



How to Implement an Effective Alarm Testing Plan

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The Importance of Testing

Regular testing of alarm equipment is a vital part of good practice when delivering telecare services. Automated system alerts provide useful information to service providers, but regular testing of Social Alarms is an important element in the delivery of services to users; as described in British Standards as well as guidance from manufacturers and the TEC Services Association. Tunstall recommends all products are tested in line with the EN50134-2 European standards.

This "How to Guide" has been developed to help make this process easier to implement, but if you feel anything is missing or you require more detail, please let us know. All references apply to Tunstall equipment only.

Benefits of regular testing

- Testing helps the client build up confidence in using the equipment in non-emergency situations
- It offers another means to keep the client's database details up to date
- It can identify any early problems with the equipment e.g. low battery
- In some countries, it is a legal requirement that you regularly test electrical equipment
- Ensures users are benefitting from the latest firmware updates (where applicable)

Devising an Implementation Plan That's Right For You

Monthly Testing

We recommend that the alarm receiving centre (ARC) calls the client on a monthly basis to ask the client to activate an alarm call to test the pendant and home unit are working as they should. This not only sets good practice, but it enables you to ascertain the client's wellbeing, check any database details such as keyholders, ensure the client is confident using the equipment and has the most recent firmware updates (where applicable).

Telecare

If possible, an annual health check for all other sensors is also useful to ensure they have not been damaged or removed. The only exception to this is life critical sensors which we recommend are tested by the user/family on a regular basis preferably once per month. These include smoke, carbon monoxide, gas, heat and temperature extremes detectors as well as pull cords and pendants (inc. fall detectors).

Group Living Environments

We recommend that staff carry out testing every three months. The phone line will be tested as a matter of course in schemes which switch to the monitoring centre but end to end checks provide full confirmation of the system working as it should. It is good practice for scheme staff to undertake a regular scheme testing programme to check the operation of speech modules, pullcords and other sensors in the scheme on a regular basis.

Additional helpful guidelines

PNC – Uninterruptible Power Supply (UPS)

In addition to your periodic maintenance agreement, it is recommended that you test your UPS once a week.

Warden call equipment

Telephone lines to schemes

Regular checks to each scheme should be carried out to ensure the telephone line is working. This can be done manually or automatically through Check-It or Scheme Auto Test.

Control Unit

The scheme can also be checked by accessing a designated speech module and opening a speech channel thereby testing communication.

Working With Service Users

Some service users may be reluctant to use their equipment. Common objections include:

- I don't like to disturb you as you must be so busy dealing with emergencies.
- I don't need to use it as I'm not unwell or in need of help.

A regular testing plan will help to enhance the relationship you have with the people you support, by giving them practice in using the equipment, and helping them to feel more comfortable engaging with the monitoring centre. It can also identify and changes in health or circumstances, e.g. keyholders, contact numbers.

Examples of best practice

"I carry out an annual health check for all equipment in the home. It's not only a big confidence booster for the client but I can check on their wellbeing too."

"We actively encourage our clients to press the button for anything they may need, whether it be the telephone number for a local plumber or just a chat. That in itself is a testing plan."

"We've asked Tunstall to bolt it onto our existing service contract. They carry out an annual check of all the sensors installed in people's homes once a year."

How to Test

Testing of sensors is recommended on a regular basis. Tunstall provides a sensor testing, maintenance, and battery replacement service. Please contact your local Tunstall Support team for details.

Lifeline home units

Lifeline home units which communicate over cellular or broadband internet* (Lifeline Digital, Smart Hub, GSM) are able to make alarm calls providing that the communication service remains operational. Additional status monitoring is provided through the Device Management Platform (DMP). Whilst testing the unit when connected to the internet is important, it is also imperative you intermittently test without any connection to the home broadband to ensure the cellular connectivity is working correctly should your internet provider ever experience issues. To test, simply press the help button to raise an alarm call.

It is important to remember that Lifeline home units which connect to an analogue telephone line (Vi, Vi+, Communicall) cannot make alarm calls when another telephone is in use (or off-hook) within a property, unless the telephones are connected to the socket in the back of the Lifeline unit. Therefore, all other telephones (including DECT base units) within the property must be connected to the back of the Lifeline home unit. This allows the Lifeline to take control of the telephone line during an alarm call and cut off any connected telephones within the property should they be in use or off the hook when an alarm call is generated. The Lifeline home unit can then be connected to any telephone wall socket in the property.

Tunstall recognises that rewiring extension telephones can incur significant additional installation costs whilst also adding unsightly wiring that could also double as a trip hazard. As a result, Tunstall has developed an alternative solution, Safe Socket, to avoid the need to rewire existing telephones via the back of the Lifeline home unit.

If Safe Sockets are employed, then rewiring extension telephones via the back of the Lifeline home unit can be avoided. Safe Sockets should be plugged into the wall sockets used by all existing telephony equipment (except the Lifeline home unit) in the property and then the telephone equipment should be plugged into the Safe Socket. The Lifeline home unit is then connected directly to the BT socket. If an alarm call is then generated and an extension telephone is in use, the Safe Socket will detect the alarm attempt and disconnect the attached telephone therefore freeing up the telephone line to allow the 2nd alarm dial attempt from the Lifeline home unit to be successful.

Lifeline home unit installation test

After installing a Lifeline home unit which uses cellular or broadband internet connectivity, please test at your earliest convenience by raising an alarm to ensure it is fully functional.

After installing a Lifeline home unit which uses an analogue telephone line, we ask that you also test the installation by taking an extension telephone handset off-hook, wait for the dial tone on the telephone to end, then generate an alarm call.

If the extension telephone is connected directly to the back of the Lifeline home unit, the dial attempt should be successful, and the alarm call should be answered by the monitoring centre.

If the extension telephone is connected to the telephone line via a Safe Socket, the home unit's first dial attempt will not work however if everything has been installed correctly the second dial attempt should be successful.

*Whilst our latest digital hubs will connect to the internet via Wi-Fi, we strongly recommend connection is made by plugging the Ethernet cable directly into the router for increased reliability.

If the test is unsuccessful, then the installation needs checking and the extension telephones within the house need either rewiring via the back of the Lifeline or should be connected to the telephone line via Safe Sockets.

It is also important to ensure the time on the integral Lifeline clock is set correctly when using features that utilise the clock setting e.g., virtual sensors, reminders, critical visits etc. Once set the clock will continue to work even during mains power cuts however if the unit is powered down for transportation the clock will need to be reset when the unit is powered up again.

Lifeline home unit battery testing

Lifeline Digital, Smart Hub, Vi and Vi+ include a battery monitoring feature as standard, (Auto-Low Battery; ALB). Lifeline Connect and Connect+ manufactured from the end of January 2011 also include a battery monitoring feature as standard. This feature will generate an alert to the monitoring centre should the battery become faulty or if the battery reaches a low capacity during a mains power failure. This will support battery management procedures and in particular avoid the need to carry out the 6 monthly unit battery tests as previously recommended and will also raise alerts to any battery failures at the earliest opportunity.

Tunstall recommends that Lifeline home units not mentioned above should have their backup batteries tested every 6 months. This can be done by unplugging the Lifeline unit from the mains power supply and then generating an alarm call to ensure it goes through to the monitoring centre.

Please refer to the appropriate Installation Guide for more details on home unit installation testing.

Personal radio triggers (pendants)

It is recommended that personal radio triggers should form part of a monthly test procedure. The service user should be asked to press their radio trigger and check that the LED lights up constantly for approximately 3 seconds and an alarm is generated via the home unit.

Amie+, Gem+ and MyAmie personal radio triggers also incorporate our Auto-Low Battery (ALB) feature that communicates low battery status to the monitoring centre or will be shown on the live view of the Housing Services Portal (HSP – only available on local schemes using Communicall Connect, Vi and Vi IP) if the sensor has not been used for 7 days and the battery level has gone low.

What is the Auto Low Battery Feature (ALB)?

Radio triggers (pendants) are programmed to automatically test their own battery periodically throughout their life to ensure continued functionality and offer reassurance to the user.

Why does it do this?

Tunstall always recommends regular testing of personal triggers to ensure they are in working order when needed. However, if a client forgets or is unable to carry out a test, this feature will ensure that the battery is regularly tested.

What happens next?

If the battery is ok, then the trigger will not signal anything and wait for a further 7 days before repeating the test. If the battery is low, then the trigger will signal to the Lifeline home unit which in turn will report the failure to the monitoring centre.

Recommended actions

The monitoring centre should firstly confirm the low battery by contacting the user and requesting they manually test their trigger.

Why should any manual confirmation be necessary?

Low battery reports can be caused by other factors such as when the trigger has been temporarily placed in a cold area e.g., on a window sill. Because triggers automatically test themselves at any time such instances can occur therefore a failure under these circumstances may not be typical. The follow-up manual test provides confirmation that the test has taken place under normal conditions. The battery monitoring feature on the MyAmie personal trigger has been developed to overcome the requirement for a manual confirmation therefore this is not necessary for this product.

Recommended management

If the manual test is successful (i.e., battery is ok) then the trigger should be left with the customer. If the manual test fails then the trigger or, if removable, battery should be replaced.

Auto Presence (AP)

Auto Presence (AP) enables the personal trigger to regularly contact the installed Hub. The programming can be configured to send a notification to the monitoring centre in a time period to suit the client's lifestyle and risk profile. This function adds an additional level of confidence around trigger connectivity and performance with any abnormalities such as the pendant being lost or damaged, being brought to the attention of the Service Provider in a timely way.

Telecare sensors

The following information details exactly how to make a test call to the monitoring centre. If you have any difficulties, please do not hesitate to contact your local Tunstall Support team.

If you experience a fault in a battery powered sensor, please replace the battery and retest.

For more information on the expected life of sensors and their batteries please refer to the battery information guide available on www.tunstall.co.uk

Arm/Disarm Trigger and Zoning Button

Press the trigger and ensure correct operation. These triggers do not need to be manually tested for battery performance.

Bogus Caller/Panic Button | Monthly

Please see [How to test personal radio triggers](#). Also note that bogus caller/panic buttons are usually set to raise a silent call therefore it is important to warn the monitoring centre prior to generating a call so they can confirm during the call that it has been received correctly.

Bed/Chair Occupancy and Property Exit Sensors

- Connect the programming device to the socket marked 'IP4/Prog' on the Telecare Interface Module
 - Select radio tab on the menu screen
 - Select transmit (or Send radio to generate a test call to the monitoring centre
-

Bed/Chair Absence and Property Exit Sensors (Virtual sensors)

Put the home unit into walk test mode and activate each individual sensor. Ensure that the home unit beeps or announces the type of sensor activated. Care should always be taken when programming virtual sensors to ensure settings have been configured correctly as it is not always practical to test the complete virtual application e.g., testing 24-hour inactivity would require the home to be left for 24 hours.

Carbon Monoxide Detector – mains and radio | Monthly

Press the test button on the front of the detector. Please refer to the manufacturers guidelines to confirm expected lifespan of this product and ensure it is replaced in a timely manner.

Enuresis Sensor

'Short' the two metal studs on the sensing mat with a metallic object (e.g. a key) until a beep is heard and ensure an alarm call is generated.

Epilepsy Sensor

Rapidly tap your fingers on the sensing mat and ensure an alarm call is generated.

iVi intelligent pendant | Monthly

It is recommended that you test the fall detector once a month:

- Make a manual test call by pressing the help button

ANNUAL HEALTH CHECK

- Hold the iVi pendant at shoulder height for 15 seconds
 - Whilst holding the iVi, allow your hand to drop rapidly to floor level and come to a sudden stop and then come to rest on the floor (do not simply drop the iVi onto the floor, where possible the iVi will not activate in this situation to reduce false alarms)
 - The iVi will take 20 seconds to assess whether a fall event is likely to have occurred before alerting the user via the sounder/LEDs
 - Once the sounder/LEDs have activated, the user will then have 10 seconds within which to press the cancel button if they do not want an alarm to be generated
-

Vibby Fall Detector | Monthly

It is recommended that you test the fall detector once a month:

- Make a manual test call by pressing the help button

ANNUAL HEALTH CHECK

- Place the unit in demo mode (refer to the Vibby Installation guide)
 - Simulate a fall as detailed in the installation guide
-

Flood Detector

Apply moisture to the 2 probes that are situated nearest to each other (do not immerse the unit in water).



Natural Gas Detector | Monthly

Functional test with gas – test using a gas bottle with maximum concentration of 25% LEL Methane balanced in air and set the gas flow at 0.5 litre/minute max (Speciality Gas UK, www.speciality-gases.com,

supplies such as gas bottles). The detector should react within an interval between 30 seconds and 2 minutes. Verify that the relay and buzzer activate and the red LED illuminates.

Please refer to the user guide for the expected lifespan of the unit and ensure it is replaced in a timely manner.

Cigarette lighters (unlit) should not be used to perform the above test.

Medication Dispenser – PivoTell

Remove the batteries from the dispenser and insert a suitable pointed instrument (e.g. paper clip) into the test aperture in the side of the battery compartment. Ensure an alarm call is generated. Also ensure the time is set correctly.

Please note – the dispenser battery is not monitored therefore a regular (preferably monthly) test of the battery is recommended.

Motion Sensor – Lifeline home units only

INTRUDER MONITORING

Put the unit into intruder mode and leave the room/dwelling for 3 minutes, then enter the room and ensure that an alarm call is generated.

INACTIVITY MONITORING

Put the unit into inactivity mode, leave the room/dwelling for the pre-set inactivity time parameter and check that an inactivity call has been generated.

Alternatively, placing the home unit into walk test mode provides a simple way of testing the operation of the PIR.

PIR – hardwired to speech module

Put the speech module into away mode (intruder on) leave the room/dwelling for 3 minutes. Enter room in front of PIR, ensure speech module raises an intruder call to handset or monitoring centre.

PIR – Radio with Telecare Overlay

As for hardwired above.

Pressure Mat – Lifeline home unit

Apply pressure to the mat.

Pressure Mat – hardwired to speech module

Put the speech module into away mode (intruder on) step on the pressure mat and ensure an intruder alarm call is raised.

Pull Cord | Monthly

Pull the cord and ensure an alarm call is generated.

Smoke and Heat Detectors | Monthly

Smoke and Heat detectors should be tested monthly by pressing the test button until the siren sounds and ensure an alarm call is generated.

Detector life – maximum of 10 years (refer to the manufacturer guidelines for more details).

Ambient Temperature Sensor

To test the Ambient Sensor refer to the installation guide which is available on the Tunstall website.

Visual Call Indicator/Strobe Sounder Beacon

Activate the function that the strobe sounder/visual call indicator has been configured to draw the client's attention to.

Other scheme equipment

Fire alarm link to system

Inform residents (and monitoring centre if appropriate) of fire alarm test. Activate the fire alarm system and ensure a call is raised on the handset or to the monitoring centre.

Remote Door Controller (RDC)

Generate door entry calls and use each of the three buttons to ensure they function correctly. A low battery is indicated by the red light flashing when any of the buttons are pressed.

Electrical safety testing

Tunstall telecare equipment may not need to be tested under electrical safety regulations, as they are either battery powered (telecare sensors) or powered using a double insulated plug transformer and therefore the cable to the unit is low voltage. This may vary across territories, so please check the country specific electrical safety standards.

Periodic Calls

Refer to the specific user guide to set up periodic calls

What are periodic calls?

Tunstall home units can be set to call the monitoring centre periodically. The home unit will call the monitoring centre and pass a message to confirm that the unit is still working. Please note that periodic calls to the unit do not include the status of the trigger, which will need to be tested independently.

The client does not need to do anything, and a call operator does not see the call. In other words, the home unit and the monitoring centre communicate regularly to ensure that the home unit is still in working order. If the monitoring centre does not receive one of these periodic calls in the time set it assumes that the home unit is faulty. At this point the PNC database generates an overdue periodic alarm call.

You can configure home units to raise a call between 1-99 days.

Periodic calls can also alert to problems that otherwise might not be detected e.g. if a phone bill is not paid some telephony service providers don't cut the telephone line off but suspend the outgoing calls service so the line still works for incoming calls but cannot make an outgoing call therefore stopping the Lifeline from generating an alarm call.

Mains fail

If mains electricity fails e.g., power cut or plug removed, units emit an audible warning and their alarm button will flash repeatedly, units will also place a call to the monitoring centre after the first hour and every 4 hours thereafter until mains is restored. Battery backup of course provides full operation until power is restored (refer to the specific user guide for expected lifespan of the battery).

Communication path disconnection

Refers to Lifeline Digital and Smart Hub.

Basic units will emit a regular tone to indicate that the telephone line has been disconnected. More advanced Lifeline home units will give an audible announcement that the telephone line has been disconnected. Lifeline Smart Hub indicates the availability of communication paths (cellular/broadband) and announces if none are available.

Group Living

Modern grouped schemes include built-in fail-safe procedures and features that are used to check on performance. For a full list of features on grouped systems please refer to the relevant solutions sheet.

Mains failure

In the event of mains failure, the system remains operational for up to 8 hours via battery back-up. After a configurable time period, the system will automatically dial the monitoring centre or inform the onsite staff depending on the systems site status (e.g. Onsite or Offsite) to inform them of the mains failure.

Furthermore, if the mains have failed the batteries will report low battery after a predetermined configurable time (Communicall only).

Telephone line failure

In the event of telephone line failure, the system will revert onsite (and alarms may be handled if there are any staff on site). Optional warning beacons will indicate failure locally, usually in communal areas. When

the telephone line is restored, pending alarm calls are routed off site to the monitoring centre (Communicall only).

Polling for speech module and central receiver failure

The system automatically checks modules for presence and functionality at regular periods. This would identify any missing or damaged modules. This also includes the central receiver (not available on Piper Group).

Cable disconnected or short circuit

There is an inbuilt mechanism for detecting serious cable failures. A system cable failure may be indicated via a warning message on the master unit or at the monitoring centre (not available on Piper Group or Piper Haven).

Hard wired devices e.g. pull cords

Hard wired devices installed over the last 8 years are monitored continuously. If the cable breaks or the pull cord is faulty there is an immediate alert to whoever is on duty (not available on Piper Group or Piper Haven).

Telecare Overlay

Local alerts will be raised on the Telecare Managers Unit.

Radio triggers

When a trigger is pressed, any battery low will be indicated by the reassurance light flashing (not available on Piper Group pendants). Triggers working on Telecare Overlay have the added advantage of being able to raise an automatic low battery call which generates a report to the on-site printer. Triggers working on Communicall Connect/Vi/Vi IP can send the ALB/AP call to the designated destination.

Speech module test mode

Communicall Vi/Connect and Vision speech modules allow scheme managers to test all connected hard wired triggers without having to make end to end calls. The advantage here is that staff can now complete a test programme much quicker without having to raise and clear an alarm call for each test.

PNC monitoring centre software

The monitoring centre software you use is also a vital source to make your testing programme more effective. Here are some of the ways PNC can be used to aid testing:

Periodic calls

PNC monitors when a Periodic call is supposed to arrive and will highlight on the screen when it doesn't arrive – this is the equivalent to making your own reminders. This doesn't involve any manpower or interaction with the monitoring centre unless there is something wrong.

Equipment Database

Allows tracking of equipment you have supplied. It is important to know the serial numbers of various pieces of working equipment you possess in the field and in store. You can keep records of when batteries were installed and indicate regular maintenance service visit requirements.

Management Reports

Provides full information such as which residents have not contacted the monitoring centre in a specified period e.g., last two months, and which residents have not tested their radio trigger recently.

Background Calls

Allows for some incoming calls to be dealt with by PNC and not by a call operator (dependent upon the equipment installed). As the calls are dealt with automatically, they are handled more quickly, allowing operators the time to deal efficiently with emergency calls. For example, auto low battery calls can be designated as background calls. Once a day the calls history can be searched to find all the battery low calls that happened the previous day so that battery replacement can be arranged.

No Contact from Dwelling

This report will show you how many clients have not contacted the monitoring centre over a particular period of time. It can also list these clients so that action can be taken. You can also find out how many clients have not used their radio trigger to contact you over a period of time, as some clients remember to test the integral button on their Lifeline but forget to test their radio trigger.

Background warden calls

Allow standard logging on or off-site calls from scheme managers to be dealt with automatically. If there is information to be passed on to a scheme manager (for example if calls were taken in the night when the manager was off duty) then the system will pass these calls up to the operator so that the manager can be informed. If there is no information for the warden, then the call is logged and cleared automatically without troubling the busy operators.

Caller Line Identification (CLI)

If your monitoring centre alarm telephone lines have Caller Line Identification (CLI) enabled then an additional level of protection is afforded for both scheme and dispersed equipment. If the equipment manages to dial the monitoring centre but is unable to complete its identification number and call code signalling for any reason, then PNC can search for its telephone number in the database to identify it. An 'Alarm Call Failed' alarm can then be raised by the system to notify the operators that there may be a fault with the equipment.

Scheme Auto Test

Allows PNC to work in conjunction with Tunstall scheme equipment to provide regular testing of not just the telephone line, but also the signalling capability of the scheme. The test can additionally be used to monitor the onsite/offsite status of the scheme (not available on Communicall Connect).

Proactive Services Module

TSP Platform provides a Proactive Services Module which allows service providers to plan and schedule regular Outbound calls from the Control centre to the end user. These outbound calls can be configured to take place on a daily, monthly basis as well as following the end user's availability requisites.

Proactive Calls Type and Reason can be customised by Control centre so a "Technical Reminder" can be configured in a monthly basis in order to contact the end user and test the equipment.

Once the scheduled call gets completed it will automatically re-schedule for the next month.

Support and Maintenance

Batteries

Warden call and Lifeline home units all have integral batteries that require testing and replacement in line with the guidelines given in Tunstall's Battery Information document. This can be downloaded from www.tunstall.co.uk/technical-information

Scheme battery in control unit

Scheme batteries should be user tested every 6 months by switching of the mains. If the system fails to operate, please switch the mains back on and report the fault to Tunstall's Helpdesk in most cases failure will be due to batteries which may be chargeable.

Smoke detector cleaning

Annual cleaning reduces the incidence of false activations and ensures maximum life span. As stipulated by the manufacturer, the maximum life span of a smoke detector is 10 years and at this point 'must be replaced not merely cleaned'.

Sensors testing

The testing of sensors is recommended on a regular basis. Tunstall provides a sensor testing, maintenance, and battery replacement service.

Tunstall Helpdesk

Tunstall's telecare helpdesk can provide advice and information in a user-friendly manner on a full range of queries, from programming techniques to reading of manuals. The Helpdesk can be contacted Monday - Friday, 9am-5pm on 01977 660204.

About Tunstall

Tunstall has been at the forefront of technology innovation for the health, housing and social care markets for over sixty-five years. Its pioneering software, hardware and services enable new delivery models which can transform services across the care continuum and empower people to live independently and with an improved quality of life.

Tunstall works with social care providers, healthcare services, housing and retirement living providers and charities in 19 countries, improving the lives of more than five million people, including those living with dementia, learning disabilities, physical disabilities and long-term health conditions.

Tunstall's innovation-led, person-centred Connected Care and Health solutions connect people and integrate services, enabling early intervention to avoid or mitigate adverse events, and improve outcomes. As technology advances, we have the capability to not just react to events, but to predict and even prevent them, using data-driven insights. The Tunstall Cognitive Care™ approach can help to create intelligent, personalised care programmes and effectively allocate resources, making sure those in need have the right levels of support and reassurance.

Our policy of continual development means that product specification and appearance may change without notice. Tunstall does not accept responsibility for any errors and or omissions contained within this document. This document should not be relied upon for product details, and reference should be made to current specifications.

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