



An Phríomh-Oifig Staidrimh
Central Statistics Office

Central Statistics Office

Review of the quality of crime statistics

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Executive Summary

Recorded crime statistics, along with crime and victimisation surveys, play a key role in informing society of the level and type of crime in Ireland. In November 2014, the Garda Inspectorate published a report called “Crime Investigation” which raised serious concerns about the recording of crimes on the Garda PULSE (Police Using Leading Systems Effectively) system. Since PULSE is used to produce CSO (Central Statistics Office) recorded crime statistics, the CSO could not continue to publish official crime statistics without a full review.

The CSO then began a comprehensive review of the accuracy of Garda Síochána crime data. In particular, the CSO wished to examine the extent to which the issues highlighted by the Inspectorate are present in Garda crime data. As part of this study, the CSO obtained access to additional non-crime data from the Garda Síochána; these included CAD (Command Aided Dispatch) and paper records, in addition to non-crime PULSE incident groups. This review formed the basis of this document.

The main CSO findings are, based on the various samples selected, as follows:

- An estimated 20% of crime reported to An Garda Síochána in 2011 via their CAD equipped divisions does not appear to be captured on PULSE. These CAD divisions accounted for approximately half of all recorded crime in Ireland. The comparable figure for PULSE crime incidents created from paper records was 16%.
- 6.7% of all offences created on PULSE in 2012 were created more than a week after they were first reported.
- There were no crime narratives shortened on PULSE and only one case of a narrative being changed inexplicably.
- Across seven major crime categories¹ (*Assault, Burglary, Criminal Damage, Public Order, Robbery, Theft and Unauthorised taking or interfering with a vehicle*), an estimated 3% of incidents were incorrectly classified to the wrong crime category while a further 4% of cases had insufficient information to determine the correct classification.
- Some 7% of incidents classified to *Attention and Complaints* (a non-crime category on PULSE) should have been classified as a crime, generally as either fraud or assault. The equivalent figures for *Property Lost* and non-crime *Domestic Disputes* were 4% and 7% respectively.
- An analysis of 69 *Assault* and *Assault causing harm* offences reclassified in the 12-months between January 2012 and January 2013 showed that nearly half (49%) were either not justified or it was unclear from the narrative what the justification was for the reclassification.

¹ In this report “crime category” will be used to refer to the Garda crime categories on PULSE while “ICCS crime category” will be used to refer to the CSO crime classification nomenclature.

- Some 54% of crimes marked as detected had corresponding charges or summons, while 46% did not have charges or summons attached. The status of detected was incorrectly applied to 35% of those crimes marked as detected but without a charge or summons sheet attached. Removing these detections would reduce the overall number of detected crimes by 16%.
- 23% of invalidated crimes were incorrectly classified as such.

While these findings indicate some issues with the way crime is recorded by An Garda Síochana, the CSO has decided to resume publication of recorded crime data, albeit advising users to consider these issues when interpreting crime statistics. The CSO will work with An Garda Síochana to improve the reliability of the data and will repeat this analysis at regular intervals to monitor data quality. In addition to this, the CSO is currently conducting a Crime and Victimization survey which will provide more data on the level of crime in Ireland.

1. Introduction

The purpose of this report is to summarise the CSO's examination of some of the issues raised by the Garda Inspectorate in their report "Investigating Crime" of the 11th November 2014². In particular, this report examined the issues highlighted in that report on the recording of crimes on the Garda Síochana database system PULSE (Police Using Leading Systems Effectively). Since these records form the basis of the CSO's recorded crime statistics, a detailed examination of these issues was a priority for the CSO. While these issues were being examined the CSO decided to delay the publication of its recorded crime statistics.

In carrying out this project, the CSO wishes to acknowledge the assistance of An Garda Síochana, in particular Crime Policy and Administration, the Garda Síochana Analysis Service and the Professional Standards Unit (PSU). The CSO also acknowledges the assistance provided by the Garda Inspectorate and the Department of Justice with various matters.

2. Background

2.1 The production of CSO crime statistics

The CSO is responsible for publishing official recorded crime statistics. These crime statistics are based on administrative data provided by the An Garda Síochana from their PULSE system.

² See http://www.gsinsp.ie/index.php?option=com_docman&Itemid=39. Any references to Inspectorate findings can be found in this report.

PULSE is a relational database system used to record crime details. The GISC (Garda Information Services Centre) central facility in Castlebar, County Mayo oversees most data entry on PULSE.

An Garda Síochána are responsible for the PULSE system and for the Fixed Charge Penalty System (FCPS). FCPS is another relational database system used for recording penalty points for minor road and traffic offences. This data is supplied to the CSO for inclusion in annual recorded crime statistics.

While An Garda Síochána was responsible for crime statistics prior to 2003, between 2003 and 2007 the responsibility for the publication of recorded crime statistics was transferred to the CSO under Section 47 of the 2005 Garda Síochána Act. While the data used by the CSO is obtained from the Garda Síochána, the CSO is an independent office and does not report to the Minister of Justice. Under Section 13 of the Statistics Act 1993 the Director General of the CSO has sole responsibility for the statistical methodology used by the Office and the contents of any statistical release or publication.

The CSO applies crime counting rules and the Irish Crime Classification System (ICCS) to this data as recorded in PULSE. It also performs additional quality assurance checks to produce recorded crime statistics on an annual and quarterly basis.

The basic counting unit in recorded crime statistics is the offence. Offences reported or which become known to members of An Garda Síochána are recorded as crimes when, on the balance of probability, a Garda determines that a criminal offence defined by law has taken place and there is no credible evidence to the contrary. The main rules are as follows:

- **Primary Offence Rule:** Where two or more criminal offences are disclosed in a single episode, it is the primary criminal offence that is counted.
- **One Offence Counts Per Victim:** One offence counts per victim involved with the exceptions of cheque/credit card fraud and burglary.
- **A continuous series of offences** against the same victim involving the same offender counts as one offence.

By applying these rules to the PULSE data, it is possible to produce recorded crime statistics.

2.2 How crime is reported to the Gardaí

Crimes in Ireland are either reported to An Garda Síochána by individuals or are reported by members of An Garda Síochána who witness an incident themselves. The majority of incidents are reported by members of the public.

The public can report the incident in a number of ways, including the following:

1. A phone call (including '999' calls) to a CAD (Command and Dispatch) equipped division. CAD is a Garda command and control system used to control the dispatch of Gardaí to incidents. It has the ability to store information on incidents (which may be criminal offences or non-criminal reports of accidents etc.) that are reported via phone to Garda dispatchers. The CAD system is used by national dispatchers but is not directly linked to PULSE. In 2011 there were around 160,000 incidents on CAD, which at that point covered telephone calls in the Dublin Metropolitan Region (DMR) only. It should be noted that a significant proportion of calls to CAD are non-criminal incidents.
2. A phone call (including '999' calls) to non-CAD equipped divisions or stations. They are recorded directly on an official incident report form such as the RC1 form and then subsequently entered on PULSE (ideally as soon as possible).
3. A visit to a station by an individual to report an incident. These crimes or incidents are often stored on paper forms such as RC1s, the notebooks of individual Gardaí or on station ledgers. These incidents are then usually entered on PULSE via GISC. As with CADs, the paper records are not directly linked to PULSE with a reference number etc., but do form the basis of entries in PULSE.
4. By direct observation of an incident by a member of An Garda Síochána. Details of incidents may be recorded by members of An Garda Síochána in notebooks for subsequent entry on PULSE or else recorded directly on PULSE by the Guard via a telephone call to GISC.

In 2011 approximately 50% of all criminal incidents on PULSE originated from CAD-equipped divisions while 50% came from non-CAD's equipped division. Regardless of how incidents are reported, after Gardaí have attended the scene of an incident a report is usually made. Among the possible outcomes:

- The caller or person who reported the incident is gone on arrival and it is impossible to determine whether an offence has taken place or not.
- The investigating Gardaí are satisfied that there is no evidence of an offence having occurred.
- The call was cancelled.
- The call was bogus or mistaken.
- The call was a civil rather than a legal matter.
- A member of the public was required to be moved on or assisted, but no offence has taken place.
- An offence has taken place.
- A prisoner was returned to the station.

Once the incident is recorded on PULSE and the investigation proceeds, ongoing updates will be entered.

2.3 How crime is recorded on PULSE

If the Garda Síochána are satisfied that a criminal offence has taken place, then they are obliged to record it on the PULSE system as soon as possible. This is usually carried out by the Gardaí contacting GISC. Individual Gardaí (in particular those in specialised units) may enter incidents on PULSE directly.

While the PULSE system has several hundred available fields for collecting information on incidents and offences, generally only a small number are applicable to a particular incident. The most common variables include:

- Date and time of incident occurrence.
- Date of incident report.
- Incident type. This is a system used by the Gardaí to classify crime. There are approximately 300 incident types on PULSE such as murder and drunkenness and including non-crime categories such as *Attention and Complaints* etc.
- Detection status, i.e. is the perpetrator of the crime detected?
- Date of birth of victims and suspected offenders (where applicable).
- Narrative of incidents.
- Location of incident (four address lines).
- Modus Operandi (MO) information associated with the particular incident. This could include motive, method of entry if a burglary etc.

After the incident has been reported, the Gardaí will investigate, record and classify it. They will only record an incident as an offence if they are satisfied that a criminal offence has occurred. The recorded criminal offences, once classified, will provide the data that will be used in the production of CSO recorded crime statistics. It is important to note that many reported incidents are not classified as offences for various reasons. Many incidents which the Gardaí do not consider to be offences are recorded in a miscellaneous incident type called *Attention and Complaints*. As this is not a crime category these incidents are not counted by the CSO as recorded crime. Another example is where property is lost, but there is no evidence of an associated theft. These are recorded in the *Property Lost* category.

In 2011, there were approximately 450,000 records on PULSE including:

- Some 96,000 non-crime incidents recorded under Attention and Complaints.
- Approximately 38,000 Property Lost incidents. By using this category, the Gardaí state that there is no criminal element to these incidents.
- Some 9,900 Domestic Dispute incidents. These are domestic incidents where there is no evidence of an offence having taken place.
- Approximately 300,000 crime incidents.

During the same period there were approximately 550,000 records on the FCPS system, mainly related to speeding and other minor road traffic offences. This FCPS data is not used in the quarterly recorded crime series but is used in the annual report. The analysis in this paper concentrates on the data used for the quarterly series.

2.4 Summary of Inspectorate findings in relation to the recording of crime

Beginning in 2012, the Garda Inspectorate conducted a major review of how crime was investigated in Ireland. This led to the publication of an extensive report in November 2014 called "Crime Investigation" which examined training, resource management, the treatment of those in custody and many other areas which are not relevant to the quality of crime statistics.

Of particular concern however to the CSO was the Inspectorate's review of how crime is being reported and recorded by An Garda Síochána. The Inspectorate report contains several findings in relation to the accuracy of recorded crime administrative data in Ireland. Table 1 below summarises these findings:

Table 1: Summary of Garda Inspectorate findings

Issue	Inspectorate analysis	Inspectorate findings
<i>Non-recording of crimes on PULSE</i>	The Inspectorate looked at 158 cases from the CAD and paper systems. They sampled 4 calls from 7 divisions for 5 categories of crime (assault, burglary, domestic violence, robbery and vehicle crime).	28% of the CAD records never made it to PULSE, including 45% of domestic violence and 47% of assaults.
<i>Timeliness concerns with recording crimes on PULSE</i>	The Inspectorate analysed 56,800 PULSE records created between 05/10/2012 and 25/10/2012. The analysis was based on comparison of creation and reporting dates on PULSE.	The Inspectorate found that 9.7% or all records were created on PULSE more than one week after being reported (to An Garda Síochána), which they consider unacceptable.
<i>Misclassification of crime incidents at initial stages</i>	The Inspectorate looked at 500 PULSE records (across 5 main crime categories such as assault, burglary, domestic violence, robbery and vehicle crime plus non-crime areas) where the crime classification remained unchanged from when it was first created in June 2012.	The Inspectorate found that 18% of those classified to assault minor, 28% to criminal damage, 67% to interfering with a vehicle and 28% theft from person were incorrectly classified. A further 42% of assault minor, 18% of criminal damage and 15% of theft from person had insufficient information for them to decide if it was incorrectly classified or not.
<i>Misclassification of non-crime incidents at initial stages</i>	The Inspectorate examined 500 PULSE records of non-crime incidents in 2011 and 2012 where the crime classification remained unchanged from when it was first created in 2011.	The Inspectorate found 6% of property lost and 16% of attention and complaints incidents should have been classified as a crime.
<i>Incorrect reclassification of incidents</i>	In 2011 there were nearly 1,000,000 PULSE records created, including 300,000 crimes. The Inspectorate requested information on any reclassifications of these crimes.	According to the Inspectorate, 8.5% of these records had been reclassified to other incident types. They say the current international average is approximately 4%.
<i>Incorrect application of detection and invalidation status to certain crimes in PULSE</i>	The inspectorate looked at 2,195 cases and found that 43% were marked as detected but 556 had no charge or summons attached. The Inspectorate then examined in detail 318 of the 556 records.	Of the 318 records examined in detail by the Inspectorate, 72% were incorrectly recorded as detections.

3. The response of the CSO to the Inspectorate report

3.1 The CSO's decision to delay the quarterly recorded crime releases

In November 2014, upon publication of the Inspectorate report the CSO decided to temporarily suspend the publication of crime statistics until it had fully examined the findings. The CSO decided on this course of action because the scale of the issues highlighted in the report relating to the quality of PULSE data.

The CSO began a comprehensive and independent review of PULSE data to assess the extent to which the findings of the Inspectorate are reflected in the data used by the CSO for the compilation of its recorded crime statistics. This review formed the basis of this document.

3.2 The CSO access to Garda data

Traditionally, the CSO did not have access to data on CAD or the paper forms. In late 2014 the CSO obtained access to the CAD dataset and Garda permission to access paper data to carry out a study in an attempt to quantify the proportion of reported criminal offence incidents (in paper or CADs) that have corresponding entries in the PULSE system.

The aim was to establish the extent to which legitimate reported offences are not being entered onto the PULSE system. The analysis is based on random samples of CAD and paper records which are checked on the PULSE system for corresponding entries. For other elements of the study the CSO was able to access the audit trail of some records.

Finally while the CSO is not usually issued with "non-crime" PULSE data, it now has access to this data and includes a complete analysis of these incident types as part of this report. In particular, the CSO received complete *Attention and Complaints*, *Property Lost* and *Domestic Dispute* data, since these were extensively analysed in the Inspectorate report as possible locations for misclassified/reclassified offences.

3.3 The Expert Group on Crime Statistics

Following the recommendations of the Garda Inspectorate in their November 2014 report, the CSO set up an Expert Group on Crime Statistics with the following terms of reference:

“The Expert Group, which will be chaired by the Central Statistics Office, will examine the recommendations contained in the Garda Inspectorate Report on Crime Investigation, in relation to the compilation of crime statistics by the CSO. In particular, it will review the crime counting, crime recording and crime detection rules, having regard to best practice in comparable jurisdictions.”

There are 6 recommendations in the report which specify a role for the CSO:

- *Recommendation 4.5* : The mandatory fields on PULSE, that are required for criminal data and analysis, should be determined
- *Recommendation 4.16*: The CSO shall receive all PULSE record incident data
- *Recommendation 5.4*: The development of new Crime Counting Rules.
- *Recommendation 5.9*: The designation of a baseline year for Crime Statistics.
- *Recommendation 8.24*: The development of on-line crime mapping information.
- *Recommendation 11.1*: The development of new Crime Counting rules for detections.

It should be noted that while the Expert Group will provide a detailed assessment of these six recommendations, it was not involved in the compilation of this CSO report.

4. CSO findings

The Inspectorate report contains several findings in relation to the accuracy of recorded crime administrative data in Ireland. As noted in section 2.4, these findings included:

- *Non-recording of crimes on PULSE*
- *Timeliness concerns with recording reported crimes on PULSE*
- *Alteration of narratives in PULSE*
- *Misclassification of incidents at initial stages*
- *Incorrect reclassification of incidents*
- *Incorrect application of detection/ invalidation status to certain crimes in PULSE*

The CSO's analysis focussed specifically on these six areas. The main objective was to estimate the extent of these issues using analysis of samples from Garda administrative data.

4.1 Non-recording of crimes on PULSE

Non-recording of crimes on PULSE from CAD

To see if CAD records of reported crimes were being captured correctly on PULSE, the CSO sampled 2,500 CADs records from 2011 covering seven crime categories and two non-crime category, in proportion to the size of the Garda division and the number of incidents. The CSO then attempted to match these incidents to PULSE records. Given that there is no common identifier between the two datasets, matching was done using the time and location of the incident, descriptions entered on CAD and PULSE etc. Table 2a below summarises the results of the matching process.

Table 2a: CADs-PULSE matching

Crime category	Incidents selected on CADs	No evidence of offence	Valid	Found on PULSE	Not found on PULSE	% of valid records not found on PULSE
<i>Assault (including armed/serious crimes)</i>	181	69	112	89	23	20.5%
<i>Burglary/Intruder</i>	255	58	197	173	24	12.2%
<i>Criminal Damage</i>	282	77	205	172	33	16.1%
<i>Public Order/Serious public Order</i>	972	712	260	196	64	24.6%
<i>Robbery</i>	22	5	17	15	2	11.8%
<i>Theft</i>	506	91	415	319	96	23.1%
<i>Unauthorised taking/interfering with MPV</i>	69	20	49	42	7	14.3%
Total	2,287	1,032	1,255	1,006	249	19.8%

After analysing narrative and outcome codes of 2,287 incidents on CAD, some 1,032 or 45% were deemed as not criminal offences and therefore there was no requirement to enter them on PULSE. This is particularly pronounced for *Public Order* offences where 73% of CAD *Public Order* entries were not criminal offences. This left 1,255 cases which should appear on PULSE. The rate of unmatched valid criminal offences not found on PULSE ranged from 12.2% for *Robberies* to 24.6% for *Public Order* offences, with an overall rate of 19.8% for the entire sample.

It is important to note that a CADs incident that does not appear to be on the PULSE system may actually be on PULSE but it was impossible to match the relevant records. Indeed some CARs records proved very difficult to match to a PULSE record, necessitating extensive searching.

An additional 213 CADs records were analysed which covered calls relating to *Bomb Scares* and *Domestic Dispute/DVSA*³. Most of these reports do not relate to criminal incidents, but in certain cases such calls could be eligible for recording on PULSE either as crimes or non-crime incident types. The majority of these incidents (153 out of 213 sampled) provided no evidence of any potential offence but of those that did (60 cases) around 23.3% of incidents (14 calls) were not recorded on PULSE either as crimes or non-crimes. Table 2b shows the result of this analysis.

³ Domestic Violence and Sexual Assault (DVSA)

Table 2b: Analysis of non-crime CADS incident types

Crime category	Incidents selected on CADs	No evidence of offence	Valid	Found on PULSE	Not found on PULSE	% records not found on PULSE
<i>Domestic dispute/DVSA</i>	201	141	60	46	14	23.3%
<i>Bomb Scare (no actual bomb)</i>	12	12	0			
Total Non-Crime related incidents	213	153	60	46	14	23.3%

Non-recording of crimes on PULSE from paper records

The prior CAD analysis only covered the Dublin Metropolitan Region in 2011 as outside Dublin the initial records of all reported crimes were being stored in paper format.

To see if paper records of reported crimes were being captured correctly on PULSE, the CSO sampled 536 records from 2011 (a combination of RC1-4 forms, station occurrence books and ledgers). These were randomly selected from 5 Garda regions with 3 stations per region and 32-36 records per station sampled. The Garda Síochána Professional Standards Unit (PSU) collected copies of the actual original records. Records were selected by systematic random sampling based on a designated record date selected at random for each station

Table 2c below shows the result of this analysis. Of the 536 records sampled, there was no evidence of any offence in 341 cases. These included reports of non-criminal road traffic incidents, mistaken 999 calls, false alarms and visits to stations to discuss non-criminal matters. Of note is the fact that 15 of these 341 records were illegible, thus making attempted matching impossible. Of valid incidents that should be recorded on PULSE, 32 cases or 16.4% were not recorded on PULSE.

Table 2c: Analysis of paper records

Crime category	Incidents selected on CADs	No evidence of offence	Valid	Found on PULSE	Not found on PULSE	% of valid records not found on PULSE
Total Paper records analysed	536	341	195	164	32	16.4%

4.2 Timeliness issues with recording crimes on PULSE

Each record on PULSE has a created date (the date on which it was created on PULSE) and a reported date (the date on which it was first brought to the attention of the Garda Síochána). The CSO analysed all criminal offences created on PULSE in 2012 or 269,194 records and found that 6.7% of offences were created more than one week after the reported date.

4.3 Alteration of narratives on PULSE

Each record on PULSE has a narrative field where details on the crime are captured. This field is amended if more or extra details are later added such as a further description of suspects, results of interviews etc.

The CSO conducted an analysis of narrative lengths to look at cases where there was editing of narratives to justify classification decisions. Firstly, a comparison was made of all crime incident narratives for 2011 by comparing the narrative length in the January 2012 dataset with the narrative length in the April 2014 dataset. The narrative lengths of all incidents were analysed to see if any reductions in length had taken place (which would indicate unacceptable editing). The CSO was unable to identify a single case (out of the approximately 260,000 criminal incidents) where the narrative had been shortened.

One shortcoming of this approach is that it cannot detect changes made after the creation of the record but before January 2012 which was the starting point for comparison. For example a crime record created on the 1st January 2011 and amended a week would not show up on the analysis above. In order to do a more in-depth analysis, the audit trails for a sample of 500 PULSE criminal records were selected, broken down by location. There were 250 reclassified crimes selected as well as 150 incidents classified as *Attention and Complaints*, 50 as *Property Lost* and 50 as non-crime *Domestic Dispute* incidents.

The audit trails record every change to the narrative in the PULSE system, the date and time of the change and the user who made the change. This allowed examination of the changes to incident narratives to establish if any erroneous changes were made to justify classification/reclassification decisions. Based on an analysis of audit trails, only 1 of the 500 records (a reclassified crime case) displayed evidence of a narrative being altered to justify an incorrect reclassification.

4.4 Misclassification of incidents at initial stages

Critical to the integrity of PULSE to PULSE (and CSO crime statistics) is the assumption that crimes are classified correctly. Each case or incident on PULSE is assigned to one of 300 incident type, most of which are crimes, although there are also non-crime categories such as *Attention and Complaints*.

Misclassification of criminal incidents

In order to examine the misclassifications of incident, the CSO carried out a random stratified sample of 864 criminal cases from 2011 in 6 high-volume serious criminal incident types. The sample was restricted to those incidents which hadn't changed classification a year later. 144 records were selected from each of *Assault Minor*, *Assault Causing Harm*, *Criminal Damages (Not Arson)*, *Theft from Person*, *Burglary*, and *Robbery from the Person*. Each record was examined to see if it was correctly classified, based on a reading of the narrative. The results of the analysis are shown in table 3.

Table 3– Analysis of misclassification of incidents classified as offences.

Incident type (ICCS)	Number of offences examined	Classified correctly	Misclassified	Insufficient information
		%	%	%
<i>005 Assault Minor</i>	144	87	5	8
<i>006 Assault Causing Harm</i>	144	92	1	8
<i>020 Criminal Damages (Not Arson)</i>	144	90	6	4
<i>055 Theft from Person</i>	144	90	9	1
<i>063 Burglary</i>	144	99	1	0
<i>070 Robbery from the Person</i>	144	98	0	2
Total	864	93	3	4

The CSO found that overall, 3% of sampled crime records were misclassified with a further 4% of cases deemed unclear if the classification was correct or not. The misclassification rate varied from a high of 9% for *Theft from Person* to a low of 0% for *Robbery from the Person*. It was unclear in 8% of *Assault Minor* and *Assault causing harm* if the classification was correct or not. Overall 93% of the offences were classified correctly, although this fell to 87% for *Assault Minor*.

Misclassification of non-crime incidents

The non-crime categories on PULSE are used to hold data on incidents which are reported to An Garda Síochana but are not deemed to be crimes. To see whether non-crime categories contained incidents which should have been classified as criminal offences, the CSO sampled 1,000 of the 96,815 *Attentions and Complaints* incidents in 2011 on PULSE, 500 of the 38,869 *Property Lost incidents* and 300 of the 9,851 recorded *Domestic Dispute* incidents⁴. The narrative of each sampled record was studied to see if it should have actually been classified as a criminal offence. The result of this analysis is shown in table 4.

Table 4: CSO analysis of non-crime categories

Non-crime category on PULSE	Number of records on the system in 2011	Sampled	Classified correctly	Misclassified	Insufficient information
			%	%	%
<i>Attention and Complaints</i>	96,815	1,000	92	7	1
<i>Property Lost</i>	38,869	500	94	4	2
<i>Domestic Disputes</i>	9,851	300	91	7	2

Based on this analysis, 7% of *Attention and Complaints* incidents should have been classified as criminal offences and it was unclear in a further 1% of records if the non-crime classification was correct or not. The CSO found that approximately 4% of *Property Lost* incidents were incorrectly classified as non-crime and it was unclear in a further 2% of cases if the non-crime category was correct. The CSO also found that 7% of non-crime *Domestic Disputes* cases were incorrectly classified while it was unclear in a further 2% of cases.

In a further analysis of what should have happened to the misclassified non-crime incidents in the sample, the CSO found that:

- Almost half of the 69 misclassified *Attention and Complaints* incidents should have been recorded as *Assaults* or *Fraud/Threatening* letters. One incident each of *Sexual Assault* and *Robbery from the Person* had also been incorrectly placed in *Attention and Complaints*.
- All of the misclassified *Property Lost* incidents (18 incidents) should have been classified as thefts.
- Of the 20 misclassified *Domestic Disputes*, 13 incidents should have been classified as *Assaults* with one other classified as *Assault causing Harm*.

⁴ These are domestic incidents where there is no evidence of an offence having taken place.

4.5 Reclassification of crime incidents

To analyse this, the CSO compared the crime classification of 259,533 incidents as recorded on PULSE between January 2012 and January 2013 and their corresponding crime classification within PULSE 12 months later. Overall reclassification rates⁵ for crime groups in the twelve-month period were very low with only 3 of the 15 groups exceeding 1%.

However this method, while having the advantage of looking at all recorded crime, suffers from a timing issue (similar to the bulk analysis of narrative changes). Most reclassification occurs during the initial reporting stages of the offence. Since the CSO only gets a copy of the PULSE data at the end of the reference month, any criminal event first recorded on PULSE and then subsequently changed before the data is given to the CSO will not show as a reclassification.

For example, if a crime is first recorded on PULSE on the 5th April but reclassified on the 20th June, the CSO will not be able to show this as a reclassified crime as the first time the CSO will receive data on the crime will be the 1st July. Therefore, the actual reclassification rate is likely to be considerably higher than the estimate in this report.

In order to study reclassification in more detail, the 258 *Assault, Assault Causing Harm* and *Criminal Damage* offences (57, 12 and 189 cases respectively) that were reclassified between January 2012 and January 2013 were examined in detail to see if they had been upgraded or downgraded and if this was justified.

These incident types had been selected based on advice from the Inspectorate, who believed that these types were particularly vulnerable to misclassification. Based on our analysis, 15% of reclassifications for 69 *Assaults* and *Assault Causing Harm* cases were unjustified, 71% were justified while there was insufficient information to make a determination in a further 14% of instances (see table 5). It's also worth noting that these types of incidents would have formed part of the population from which the sample in section 4.4 was drawn.

⁵ Reclassification was taken as changing from one four digit ICCS crime group to another. For more information on the ICCS please see <http://www.cso.ie/en/media/csoie/releasespublications/documents/crimejustice/current/crimeclassification.pdf>

Table 5: Analysis of assault offences reclassification Q1 2012

<i>ICCS crime category</i>	<i>Justified</i>	<i>Unjustified</i>	<i>Unclear</i>	<i>Total</i>
	%	%	%	%
<i>Assault causing harm</i>	60	28	12	100
<i>Assault</i>	75	10	15	100
Total	71	15	14	100
Direction of change				
Upgrades	100%	0%	0%	100
Downgrades	51%	26%	24%	100
Similar seriousness	100%	0%	0%	100

Further analysis showed that only 51% of the downgrades⁶ were justified while 100% of the upgrades were justified. 26% of the downward *Assault and Assault causing harm* reclassifications downward were unjustified while 24% of cases were unclear.

The CSO also looked at the reclassification of 189 Quarter 1 2012 criminal damage cases. The analysis revealed that only 15% were downgraded, while almost 50% were reclassified upwards (see table 6).

Table 6: Analysis of reclassifications for Criminal Damage

<i>Crime category</i>	<i>Number</i>	<i>%</i>	<i>Change to Seriousness</i>
Criminal Damage: Total	189		
<i>Arson</i>	8	4	Upgrade
<i>Endangering Traffic</i>	1	1	Upgrade
<i>Burglary</i>	83	44	Upgrade
<i>Theft of/From MPV</i>	32	17	Same
<i>Theft - other</i>	34	18	Same
<i>Trespass - criminal</i>	3	2	Same
<i>Public Order (downgrade)</i>	3	2	Downgrade
<i>Miscellaneous Road traffic</i>	2	1	Downgrade
<i>Attention and Complaints</i>	23	12	Downgrade
Percentage upgraded		49%	
Percentage remained the same		37%	
Percentage downgraded		15%	

⁶ The determination of the change to the seriousness of a crime, i.e. is it upgraded to a more serious category or downgraded to a less serious category, is done in accordance with the Garda Incident Book which discusses the relative seriousness of various crimes.

Reclassifications from *Criminal Damage* to *Burglary* accounted for 44% of all reclassifications. The next most frequent were to *Theft* categories, which can be regarded as of similar seriousness.

The CSO looked at the movement of incidents into and out of the *Attention and Complaints* non-crime category for 2012 (Table 7). The CSO established that 23.9% of reclassified *Attempts/Threats to Murder, Assaults, Harassments and Related Offences* had been moved out of crime categories (mainly to *Attention and Complaints*), while 18.8% of reclassified *Group 07 Burglary and Related Offences* and 11.5% of reclassified *Group 08 Theft and Related Offences* had been moved out of crime categories as well.

Table 7: Incidents reclassified to non-crime categories

ICCS category	Reclassified in 12-month period between 2012 and 2013	Reclassified to non-crime category	% reclassified to non-crime category
01 Homicide Offences	2	0	0.0%
02 Sexual Offences	29	7	24.1%
03 Attempts/Threats to Murder, Assaults, Harassments and Related offences	138	33	23.9%
04 Dangerous or Negligent Acts	68	50	73.5%
05 Kidnapping and Related Offences	2	1	50.0%
06 Robbery, Extortion and Hijacking Offences	5	1	20.0%
07 Burglary and Related Offences	48	9	18.8%
08 Theft and Related Offences	400	46	11.5%
09 Fraud, Deception and Related Offences	78	12	15.4%
10 Controlled Drug Offences	28	10	35.7%
11 Weapons and Explosives Offences	3	0	0.0%
12 Damage to Property and to the Environment	388	39	10.1%
13 Public Order and other Social Code Offences	129	14	10.9%
15 Offences against Government, Justice Procedures and Organisation of Crime	26	5	19.2%

4.6 Incorrect application of detection status in PULSE

According to the current Crime Counting Rules, the Gardai can count an offence as detected where:

- Criminal proceedings have begun against at least one person for the offence.
- A child is being dealt with under diversion programmes.
- Where the crime has been detected but a decision has been made not to prosecute. These reasons include:
 - A victim or essential witness refuses or is unable to attend the court proceedings.
 - The offender dies.
 - The offender is ill or is unlikely to be well enough to face proceedings.
 - The crime was committed by a child under the age of responsibility.
 - The DPP or equivalent decides that the public interest would not be served by proceeding with a charge.
 - The statute of limitations has run out on the charge.

The CSO analysed the extent to which detected offences had associated criminal proceedings. To measure this the CSO looked at 138,807 detected offences in 2011. It established that 54% of detected incidents had associated charges or summons while 46% did not. The percentage of detected offences with charges or summons varied from 93% of *Homicide offences* to around 45% for both *Attempts/Threats to murder, assaults, harassments and Kidnapping and related offences* (see table 8).

Table 8: Analysis of detections and proceedings commenced

ICCS category	Detected	Detections where charges or summons exist	% Detections where charges or summons exist
<i>01 Homicide Offences</i>	57	53	93.0%
<i>02 Sexual Offences</i>	1,144	390	34.1%
<i>03 Attempts/Threats to Murder, Assaults, Harassments and Related offences</i>	10,401	4,667	44.9%
<i>04 Dangerous or Negligent Acts</i>	4,543	2,747	60.5%
<i>05 Kidnapping and Related Offences</i>	74	34	45.9%
<i>06 Robbery, Extortion and Hijacking Offences</i>	1,440	910	63.2%
<i>07 Burglary and Related Offences</i>	6,441	3,817	59.3%
<i>08 Theft and Related Offences</i>	27,776	15,663	56.4%
<i>09 Fraud, Deception and Related Offences</i>	2,390	1,366	57.2%
<i>10 Controlled Drug Offences</i>	17,449	11,321	64.9%
<i>11 Weapons and Explosives Offences</i>	3,103	1,837	59.2%
<i>12 Damage to Property and to the Environment</i>	8,023	3,795	47.3%
<i>13 Public Order and other Social Code Offences</i>	45,979	23,211	50.5%
<i>15 Offences against Government , Justice Procedures and Organisation of Crime</i>	9,987	4,966	49.7%
Total	138,807	74,777	53.9%

The CSO then examined incidents which were marked as detected where no charges or summons existed. This was to determine if detection rules were applied correctly. Therefore, the CSO selected a sample of 500 recorded offences in 2011 and 2012 where an incident was marked as detected, but where proceedings were not marked as commenced (i.e. no charges or summons attached). Sampled incidents were stratified by Garda Division. The narratives were then analysed for these offences to determine if the detection status was correctly applied (see table 9).

Table 9: Analysis of detected incidents with no corresponding charges or summons

	Number	%
Correctly detected according to counting rules	327	65%
Admissions made	37	7%
Caution used to resolve matter	139	28%
Charges/summons issued	69	14%
Clear offence - no complaint or withdrawal	12	2%
JLO issued	37	7%
On receipt of warrant	8	2%
Suspect detained - property recovered	10	2%
Suspect detained - section 4 or related	15	3%
Not detected according to counting rules:		
Decision made not to prosecute	32	6%
No reference to further proceedings or explanation otherwise	141	28%
Not correctly detected according to counting rules	173	35%
Total	500	100%

The CSO study concluded that 35% of the offences without a charge or summons sheet attached were incorrectly designated as detected, based on current Garda detection rules. This has the effect of reducing the overall number of detected crimes from 138,807 to approximately 116,500 cases or a drop of 16%.

4.7 Incorrect application of invalidation status in PULSE

Crimes should only be invalidated in circumstances where it is clearly established that no offence has taken place, or where the counting rules were incorrectly applied. The number of crime records invalidated every year is relatively low, around 1.2% of all crime records or 3,000 incidents a year, in all groups. The CSO examined whether detection rules, as currently defined, were applied correctly to a sample of 500 invalidated incidents from 2011. To detect mistaken invalidation in the PULSE system, the CSO sampled one invalidated incident from each station and analysed the narrative to see if the invalidation decision was justified or not. This resulted in an analysis of 528 incidents (table 10).

Table 10: Study of invalidated incidents

ICCS offence group	Selected invalidated records	Number of justified invalidations	Number of unjustified invalidations	Unclear if invalidation is justified	% Unjustified
<i>01 Homicide Offences</i>	13	9	4	0	30.8%
<i>02 Sexual Offences</i>	60	34	26	0	43.3%
<i>03 Attempts/Threats to Murder, Assaults, Harassments and Related offences</i>	16	14	2	0	12.5%
<i>04 Dangerous or Negligent Acts</i>	4	2	2	0	50.0%
<i>05 Kidnapping and Related Offences</i>	39	22	17	0	43.6%
<i>06 Robbery, Extortion and Hijacking Offences</i>	169	135	32	2	18.9%
<i>07 Burglary and Related Offences</i>	17	14	3	0	17.6%
<i>08 Theft and Related Offences</i>	16	12	4	0	25.0%
<i>09 Fraud, Deception and Related Offences</i>	4	3	1	0	25.0%
<i>10 Controlled Drug Offences</i>	64	48	15	1	23.4%
<i>11 Weapons and Explosives Offences</i>	27	16	10	1	37.0%
<i>12 Damage to Property and to the Environment</i>	53	43	2	8	3.8%
<i>13 Public Order and other Social Code Offences</i>	5	5	0	0	0.0%
<i>15 Offences against Government , Justice Procedures and Organisation of Crime</i>	3	3	0	0	0.0%
<i>17 Non Offence Types</i>	38	34	4	0	10.5%
Total	528	394	122	12	23.1%

The CSO concluded that 23.1% of invalidated incidents were invalidated incorrectly. Of the 169 invalidated *Theft offences*, 32 or 18.9% were incorrect while 26 of the 60 *Assaults and related offences* (or 43.3%) were incorrectly invalidated.

5. Assessment of impact on Recorded Crime statistics

5.1 Impact of findings on 2011 Quarterly Recorded Crime statistics.

In this section, an attempt is made to extrapolate the impact of some of the issues highlighted in this analysis on recorded crime statistics for 2011. Table 11 shows the extrapolated estimates of 2011 recorded crime figures, taking into account the non-recording of reported offences (both CADs and paper) and the misclassification of crimes as non-crimes on recorded crime figures in 2011.

Please note that all these extrapolated estimates are approximate, based on trends observed in the CSO analysis and should be taken as indicative only. Furthermore, this analysis does not account for changes due to misclassification between recorded offences (an example of which would be the classification of an *Assault Causing Harm* as an *Assault Minor* – in this case, the offence is counted in Group 03 regardless).

Table 11: Extrapolated impact on 2011 recorded crime

ICCS category	Recorded crime for 2011	Extrapolated estimates for 2011 (rounded)	% Change
01 Homicide Offences	66	66	0%
02 Sexual Offences	2,014	2,100	5%
03 Attempts/Threats to Murder, Assaults, Harassments and Related offences	17,062	23,500	38%
04 Dangerous or Negligent Acts	9,946	10,000	1%
05 Kidnapping and Related Offences	109	109	0%
06 Robbery, Extortion and Hijacking Offences	2,931	3,500	19%
07 Burglary and Related Offences	27,695	32,800	18%
08 Theft and Related Offences	76,974	98,000	27%
09 Fraud, Deception and Related Offences	5,370	6,800	26%
10 Controlled Drug Offences	17,695	17,800	1%
11 Weapons and Explosives Offences	3,483	4,300	23%
12 Damage to Property and to the Environment	35,574	43,100	21%
13 Public Order and other Social Code Offences	49,060	61,400	25%
15 Offences against Government , Justice Procedures and Organisation of Crime	10,173	10,400	3%

A summary of the changes:

Group 01 – Homicides

Homicide Offences do not appear to have been affected by any issues in this report.

Group 02 – Sexual Offences

An estimated 1.14% (1/69) of misclassified *Attention and Complaints* should have been recorded as *Sexual Offences*. If applied to the overall *Sexual Offences* group, this would mean that the group total would increase by about 100 offences from 2,014 to approximately 2,100. This group does not appear to be affected by the reporting-recording gap (since this issue was addressed in 2011 by An Garda Síochana).

Group 03 – Attempts, Threats to Murder, Assaults, Harassments and Related Offences.

Assault offences comprise around 85% of offences in this group. This group would be affected by both the failure to record reported *Assaults* and the fact that a large proportion of the misclassified *Attention and Complaints* sample (28 out of 69 cases) and *Domestic Dispute incidents* (16 out of 20 cases) relate to Group 03 offences. Therefore, *Assaults* would rise by 38% from 17,062 to about 23,500.

Group 04 – Dangerous and Negligent Acts

Since 1 of the 69 misclassified *Attention and Complaints* should have been classified as a *Dangerous or Negligent Act*, this means that this group total should be increased very slightly by about 100 incidents from 9,946 to approximately 10,000.

Group 05 – Kidnapping and Related Offences

This group does not appear to have been affected by any of the issues raised.

06 Robbery, Extortion and Hijacking Offences

According to the CSO analysis of CAD and paper records, around 1 out of 8 reported *Robbery, Extortion and Hijacking Offences* are not being captured on PULSE. In addition to incidents not being recorded, about 1.14% of misclassified *Attention and Complaints* are robberies. This would lead to an increase from 2,931 to approximately 3,500 recorded Group 06 offences, or an increase of 18%

Group 07 – Burglaries and Related Offences.

Firstly, based on the CADs and paper analysis, around 15% of reported *Burglaries* are not recorded. Furthermore some *Attention and Complaint* incidents should have been recorded as burglaries. Group 07 offences should therefore increase by 22% overall to about 33,700 recorded offences.

Group 08 Thefts and Related Offences.

Overall, Group 08 offences could be expected to rise from 76,975 to around 98,000 or an increase of 27%. This is due to a combination of non-recording of reported incidents (around 24% for CAD), and, in particular, the contribution of misclassified *Property Lost* incidents (the CSO estimates that around 1,400 such incidents a year should be classified as thefts).

09 Fraud, Deception and Related Offences

According 22% of misclassified *Attention and Complaints*, (1,400 incidents) should be classified as Group 09 offences. This would lead to an increase of 26% in the number of recorded frauds in 2011, from 5,370 to approximately 6,800.

Group 10 Controlled Drug Offences

There would be an increase in the number of recorded Group 10 offences due to misclassification of around 1.4% of misclassified *Attention and Complaints* or 100 offences. This would lead to a 1% increase in the number of recorded Group 10 offences from 17,695 to just below 17,800.

Group 11 Weapons and Explosives Offences

The main impact on this group is that around 1 in 4 reported *Weapons* incidents are not recorded in PULSE. If corrected, this would lead to an approximate increase of 23% in the number of recorded Group 11 offences to 4,300.

Group 12 Damage to Property and to the Environment

Analysis indicates that 1 in 6 reported *Criminal Damage* offences are not recorded. This would lead to an increase in this category from 33,774 to around 41,300. Furthermore around 7.2% of misclassified *Attention and Complaints* (or around 500 offences) should be included in this category, as well as 5% of misclassified non-criminal *Domestic Disputes*. As a result the revised figure for *Criminal Damage* offences would be around 43,100, or an increase of around 20%.

Group 13 Public Order and other Social Code Offences

Misclassification to this group is unlikely to be a major factor. However, since around 20% of reported *Public Order* offences are not being recorded, this would lead to an increase of 25% in the annual Group 13 figure from 49,060 to approximately 61,400 cases.

Group 15 Offences against Government , Justice Procedures and Organisation of Crime

The main impact on this group would be the re-assigning of misclassified *Domestic Disputes*, leading to an increase of 3% in the number of offences in this Group to around 10,400 incidents.

6. Recommendations for improving the quality of PULSE data

6.1 Conclusions

The analysis carried out by the CSO shows some issues with the quality of crime statistics.

- Based on the samples selected there was a reporting-recording gap of approximately 18% in the selected sample between CAD/paper and PULSE.
- Across seven major crime categories an estimated 3% of incidents were incorrectly classified to the wrong crime category while a further 4% of cases had insufficient information to determine the correct classification.
- Some 7% of incidents classified to Attention and Complaints, 4% of Property Lost and 7% of non-crime *Domestic Disputes* should have been classified as a crime.
- An analysis of some reclassified assault offences showed that nearly half (49%) were either not justified or it was unclear from the narrative what the justification was for the reclassification.
- Detected status was incorrectly applied to 16% of all those crimes marked as detected.
- 23% of invalidated crimes were incorrectly classified as such

The CSO will repeat this analysis at regular intervals in the future.

6.2 Recommendations for An Garda Síochána

There are certain changes to the operation of PULSE which would be of benefit, both for this type of analysis but also for crime data quality.

One of the main difficulties in tracking the movement of data from the initial paper or CAD report to the PULSE system was the lack of some unique identifying number. Such a link would significantly reduce the time taken to compare incidents on CAD/paper and PULSE and would be of benefit to any system set up to improve this reporting-recording gap between crimes reported to the Gardai and crimes recorded on PULSE.

It is important that the narrative on the crime incident on PULSE supports the crime classification given to that incident as well as any decisions taken on detection and/or invalidation status. In some cases the only conclusion to be drawn from the analysis was that there was insufficient information to support the decisions taken.

The CSO also fully supports the idea of centralising the decision making process in PULSE. This will help ensure that incidents, both crime and non-crime are correctly classified and any decisions regarding reclassification, detection and/or invalidation follow correct procedures.

Finally, in order to address the issues raised by the CSO analysis, an additional management role will be important, not only for PULSE but also for the reporting-recording gap and related issues. Given the importance of crime statistics, users and the general public need to have confidence in crime statistics and the way they are produced.