with the exception of 13 units where property management continued to work with residents to gain access.

Desiccant silica gel dust was applied to wall voids. *ActiveGuard* liners were installed on all box springs and inverted on mattresses if box springs were absent. (In some cases, to salvage the mattress, liners were used in conjunction with encasements.) These products were chosen for their years-long residual activity and ability to kill any introduced bed bugs.

In addition, passive monitors were installed under the legs of beds, sofas or recliners. "Wherever people sleep, they got the interceptors," Ballard said. In common areas, a limited number of active monitors with lures were installed. ●



YEAR TWO UNDERWAY: MONITORING AND INTERVENTION

Residents and property management staff, the latter who enter units quarterly for routine housekeeping review, were trained to inspect passive monitors and report bed bug activity. Residents were incentivized with “thank you” gifts to report bed bug issues early.

During monthly pest control service visits for other structural pests, Corbett Exterminating employees now also inspect bed bug monitors, ensure mattress liners remain installed and address resident concerns about the pests.

Any report of bed bugs triggers a full visual inspection of the unit by a Corbett technician, who grades the level of infestation to determine the best treatment approach (unit-wide or localized; heat or chemical).

As a result of the COVID-19 pandemic, 2020-2021 continues to pose

many challenges, and routine monthly surveillance visits prescribed by the ATAHC Program were placed on hiatus from March to August of 2020 and then again, between November 2020 through February 2021. Despite these pauses, surveillance has resumed as of March 2021, and results to date indicate for the entire complex, whose tenants were initially enrolled in the ATAHC Program 16+ months ago:

99.1% success rate of preventing infestations (4 units required remediation)

<1% (1 unit) requiring unit-wide remediation (a new tenant that introduced bed bugs with their occupancy ... no *ActiveGuard* or interceptors present)

<1% (3 units) requiring localized treatment

ATAHC continues to provide robust bed bug prevention in year two of the program. For those few units requiring remediation, less costly and diminished disruptive localized treatments based on low-grade introductions were indicated and proved successful.

As per the program’s dynamic design and further sustainability, year one data supports that a revision in the frequency of inspections to a quarterly basis may be warranted. However, units that are remediated will be designated as “high vigilance” and remain on a monthly inspection schedule for at least three (3) months post treatment before being relegated to quarterly inspection.

Corbett reiterated a basic ATAHC tenet that regular inspection is key to catching an introduced bed bug early. “The sooner it’s found, the easier it is to eliminate; the less chance that it’s going to be transferred from unit to unit or that the bed bug is going to migrate out of this apartment into an adjacent apartment,” said Cerbini. Catching introductions early also reduces treatment expense and the disruption experienced by residents.

At the conclusion of the program’s second year, Allergy Technologies plans to develop a comprehensive report for publication in housing-specific media. ●

COST VS. BENEFIT: RESULTS SPEAK FOR THEMSELVES

As is common with all preventive pest control strategies, the ATAHC demonstration initially incurs additional expense to implement in year one as compared to a reactive approach, but pays dividends long term.

“Like many preventive programs, cost-wise, there is an up-front investment,” explained industry consultant Dr. Jim Ballard of the expense to conduct bed bug inspections and install preventive measures community-wide.

However, the cost of remediating bed bug problems at the Philadelphia complex dropped significantly in the program’s first year: only 17 heat treatments were performed, an 81 percent decrease over historical frequencies that saved property management more than \$40,000.

Year two of the program, based on the low reintroduction rate and absence of the initial “clean out” phase of the program, is expected to save management more than \$100,000 as compared to 2018/2019 historical expenses for the complex.

Reintroduction of the pests, albeit limited, has not grown into significant infestations due to monthly monitoring and application of preventive measures like *ActiveGuard* Mattress Liners and desiccant dust in wall voids.

During follow-up inspections after all units were cleared of the pests, Corbett Exterminating found dead bed bugs on the edges of *ActiveGuard* liners. Residents were not aware the bed bugs had been reintroduced to their apartments.

If live bed bugs are found in future inspections, a localized, less-expensive treatment should solve the problem. “If the program is followed, you’re never going to have a unit with a really bad bed bug problem,” explained Charles Cerbini, Corbett Exterminating.

Stopping the cycle of bed bug reintroductions into their apartments is the program’s “strongest selling point,” added Philadelphia Councilmember Mark Squilla, who is encouraging the use of ATAHC in other public and private housing complexes. In addition, the time technicians spent onsite was reduced by 40 percent, which not only reduced labor costs but potential exposure to COVID-19 for all parties.

“I believe the initial cost of doing this is well worth the long-term effects,” said Squilla.



THE GOAL: ENHANCED 'QUALITY OF LIFE'

“**T**he ATAHC Program will make a huge difference for managers, staff and residents of affordable housing,” assured Joseph Latino, president of Allergy Technologies. Founded on the principles of integrated pest management, the protocol reduces the bed bug burden in housing communities so residents can enjoy an improved ‘quality of life’ free of these pests.

“I had bed bugs, myself, and the mental health and anxiety that goes along with it is a problem that people don’t realize,” said Philadelphia Councilmember Mark Squilla.

Relieving this stress is a win for residents, as well as for the property management companies and owners who constantly must respond to bed bug problems, he said.

“The adoption of the ATAHC bed bug program since January 2020, including the installation of *ActiveGuard*, has been a great addition to our community,” said the Resident Council president at the program demonstration site. “Our residents and I agree that it has been wonderful. We have not had any outbreaks of bed bugs.”

“The ATAHC bed bug program has changed the landscape of bed bugs in our 450+ unit community living housing complex,” added the community manager for the property management group, a national leader in commercial real estate specializing in affordable housing. “Most importantly, it has improved the ‘quality of life’ of our residents. Both residents and staff have really embraced the program and have often commented they are eager to assist in improving their living and work environment.

“Personally, as the community manager, it has been a relief not to receive frequent bed bug complaints, that are both time-consuming and quite expensive to treat,” he added. “My staff can now focus on non-bed bug issues as the preventive success of this program has reduced the bed bug presence on site to extraordinarily low levels.” 🐜



COLLABORATION IS KEY

Many hurdles have historically stood in the way of long-term bed bug control in affordable housing.

Pest management professionals cite the lack of resident cooperation. Property managers and housing authorities point to the exorbitant costs of continuous treatments as a result of the traditional reactive strategy. They don’t want to talk about bed bugs in their facilities fearing negative publicity. Residents fear reprisals for reporting the pests and the elderly may not realize they have a problem, allowing infestations to grow and spread to neighboring units.

The ATAHC Program flipped this script by changing community culture about bed bugs. It did this by building collaborative relationships between residents, property management and pest control professionals. Education sensitive to cultural and language diversity destigmatized the topic of bed bugs and was geared toward re-establishing dignity and self-esteem. Doing so took time and effort. “It’s a lot of work early on, but in the end at least in our pilot the results were astronomical, even better than projected,” said Mark Squilla, the City of Philadelphia councilmember who helped facilitate the ATAHC pilot program.

WHY ATAHC?

In 2019, Philadelphia was named the #1 bed bug infested city in the U.S. by a national pest control provider. That didn't sit well with the folks at Allergy Technologies.

"The fact that our hometown is ranked as one of the topmost bed bug-infested cities in the country is not acceptable, so we decided to do something about it," said Gus Carey, managing director and founder of Allergy Technologies. "While this demonstration alone will not immediately solve the overall bed bug problem in Philadelphia, it will ultimately showcase an effective and cost-sustainable strategy for bed bug control and prevention that will improve the quality of life of Philadelphia residents."

Carey expects the success of the ATAHC Program will lead to it being replicated throughout the City of Brotherly Love and across the country. As a tangible illustration of the company's commitment to this effort, Allergy Technologies donated more than \$100,000 of *ActiveGuard* liners to the Philadelphia Housing Authority building complex as part of a community outreach effort that is core to its mission as a PhilanProfit organization.

Allergy Technologies is a subsidiary of A. Carey Co. LLC, which focuses on using philanthropy as a core business strategy for its businesses. Through its PhilanProfit strategy a portion of all *ActiveGuard* proceeds go to help fund inner city homeless and women's shelters and asthma clinics. 🌟



INDUSTRY RALLIES TO CHANGE BED BUG CONTROL OUTCOMES

A number of organizations donated time and materials to the ATAHC pilot program.

In addition to Allergy Technologies' donation of more than \$100,000, the company contacted its manufacturing and industry colleagues to rally their efforts in co-sponsoring this major initiative.

Collaborating sponsors were Rockwell Labs Ltd, Bayer Environmental Science, Target Specialty Products and MGK; they donated products and expertise valued at more than \$50,000.



"While core principles of the ATAHC Program include early detection and intervention, **A KEY COMPONENT OF THE PROGRAM'S SUCCESS COMES FROM**

WORKING CLOSELY WITH PROPERTY MANAGEMENT, STAFF AND RESIDENTS — all of whom have been incredibly supportive. The 'magic' occurs when all of these stakeholders come together and work toward a solution."

— JOSEPH LATINO, PRESIDENT, ALLERGY TECHNOLOGIES



ATAHC = NEW BUSINESS OPPORTUNITY

In the past, Hoffman Exterminating in Mantua, N.J., stayed away from bed bug work in affordable and multi-unit housing complexes.

“If you don’t get the results, then the pest control company is on the hook,” explained Vice President Robert Schwenker, who cited the high risk of bed bug reintroductions and retreats in this sector. Nor does the company want to get paid to put a bandage on the problem; it wants to solve bed bug problems to improve residents’ quality of life, he said.

The ATAHC Program provides this opportunity. “If you can get the results from the very beginning and you’re not returning, it’s a win for the complex and it’s a win for the pest control operator,” said Schwenker, who is “ready to push the go button” on a project using the ATAHC protocol.

Data results and referrals from the demonstration will open doors to new clients. “This project from Philadelphia has given us a story to tell,” said Schwenker, who also sees the potential to bring a modified version of the preventive program to hotels, casinos and other commercial properties in his market.

But because fewer remedial bed bug treatments are needed, pest control companies may earn less revenue using the ATAHC protocol at an account. “We absolutely have lost income from instituting this program,” admitted Charles Cerbini of Corbett Exterminating’s work at the Philadelphia housing complex.

He said it’s more important, however, to eliminate residents’ bed bug misery. “That in itself is its own reward because that’s what we’re here for; we’re here to get rid of problems.” Cerbini expects to make up for the lost revenue by gaining

new multi-unit housing clients using the ATAHC protocol.

ATAHC’s preventive strategy introduces a paradigm shift to the industry. A clear benefit of the program is it allows for the PMP to better deploy their technical staff, facilitating scheduling and saving in labor expense. 🐜



“The ATAHC program is a **REAL-WORLD FORMULA FOR SUCCESS.** It’s absolutely sustainable.”

– **CHUCK CERBINI, CORBETT EXTERMINATING**



“WE’RE VERY, VERY PLEASED WITH HOW THIS PILOT TURNED OUT and would like to see it duplicated in other facilities, whether it’s public housing or private housing complexes.”

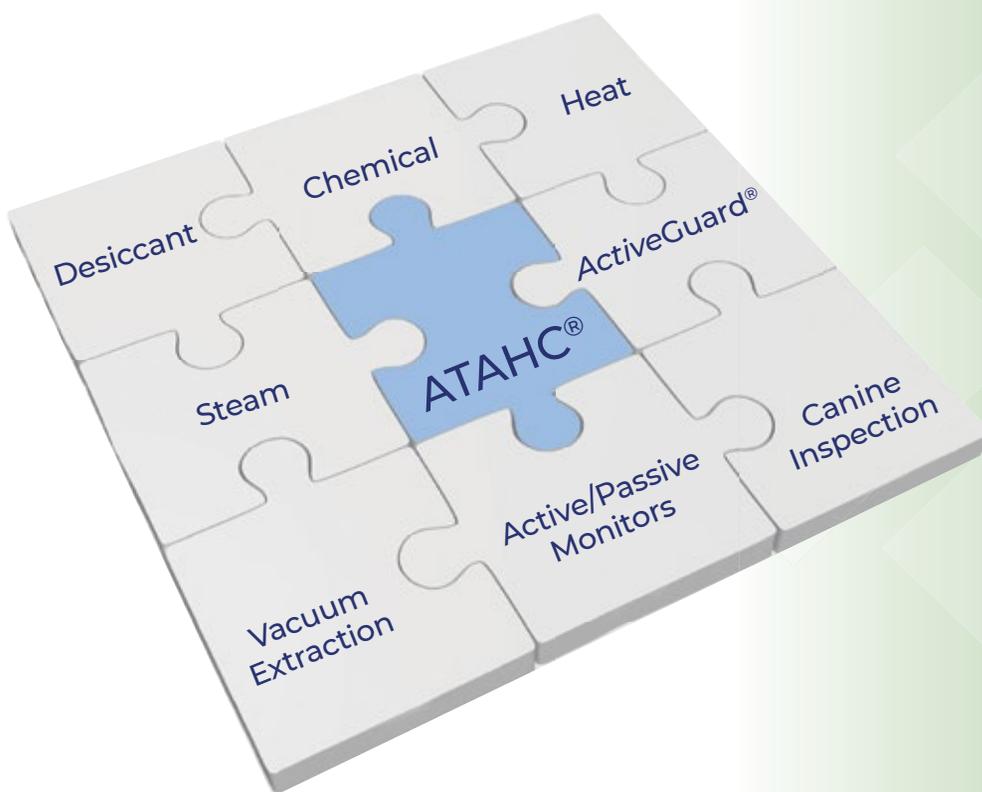
– **MARK SQUILLA, PHILADELPHIA CITY COUNCILMEMBER**





ATAHC®

Finally, the Program that Perfects Bed Bug Prevention



Year One Results

- **97%** of units did not have a reintroduction or re-emergence of bed bugs
- **81%** reduction in the number of required thermal treatments
- **\$40K** savings to property management
- **40%** reduction in technician on-site time

CALL TODAY to learn why the ATAHC program is a win-win-win for the PMP, Residents, and Property Management in affordable housing and all multi-occupant dwelling environments.